Spuckler, Amanda (DLI)

From: Mike Jindra <Mike.Jindra@dsgsupply.com>
Sent: Tuesday, November 26, 2019 12:48 PM
To: Spuckler, Amanda (DLI)
Subject: ASHRAE 62.2 letter
Attachments: SKM_C36819112612150.pdf

Hi Amanda,
I faxed a letter in earlier this morning from myself.
Attached is a signed letter from one of my customers who believe in balanced ventilation.
If you want to send out a confirmation that you received it to him, his email is aaron@riccarhvac.com

I will probably be sending you a few more as I receive them.

Thank you for your attention on this,

Mike Jindra | *Account Manager – Plumbing/HVAC*
Dakota Supply Group | **P** (952) 935-0445 , **Ext:** 2219 | **F** (952) 935-7666
845 Berkshire Lane N | Plymouth, MN 55441
M (612) 597-3344

dakotasupplygroup.com

From: st.pcopier@dsginc.biz <st.pcopier@dsginc.biz>
Sent: Tuesday, November 26, 2019 12:16 PM
To: mjindra@dsginc.biz
Subject: Message from KM_C368

11/26/2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Aaron Bosen
Riccar Heating

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

NOTE: Balanced ventilation has proven to be a much better method for ventilating new, tightly constructed homes in our climate. It has given us much more control of pressure and indoor air quality in our customer's homes and has eliminated some negative side effects of exhaust only ventilation. We feel allowing this method again would be a step backwards in our industry, and as a company, we would not revert back to using that method of satisfying code requirements.

To: Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

From: Rick Cobbs
The Energy Network Worldwide
15592 60th Ave N,
Plymouth, MN 55446

11/25/19

Re: PROPOSAL TO ADD ASHRAE 62.2-2016 TO MINNESOTA RULES CHAPTER 1346 AS A VENTILATION COMPLIANCE OPTION.

Dear Ms. Spuckler:

I would like to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This would add ASHRAE 62.2 as an alternative compliance path for residential ventilation.

We are in a unique situation in Minnesota as we are one, if not the only jurisdiction which currently requires balanced ventilation. We are also building some of the tightest homes in the country and because of this proper ventilation is important for the health of the occupants and the durability of the structure.

If ASHRAE 62.2, is added as an option this will allow the options of other ventilation systems which are not balanced. This will essentially turn back the current code, and in my opinion, most residential builders will return to exhaust only ventilation using continuous running bath fans.

I feel if Minnesota is going to allow ASHRAE 62.2, there needs to be a public hearing with input from industry stakeholders that understand this implication.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Rick Cobbs
Director of Production Services
The Energy Network Worlwide

The Energy Network
Worldwide LLC
P: 612.913.4250
E: its@TENww.com

Company Address:
15592 60th Ave N
Plymouth, MN 55466

Spuckler, Amanda (DLI)

From: Mike Wilson <Mike.Wilson@dsgsupply.com>
Sent: Wednesday, November 27, 2019 2:31 PM
To: Spuckler, Amanda (DLI)
Cc: Mike Wilson
Subject: request fo code hearing
Attachments: 11-27-19 doli comment.docx; MN DOLI - Chapter1346 Comment Template.docx

Amanda,

There is two attachments which request for a hearing in the ST of MN 1346 code making process

Please respond that you receive these attachments

Mike Wilson | *Technical Application Specialist – HVAC*
Dakota Supply Group | **P** (952) 935-0445 , **Ext:** 2217 | **F** (952) 935-7666
845 Berkshire Lane N | Plymouth, MN 55441

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November 27, 2019

Department of Labor and Industry

c/o Ms. Amanda Spuckler

443 Lafayette Road N., St. Paul, MN 55155

RE: Rulemaking process for MN rules chapter 1346

Dear Ms. Spuckler

I am writing to request a hearing on the proposed language changes to Minnesota Rules Chapter 1346 Allowing ASHREA 62.2 as an alternative compliance path option would be irresponsible from an Indoor Air Quality , Building Durability , additional CO2 contribution and would lead to more comfort complaints from home owners. This request is to remove ASHREA 62.2 as an alternate path to MN Rules Chapter 1322 from both Chapter 1346 and 1309

Since 1981 I have been involved in the HVAC industry, specializing in Ventilation. Approximately half of my career has been in the field as an installing HVAC Tech/Service and the balance of that time has been as a technical person dealing with all aspects of residential ventilation both Exhaust -only and Balanced systems . Also, since 1994 have been involved with several code committees (MN) regarding energy , make up air, and ventilation as code cycles came up for review.

As a current College HVAC instructor and a respected trainer in the construction industry, I have presented State of MN Energy codes for Continuing Education for Builders, Inspectors ,and Architects. As you might know these programs have to be vetted for content and accuracy. Also have presented these same sessions to the HVAC community , have been involved in these training since 1998, countless amount of times . When the Weatherization (CAP)industry was required to adopt ASHREA 62.2 several years ago, I was selected to write the curriculum, build the train the trainer program, and do some of training state wide for the Weatherization (CAP) groups

The Sonar states, "Because ASHREA 62.2 has the same performance requirement for ventilation as Minnesota Rules, Chapter 1322 it is a reasonable to permit the use of ASHREA 62.2 as an alternative." Having Trained, Designed, Installed, Serviced and Consulted to both HVAC (MN 1322) and the Weatherization (ASHREA 62.2) Community's , I have a very clear and detailed view point why this statement is false. If needed I can go into a comparison of both codes with detail if that would be helpful. Attached is Mike Moore's letter that go into some of the other details

I would appreciate your confirmation that this document and e-mail was receiver and submitted in an acceptable format to be considered as an official comment

Respectfully,

Mike D. Wilson

Technical Service Advisor -Dakota Supply Group

Faculty HVAC Instructor- Minneapolis Technical and Community College

Dakota Supply Group

475 West Minnehaha Ave W

St. Paul, MN, 55107

DATE

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Balanced ventilation required to provide outdoor air (R403.5)	No requirement for balanced ventilation. Exhaust, supply, or balanced are permitted to provide outdoor air.	Approval of 62.2 would enable a single bathroom exhaust fan to be used to provide the outdoor air requirements for a dwelling unit. Depressurization caused by exhaust-only systems can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
Minimum continuous ventilation rate of 40 cfm (R403.5.3)	No minimum ventilation rate backstop	Approval of 62.2 could result in the ventilation rate going down to zero in some cases, meaning no mechanical ventilation is would be required for some dwelling units.
Outdoor air for conditioned, unfinished basements, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Approval of 62.2 would reduce the ventilation rate by as much as 50% for homes on unfinished basements. 62.2 recognized this as a problem and modified the requirement in future versions, but the 2016 version is still broken.
Outdoor air for conditioned crawlspaces, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Unless addressed elsewhere in MN's code, approval of 62.2 would remove any provisions to ensure that conditioned crawls meet minimum requirements.
Distribution: where a supply and return duct are used to meet ventilation requirement for basement, they must be separated by ½ the diagonal dimension of the basement to avoid short circuiting (R403.5)	No requirement for distribution in basements	Approval of 62.2 would remove all air distribution requirements from MN's code. Distribution supports uniform air quality within a dwelling unit. Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, rendering the ventilation system ineffective.
Fan efficacy: establishes minimum requirements (Table R403.5.1)	No requirement for fan efficacy	Approval of 62.2 as an alternative to 1322 would remove the requirement for fan efficacy, meaning the energy required to operate ventilation systems could increase significantly. This deregulation of

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		energy use of ventilation systems is in direct opposition to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state. Energy efficiency is one of the most cost-effective means to achieve GHG savings, and this rollback would compromise savings gained to date.
Total ventilation flow rate required at twice the continuous outdoor air rate to provide extra ventilation capacity as needed (R403.5.2)	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
HRVs must meet HVI Standard 920, 72 hours minus 13°F (-l0°C) cold weather test or be certified by a registered professional engineer (R403.5.5)	No requirement for cold weather test	Without the cold weather test... (MANUFACTURERS TO FILL IN THE BLANK)
Distribution: requires delivery of outdoor air to each habitable space (R403.5.6.1)	No distribution requirement. ASHRAE 62.2 dwelling unit ventilation requirements may be met by a single bathroom exhaust fan located in a remote corner of the home.	Distribution supports uniform air quality within a dwelling unit. If ASHRAE 62.2 is approved, the requirement for distribution will be removed, and an exhaust fan located in a remote corner of the home (such as the master bedroom) would be approved to provide dwelling unit ventilation. Such a configuration could provide little to no air quality benefit in other areas of the home (such as children's bedrooms).
Outdoor air provided directly to habitable spaces shall be tempered (R403.5.6.1.2)	No requirement to temper outdoor air	Introducing outdoor air without tempering it (as approved by 62.2) can result in very uncomfortable conditions indoors, prompting occupants to disable their ventilation system. Disabling ventilation systems can be expected to result in poor indoor air quality, high moisture, and increased condensation potential that can support mold growth and ultimately compromise a home's structural integrity. Further, builders/designers frequently satisfy the

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		requirement to temper outdoor air by specifying an H/ERV. These energy-efficient systems save large amounts of energy, especially in cold climates. In fact, recent action has been taken in ASHRAE 90.1 to require H/ERVs for dwelling units in the prescriptive path for climate zones 6 and 7 (see 2019 Section 6.5.6.1). A similar requirement is expected in the 2021 IECC, based on the public comment hearing vote for approval in October 2019 (pending final on-line voting; see proposal CE133 to the IECC). Minnesota, which has led the nation in this regard, would be stepping back from its leadership role in energy-efficient ventilation just as the model codes are beginning to follow Minnesota's lead.
In-situ airflow verification required if flow greater than 30 cfm and producible to building official upon request (R403.5.6.I.3)	In-situ flow verification only required for outdoor air systems, not local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
Maximum intermittent ventilation sone level: 2.5 sones R403.5.7)	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm. No requirement for remotely mounted fans.	Studies by Lawrence Berkeley National Lab have shown that a primary reason that range hoods are not operated is because occupants believe they are "too noisy". MN's current requirement for lower sone rates than 62.2 supports operation of range hoods and consequently, better indoor air quality for occupants.
Prohibits simultaneously connecting both supply and return ventilation air ducts to a forced air circulation system, with exception (R403.5.9)	No limitations to ducting supply and return ventilation air ducts to a forced air circulation system	ASHRAE 62.2 permits poor installation practices when integrating balanced systems with forced air circulation systems – which can render ventilation systems completely ineffective in providing acceptable IAQ.
Backdraft dampers are required on supply and exhaust ventilation systems (R403.5.10)	No dampers required on individually ducted supply or exhaust ventilation system	Backdraft dampers help reduce air leakage from the building when ventilation systems are not operating – thereby saving energy. Removing this requirement from MN's code is expected to increase energy use and promote over-ventilation.

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Installation of ventilation system components shall minimize transmission of noise and vibration (R403.5.13)	No requirements for installation to minimize noise and vibration	Approval of 62.2 would remove MN's current requirements that promote quality installation.
Controls are required to be readily accessible (R403.5.14.4)	Controls are not required to be readily accessible in all cases.	Approval of 62.2 would limit accessibility of controls and occupants' ability to use them effectively in some cases.

Spuckler, Amanda (DLI)

From: Mike Daniels <mike.daniels@auersteel.com>
Sent: Wednesday, November 27, 2019 12:51 PM
To: RULES, DLI (DLI)
Subject: MN DOLI - Chapter 1346 Comment Submission Letter
Attachments: MN DOLI - Chapter1346 Comment Submission.docx

Dear Ms. Spuckler and the Department of Labor and Industry,

Please accept my comment submission letter. See attached.

Thank you.

Mike Daniels
Vice President of Sales & Marketing | Auer Steel & Heating Supply Co.
Direct: 763-450-9226 or Ext 3226 | Cell: 763-286-2999

DATE

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I request a hearing on the proposed changes to Minnesota Rules Chapter 1346 (part of R-04515).

I additionally request that the proposals to allow ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 be removed from both Chapter 1346 and also Chapter 1309 (by reference).

Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code. These provisions have been successfully implemented by the market place and have provided significant indoor air quality and energy-savings benefits to Minnesota purchasers of new homes.

The proposal to all ASHRAE 62.2 will increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans.

The justification in the SONAR for adoption of 62.2 is misleading and erroneous:

1. The SONAR asserts that "ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322" as an argument to permit the use of ASHRAE 62.2 as an alternate compliance path. In fact, the performance requirements of 62.2 and Chapter 1322 are very different, and 62.2-compliant systems under-perform Chapter 1322 compliant systems across over a dozen criteria.
2. The SONAR claims incorrectly that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." The two are different in at least four areas:
    a. Installation requirements: ASHRAE 62.2 does not require installation of balanced systems with distribution and also field verification of local exhaust flow rates, but Chapter 1322 does.
    b. Control of Ventilation: Chapter 1322 requires all ventilation controls to be readily accessible, so that occupants' have full control over their Indoor Air Quality (IAQ) systems, but ASHRAE 62.2 does not.
    c. Air change rates:
        i. ASHRAE 62.2 permits ventilation rates to go to zero, and in some cases requires no mechanical ventilation. Chapter 1346 as it stands requires a minimum of 40 cfm.
        ii. Chapter 1322 requires roughly double the ventilation air change rates for unfinished basements than does ASHRAE 62.2.

These are not just technical or editorial differences. They represent a significant step backwards for the indoor air quality and health of Minnesota home-buyers. See the attachment for the many other differences.

The proposed text in for Chapter 1346.0050 adds the statement that "ASHRAE 62.2 is not subject to frequent change". In fact, ASHRAE 62.2 constitutes a rapidly changing target. In ASHRAE parlance this is a "continuous

maintenance" standard, changes rapidly, and already has been replaced by an updated standard with many significant changes. ASHRAE 62.2-2016 no longer represents the best thinking on the subject of residential ventilation.

Minnesota displayed leadership in residential IAQ and ventilation efficiency when it adopted the current relevant provisions in Chapters 1322 and 1349. Now, model codes and standards around the nation are catching up to Minnesota's leadership, validating the effectiveness and good sense of the current provisions.

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

If ASHRAE 62.2 is allowed as an alternative compliance path, ventilation energy use for dwelling units in Minnesota will increase and residential IAQ will decline.

Therefore, I request ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for your consideration and acceptance of my comment.

Sincerely,

Mike Daniels
VP Sales & Marketing
Auer Steel & Heating Supply Co.

Attachment: Differences between MN Rules and ASHRAE 62.2-2016, and analysis of impacts of proposed rule changes

Attachment: Differences between MN Rules and ASHRAE 62.2-2016, and analysis of impacts of proposed rule changes

MN Rules, Chapter 1322 Ventilation Requirements	**Comparable ASHRAE 62.2-2016 Provisions**	**What happens if 62.2 is allowed as an alternative compliance path in Minnesota?**
R403.5: **Balanced outdoor air ventilation** is required.	Allows for exhaust, supply, or balanced outdoor air ventilation.	A single bathroom exhaust fan to be used to provide the outdoor air requirements, depressurizing the dwelling unit. Depressurization can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
R403.5.3: Sets a **minimum continuous ventilation rate** at 40 cfm.	No minimum ventilation rate	In some dwelling units, no mechanical ventilation at all would be required.
R403.5.6.1.2: **Temper outdoor air** provided directly to habitable spaces.	No requirement to temper outdoor air	Introducing un-tempered outdoor air can be very uncomfortable conditions indoors, so occupants simply disable their ventilation system. The result is worse indoor air quality. In winter, expect too much moisture and potential for condensation and mold growth which is bad for Indoor Air Quality (IAQ) and ultimately compromise a home's structural integrity. It is easy to satisfy the requirement to temper outdoor air by specifying a Heat or Energy Recovery Ventilator (H/ERV), and this saves large amounts of energy in the cold Minnesota climate. ASHRAE 90.1 and the 2021 IECC are likely to require H/ERVs for dwelling units in climate zones 6 and 7 (see 2019 Section 6.5.6.1). Minnesota has led the nation in provisions for energy-efficient ventilation, and would vacate this leadership role just as the model codes are beginning to follow its lead.
R403.5 **Ventilation of conditioned, unfinished basements:** outdoor air, or a minimum of one supply and one return duct, must be provided.	No requirement for unfinished spaces.	For homes built on unfinished basements the ventilation rate would be reduced by up to 50% for homes on unfinished basements. Future versions 62.2 have addressed this problem, but not the 2016 version.
R403.5: **Ventilation of conditioned crawl spaces:** outdoor air, or a	No requirement for crawlspaces.	Conditioned crawl spaces would not be ventilated.

MN Rules, Chapter 1322 Ventilation Requirements	Comparable ASHRAE 62.2-2016 Provisions	What happens if 62.2 is allowed as an alternative compliance path in Minnesota?
minimum of one supply and one return duct, must be provided.		
R403.5: Preventing distribution short-circuiting: supply and return ducts are used to meet ventilation requirement for basement, must be separated by ½ the diagonal dimension of the basement.	No requirement for distribution in basements	Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, and the ventilation system does not work.
Table R403.5.1: establishes minimum **Fan efficacy** requirements.	None	Energy required to operate ventilation systems could increase significantly requirement for fan efficacy. The proposed deregulation of energy use of ventilation systems is contrary to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state, since energy efficiency is one of the most cost-effective means to achieve GHG savings.
R403.5.2: **Extra ventilation capacity**: the "total" ventilation flow rate must be twice the continuous outdoor air rate, so extra ventilation capacity is available.	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
403.5.6.1: Outdoor air must be **distributed** to each habitable space.	No distribution requirements; a single bathroom exhaust fan located in a remote corner of the home meets the standards.	Ventilation "systems" consisting of a single exhaust fan located in a remote corner of the home (such as the master bedroom) would be accepted, but could provide little to no air quality benefit in other areas of the home (e.g. children's bedrooms).
R403.5.9: In most cases **prohibits simultaneous** connection of both supply and return ventilation air ducts to a forced air circulation system.	No limitations.	Poor installation methods for integrating balanced systems with forced air circulation systems will be allowed: these ventilation systems don't provide acceptable IAQ.
R403.5.10: **Backdraft dampers** are required on supply and exhaust ventilation systems.	No requirements	Energy use will increase because backdraft dampers reduce air leakage from the building when ventilation systems are not operating.

MN Rules, Chapter 1322 Ventilation Requirements	Comparable ASHRAE 62.2-2016 Provisions	What happens if 62.2 is allowed as an alternative compliance path in Minnesota?
R403.5.14.4: Readily-accessible **Ventilation System Controls**.	Not required in all cases to be readily accessible.	If occupants can't easily control their ventilation systems, they are more likely simply to shut them off.
R403.5.6.l.3: In-situ **airflow verification** required for all airflows greater than 30 cfm (including exhaust-only and H/ERVs) and available to building official upon request.	In-situ flow verification not required for local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
R403.5.7: **Maximum intermittent ventilation noise level**: 2.5 sones.	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm.	The main reason that range hoods are not operated is because occupants believe they are "too noisy" (study by LBNL). MN's current requirement for lower sone rates than 62.2 supports operation of quiet range hoods and consequently, better indoor air quality for occupants.

Spuckler, Amanda (DLI)

From: Mike Jindra <Mike.Jindra@dsgsupply.com>
Sent: Wednesday, November 27, 2019 12:32 PM
To: Spuckler, Amanda (DLI)
Subject: ASHRAE 62.2
Attachments: CCI11272019_0001.jpg; CCI11272019_0006.jpg

Hi Amanda,
Attached is from Brian Ebert, the new construction manager at Air Mechanical
His email is briannegm@airmechanical.com

Thanks,

Mike Jindra | *Account Manager – Plumbing/HVAC*
Dakota Supply Group | **P** (952) 935-0445 , **Ext:** 2219 | **F** (952) 935-7666
845 Berkshire Lane N | Plymouth, MN 55441
M (612) 597-3344

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DATE

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely, Air Mechanical Inc.

BRIAN EBERT

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Spuckler, Amanda (DLI)

From: Mike Jindra <Mike.Jindra@dsgsupply.com>
Sent: Wednesday, November 27, 2019 12:29 PM
To: Spuckler, Amanda (DLI)
Subject: ASHRAE 62.2
Attachments: CCI11272019_0001.jpg; CCI11272019_0005.jpg

Hi Amanda,
Attached is from Lynda Brooks, purchasing manager at Air Mechanical.
Her email is
purchasing@airmechanical.com

Thanks,

Mike Jindra | *Account Manager – Plumbing/HVAC*
Dakota Supply Group | **P** (952) 935-0445 , **Ext:** 2219 | **F** (952) 935-7666
845 Berkshire Lane N | Plymouth, MN 55441
M (612) 597-3344

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DATE

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.
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Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Brody Air Mechanical

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

LYNDA BROOKS

Spuckler, Amanda (DLI)

From: Mike Jindra <Mike.Jindra@dsgsupply.com>
Sent: Wednesday, November 27, 2019 12:27 PM
To: Spuckler, Amanda (DLI)
Subject: ASHRAE 62.2
Attachments: CCI11272019_0001.jpg; CCI11272019_0004.jpg

Hi Amanda,
The attached is from Brandon Patterson, install manager at Air Mechanical
His email address is
jobsup@airmechanical.com

Thanks,

Mike Jindra | *Account Manager – Plumbing/HVAC*
Dakota Supply Group | **P** (952) 935-0445 , **Ext:** 2219 | **F** (952) 935-7666
845 Berkshire Lane N | Plymouth, MN 55441
M (612) 597-3344

dakotasupplygroup.com

DATE

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
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Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Air Mechanical Inc.

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

BRANDON PATTERSON

Spuckler, Amanda (DLI)

From: Mike Jindra <Mike.Jindra@dsgsupply.com>
Sent: Wednesday, November 27, 2019 12:22 PM
To: Spuckler, Amanda (DLI)
Subject: ASHRAE 62.2
Attachments: CCI11272019_0001.jpg; CCI11272019_0003.jpg

Hi Amanda,
This is from Ross Erickson the owner of Air Mechanical
His email is rami1@airmechanicalinc.com

Thanks,

Mike Jindra | *Account Manager – Plumbing/HVAC*
Dakota Supply Group | **P** (952) 935-0445 , **Ext:** 2219 | **F** (952) 935-7666
845 Berkshire Lane N | Plymouth, MN 55441
M (612) 597-3344

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DATE

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
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    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely, air Mechanic

ROSS ERICKSON

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Spuckler, Amanda (DLI)

From: Mike Jindra <Mike.Jindra@dsgsupply.com>
Sent: Wednesday, November 27, 2019 12:18 PM
To: Spuckler, Amanda (DLI)
Subject: ASHRAE 62.2
Attachments: CCI11272019_0002.jpg; CCI11272019_0001.jpg

Hi Amanda,
This is from Mike Nesdahl at Air Mechanical
His email address is mnesdahl@airmechanical.com
Thanks,

Mike Jindra | *Account Manager – Plumbing/HVAC*
Dakota Supply Group | **P** (952) 935-0445 , **Ext:** 2219 | **F** (952) 935-7666
845 Berkshire Lane N | Plymouth, MN 55441
M (612) 597-3344

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DATE

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

MIKE NESDAHL, AIR MECHANICAL

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Spuckler, Amanda (DLI)

From: Nicole Westfall - MEEA <nwestfall@mwalliance.org>
Sent: Tuesday, November 26, 2019 4:27 PM
To: RULES, DLI (DLI)
Subject: Comments on Proposed Rules and Request for Hearing - Chapter 1346
Attachments: MEEA comments to DLI - Chapter1346 - Nov 2019 - Final.pdf

Dear Ms. Spuckler,

Please find attached comments from the Midwest Energy Efficiency Alliance on the proposed Minnesota Mechanical Code (Chapter 1346). Thank you for the opportunity to comment and please let me know if you have any questions.

Kind regards,
Nicole

Nicole Westfall
Senior Building Policy Associate
Midwest Energy Efficiency Alliance (MEEA)
312.374.0918 | www.mwalliance.org

MEEA
MIDWEST ENERGY EFFICIENCY ALLIANCE

20 N. Wacker Drive, Suite 1301
Chicago, Illinois 60606
312.587.8390 Main Line
312.587.8391 Fax
www.mwalliance.org

11/26/2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

Thank you for the opportunity to comment on Minnesota Rules Chapter 1346. The Midwest Energy Efficiency Alliance requests a hearing on the proposed changes to Minnesota Chapter 1346, specifically in relation to the addition of ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322. MEEA strongly recommends the removal of ASHRAE 62.2 as an alternative compliance path from both Chapter 1346 and Chapter 1309 (by reference). The rationale for its removal is based on incorrect information. Additionally, introducing this alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase individual ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans.

The rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
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MEEA
MIDWEST ENERGY EFFICIENCY ALLIANCE

20 N. Wacker Drive, Suite 1301
Chicago, Illinois 60606
312.587.8390 Main Line
312.587.8391 Fax
www.mwalliance.org

3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for individual fans in dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

Minnesota Administration Rules specifies that health and ventilation must be considered as part of Minnesota's Building Code. Rule 1300.0030, Subpart 1[1] states, "The purpose of this code is to establish minimum requirements to safeguard the public **health**, safety, and general welfare through structural strength, means of egress facilities, stability, sanitation, adequate light and **ventilation**, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to firefighters and emergency responders during emergency operations."

Balanced ventilation as required by Minnesota's current mechanical code is an industry best practice to provide healthy indoor air exchange. Allowing ASHRAE 62.2 as an alternative compliance pathway could allow ventilation systems to be designed in a way that provides inadequate fresh air to occupants. Under ASHRAE 62.2, ventilation systems can be designed to be exhaust only, which studies have found to be a less effective method of whole house ventilation. Research by the Building Science Corporation found that exhaust only ventilation systems resulted in higher

[1] https://www.revisor.mn.gov/rules/pdf/1300.0030/2015-01-23%2012:36:45+00:00

MEEA
MIDWEST ENERGY EFFICIENCY ALLIANCE

20 N. Wacker Drive, Suite 1301
Chicago, Illinois 60606
312.587.8390 Main Line
312.587.8391 Fax
www.mwalliance.org

concentrations of particulates and other VOCs than balanced systems[2]. The buildup of these pollutants can have significant health implications for occupants, including increased instances of allergies and asthma.

For these reasons, we request ASHRAE 62.2 be removed as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309. Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

The Midwest Energy Efficiency Alliance

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

[2] Rudd and Bergey, Building Science Corporation, *Ventilation System Effectiveness and Tested Indoor Air Quality Impacts*, 2014, Prepared for National Renewable Energy Laboratory, https://www.nrel.gov/docs/fy14osti/61128.pdf

Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Balanced ventilation required to provide outdoor air (R403.5)	No requirement for balanced ventilation. Exhaust, supply, or balanced are permitted to provide outdoor air.	Approval of 62.2 would enable a single bathroom exhaust fan to be used to provide the outdoor air requirements for a dwelling unit. Depressurization caused by exhaust-only systems can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
Minimum continuous ventilation rate of 40 cfm (R403.5.3)	No minimum ventilation rate backstop	Approval of 62.2 could result in the ventilation rate going down to zero in some cases, meaning no mechanical ventilation is would be required for some dwelling units.
Outdoor air for conditioned, unfinished basements, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Approval of 62.2 would reduce the ventilation rate by as much as 50% for homes on unfinished basements. 62.2 recognized this as a problem and modified the requirement in future versions, but the 2016 version is still broken.
Outdoor air for conditioned crawlspaces, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Unless addressed elsewhere in MN's code, approval of 62.2 would remove any provisions to ensure that conditioned crawls meet minimum requirements.
Distribution: where a supply and return duct are used to meet ventilation requirement for basement, they	No requirement for distribution in basements	Approval of 62.2 would remove all air distribution requirements from MN's code. Distribution supports uniform air quality within a dwelling unit. Without minimum separation distances for supply and return ducts, short circuiting of

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
must be separated by ½ the diagonal dimension of the basement to avoid short circuiting (R403.5)		ventilation air can result, rendering the ventilation system ineffective.
Fan efficacy: establishes minimum requirements (Table R403.5.1)	No requirement for fan efficacy	Approval of 62.2 as an alternative to 1322 would remove the requirement for fan efficacy, meaning the energy required to operate ventilation systems could increase significantly. This deregulation of energy use of ventilation systems is in direct opposition to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state. Energy efficiency is one of the most cost-effective means to achieve GHG savings, and this rollback would compromise savings gained to date.
Total ventilation flow rate required at twice the continuous outdoor air rate to provide extra ventilation capacity as needed (R403.5.2)	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
HRVs must meet HVI Standard 920, 72 hours minus 13°F (-10°C) cold weather test or be certified by a registered professional engineer (R403.5.5)	No requirement for cold weather test	Without the cold weather test... (MANUFACTURERS TO FILL IN THE BLANK)
Distribution: requires delivery of outdoor air	No distribution requirement. ASHRAE 62.2 dwelling unit ventilation requirements may	Distribution supports uniform air quality within a dwelling unit. If ASHRAE 62.2 is approved, the requirement for distribution will be removed, and an exhaust fan located in a remote corner

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
to each habitable space (R403.5.6.1)	be met by a single bathroom exhaust fan located in a remote corner of the home.	of the home (such as the master bedroom) would be approved to provide dwelling unit ventilation. Such a configuration could provide little to no air quality benefit in other areas of the home (such as children's bedrooms).
Outdoor air provided directly to habitable spaces shall be tempered (R403.5.6.1.2)	No requirement to temper outdoor air	Introducing outdoor air without tempering it (as approved by 62.2) can result in very uncomfortable conditions indoors, prompting occupants to disable their ventilation system. Disabling ventilation systems can be expected to result in poor indoor air quality, high moisture, and increased condensation potential that can support mold growth and ultimately compromise a home's structural integrity. Further, builders/designers frequently satisfy the requirement to temper outdoor air by specifying an H/ERV. These energy-efficient systems save large amounts of energy, especially in cold climates. In fact, recent action has been taken in ASHRAE 90.1 to require H/ERVs for dwelling units in the prescriptive path for climate zones 6 and 7 (see 2019 Section 6.5.6.1). A similar requirement is expected in the 2021 IECC, based on the public comment hearing vote for approval in October 2019 (pending final on-line voting; see proposal CE133 to the IECC). Minnesota, which has led the nation in this regard, would be stepping back from its leadership role in energy-efficient ventilation just as the model codes are beginning to follow Minnesota's lead.
In-situ airflow verification required if flow greater than 30 cfm and producible to building official upon request (R403.5.6.I.3)	In-situ flow verification only required for outdoor air systems, not local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Maximum intermittent ventilation sone level: 2.5 sones R403.5.7)	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm. No requirement for remotely mounted fans.	Studies by Lawrence Berkeley National Lab have shown that a primary reason that range hoods are not operated is because occupants believe they are "too noisy". MN's current requirement for lower sone rates than 62.2 supports operation of range hoods and consequently, better indoor air quality for occupants.
Prohibits simultaneously connecting both supply and return ventilation air ducts to a forced air circulation system, with exception (R403.5.9)	No limitations to ducting supply and return ventilation air ducts to a forced air circulation system	ASHRAE 62.2 permits poor installation practices when integrating balanced systems with forced air circulation systems – which can render ventilation systems completely ineffective in providing acceptable IAQ.
Backdraft dampers are required on supply and exhaust ventilation systems (R403.5.10)	No dampers required on individually ducted supply or exhaust ventilation system	Backdraft dampers help reduce air leakage from the building when ventilation systems are not operating – thereby saving energy. Removing this requirement from MN's code is expected to increase energy use and promote over-ventilation.
Installation of ventilation system components shall minimize transmission of noise and vibration (R403.5.13)	No requirements for installation to minimize noise and vibration	Approval of 62.2 would remove MN's current requirements that promote quality installation.
Controls are required to be readily accessible (R403.5.14.4)	Controls are not required to be readily accessible in all cases.	Approval of 62.2 would limit accessibility of controls and occupants' ability to use them effectively in some cases.

Spuckler, Amanda (DLI)

From: William Dean <will.dean@core.life>
Sent: Tuesday, November 26, 2019 4:24 PM
To: RULES, DLI (DLI)
Subject: Hearing Request - Chapter 1346
Attachments: HVI - Hearing Request.pdf

Hi Amanda,

I'm reaching out to request a formal hearing with regards to the proposed changes to Minnesota Rules Chapter 1346. Please see the attached letter.

Thank you,

Will Dean
Sales Manager, West Coast
o +1-250-634-3247
e will.dean@core.life

core.life
formerly
dpoint technologies

2019-11-26

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I'm reaching out on behalf of CORE Energy Recovery Solutions, a manufacturer of energy recovery equipment. CORE is a member of the Home Ventilating Institute (HVI), an international nonprofit association of the manufacturers of home ventilating products. HVI's core purpose is "To Make Indoor Air Healthier." Through its Certified Ratings Programs, HVI provides a voluntary means for residential ventilation manufacturers to report comparable and creditable product performance information based upon uniformly applied testing standards and procedures performed by independent laboratories. Certified performance ratings include airflow, sound and energy.

CORE would like to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries within the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Newport Partners LLC www.newportpartnersllc.com has developed the attached Appendix A which provides a direct comparison of the ventilation requirements in ASHRAE 62.2 and in Minnesota Rules Chapter 1346. Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.

3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

William Dean*William Dean*

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Balanced ventilation required to provide outdoor air (R403.5)	No requirement for balanced ventilation. Exhaust, supply, or balanced are permitted to provide outdoor air.	Approval of 62.2 would enable a single bathroom exhaust fan to be used to provide the outdoor air requirements for a dwelling unit. Depressurization caused by exhaust-only systems can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
Minimum continuous ventilation rate of 40 cfm (R403.5.3)	No minimum ventilation rate backstop	Approval of 62.2 could result in the ventilation rate going down to zero in some cases, meaning no mechanical ventilation is would be required for some dwelling units.
Outdoor air for conditioned, unfinished basements, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Approval of 62.2 would reduce the ventilation rate by as much as 50% for homes on unfinished basements. 62.2 recognized this as a problem and modified the requirement in future versions, but the 2016 version is still broken.
Outdoor air for conditioned crawlspaces, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Unless addressed elsewhere in MN's code, approval of 62.2 would remove any provisions to ensure that conditioned crawls meet minimum requirements.
Distribution: where a supply and return duct are used to meet ventilation requirement for basement, they must be separated by ½ the diagonal dimension of the basement to avoid short circuiting (R403.5)	No requirement for distribution in basements	Approval of 62.2 would remove all air distribution requirements from MN's code. Distribution supports uniform air quality within a dwelling unit. Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, rendering the ventilation system ineffective.
Fan efficacy: establishes minimum	No requirement for fan efficacy	Approval of 62.2 as an alternative to 1322 would remove the requirement for fan

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
requirements (Table R403.5.1)		efficacy, meaning the energy required to operate ventilation systems could increase significantly. This deregulation of energy use of ventilation systems is in direct opposition to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state. Energy efficiency is one of the most cost-effective means to achieve GHG savings, and this rollback would compromise savings gained to date.
Total ventilation flow rate required at twice the continuous outdoor air rate to provide extra ventilation capacity as needed (R403.5.2)	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
HRVs must meet HVI Standard 920, 72 hours minus 13°F (-l0°C) cold weather test or be certified by a registered professional engineer (R403.5.5)	No requirement for cold weather test	Without the cold weather test... (MANUFACTURERS TO FILL IN THE BLANK)
Distribution: requires delivery of outdoor air to each habitable space (R403.5.6.1)	No distribution requirement. ASHRAE 62.2 dwelling unit ventilation requirements may be met by a single bathroom exhaust fan located in a remote corner of the home.	Distribution supports uniform air quality within a dwelling unit. If ASHRAE 62.2 is approved, the requirement for distribution will be removed, and an exhaust fan located in a remote corner of the home (such as the master bedroom) would be approved to provide dwelling unit ventilation. Such a configuration could provide little to no air quality benefit in other areas of the home (such as children's bedrooms).
Outdoor air provided directly to habitable spaces shall be tempered (R403.5.6.1.2)	No requirement to temper outdoor air	Introducing outdoor air without tempering it (as approved by 62.2) can result in very uncomfortable conditions indoors, prompting occupants to disable their ventilation system. Disabling ventilation systems can be expected to result in poor indoor air quality, high moisture, and increased condensation potential that can support mold growth and

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		ultimately compromise a home's structural integrity. Further, builders/designers frequently satisfy the requirement to temper outdoor air by specifying an H/ERV. These energy-efficient systems save large amounts of energy, especially in cold climates. In fact, recent action has been taken in ASHRAE 90.1 to require H/ERVs for dwelling units in the prescriptive path for climate zones 6 and 7 (see 2019 Section 6.5.6.1). A similar requirement is expected in the 2021 IECC, based on the public comment hearing vote for approval in October 2019 (pending final on-line voting; see proposal CE133 to the IECC). Minnesota, which has led the nation in this regard, would be stepping back from its leadership role in energy-efficient ventilation just as the model codes are beginning to follow Minnesota's lead.
In-situ airflow verification required if flow greater than 30 cfm and producible to building official upon request (R403.5.6.I.3)	In-situ flow verification only required for outdoor air systems, not local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
Maximum intermittent ventilation sone level: 2.5 sones R403.5.7)	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm. No requirement for remotely mounted fans.	Studies by Lawrence Berkeley National Lab have shown that a primary reason that range hoods are not operated is because occupants believe they are "too noisy". MN's current requirement for lower sone rates than 62.2 supports operation of range hoods and consequently, better indoor air quality for occupants.
Prohibits simultaneously connecting both supply and return ventilation air ducts to a forced air circulation system, with exception (R403.5.9)	No limitations to ducting supply and return ventilation air ducts to a forced air circulation system	ASHRAE 62.2 permits poor installation practices when integrating balanced systems with forced air circulation systems – which can render ventilation systems completely ineffective in providing acceptable IAQ.

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Backdraft dampers are required on supply and exhaust ventilation systems (R403.5.10)	No dampers required on individually ducted supply or exhaust ventilation system	Backdraft dampers help reduce air leakage from the building when ventilation systems are not operating – thereby saving energy. Removing this requirement from MN's code is expected to increase energy use and promote over-ventilation.
Installation of ventilation system components shall minimize transmission of noise and vibration (R403.5.13)	No requirements for installation to minimize noise and vibration	Approval of 62.2 would remove MN's current requirements that promote quality installation.
Controls are required to be readily accessible (R403.5.14.4)	Controls are not required to be readily accessible in all cases.	Approval of 62.2 would limit accessibility of controls and occupants' ability to use them effectively in some cases.

Spuckler, Amanda (DLI)

From: Bob Eddy <reddy@epsalesinc.com>
Sent: Tuesday, November 26, 2019 5:28 PM
To: Spuckler, Amanda (DLI)
Subject: DOLI Chapter 1346
Attachments: EP Sales.DOLI.Chapter 1346.pdf

Amanda, please see attached. Thank you for your help.

Respectfully,

Robert Eddy / President
EP Sales, Inc.
Office: 952-854-4400
Direct: 952-698-4032
Mobile: 612-325-4338
Fax: 952-854-4441
www.epsalesinc.com

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

November 26, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155
amanda.spuckler@state.mn.us

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

EP Sales, Inc. requests a hearing on the proposed changes to Minnesota Rules Chapter 1346 (part of R-04515). Additionally, we request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference).

Furthermore, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.

3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version (2019) incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Robert Eddy
President

David Ponschok
Principal

Jason Salter
Principal

Kevin Genereux
Principal

EP Sales,Inc.
7878 12th Ave. S.
Bloomington, MN 55425
952-854-4400

Spuckler, Amanda (DLI)

From: Jenny Tveiten <jenny@sthilairesupply.com>
Sent: Tuesday, November 26, 2019 2:51 PM
To: Spuckler, Amanda (DLI)
Subject: St. Hilaire Supply Co.
Attachments: 20191126145050.pdf

See attachment...

St. Hilaire Supply Co.
211 Broadway
St. Hilaire, MN 56754
Toll Free 1-800-542-5010
Fax 218-964-5242
info@sthilairesupply.com

St. Hilaire Supply Co.
Est. 1959
Plumbing • HVAC • Well • Septic • Tank Manufacturing
1-800-542-5010
211 Broadway • St. Hilaire, MN 56754

November 26, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155
amanda.spuckler@state.mn.us

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

St. Hilaire Supply Inc. requests a hearing on the proposed changes to Minnesota Rules Chapter 1346 (part of R-04515). Additionally, we request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference).

Furthermore, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
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3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version (2019) incorporating several substantive changes.

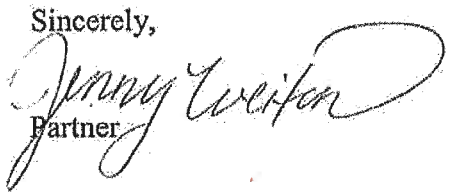
Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,



Partner

Spuckler, Amanda (DLI)

From: Loic Ares <AresL@venmar.ca>
Sent: Tuesday, November 26, 2019 3:32 PM
To: RULES, DLI (DLI)
Cc: Spuckler, Amanda (DLI)
Subject: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346
Attachments: Rulemaking docket for minnesota rules chapter 1346.pdf

We hereby reach out to request a hearing on the proposed changes to Minnesota Rules Chapter 1346.

Please consider our comments to the RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346 in the attached letter.

Regards,

Loïc Arès ing. / P. Eng. | *Aviseur Technique - QAI / Technical Advisor - IAQ*
Venmar Ventilation ULC | 550 boulevard Lemire, Drummondville (Québec), Canada J2C 7W9
819.477.6226, poste/ext. 2681 bureau/office | 819.475.9541 télécopieur/fax

Venmar Ventilation ULC
550, Lemire Blvd.
Drummondville (Québec), Canada
J2C 7W9
819.477.6226 main
819.475.2660 fax

Via email to: amanda.spuckler@state.mn.us

November 26, 2019
Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155
Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.

3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Daniel Forest | V-P Technology & Product Development

Patrick Beloin | Group Product Manager – Fresh Air Systems

Mathieu Lalancette-Jutras | R&D Manager - Fresh Air Systems

Loïc Arès | Technical Advisor - IAQ

Melina Rouleau | Associate Marketing Manager – Fresh Air Systems

Stéphane Michaud | Design Engineer – Fresh Air Systems

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Balanced ventilation required to provide outdoor air (R403.5)	No requirement for balanced ventilation. Exhaust, supply, or balanced are permitted to provide outdoor air.	Approval of 62.2 would enable a single bathroom exhaust fan to be used to provide the outdoor air requirements for a dwelling unit. Depressurization caused by exhaust-only systems can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
Minimum continuous ventilation rate of 40 cfm (R403.5.3)	No minimum ventilation rate backstop	Approval of 62.2 could result in the ventilation rate going down to zero in some cases, meaning no mechanical ventilation is would be required for some dwelling units.
Outdoor air for conditioned, unfinished basements, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Approval of 62.2 would reduce the ventilation rate by as much as 50% for homes on unfinished basements. 62.2 recognized this as a problem and modified the requirement in future versions, but the 2016 version is still broken.
Outdoor air for conditioned crawlspaces, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Unless addressed elsewhere in MN's code, approval of 62.2 would remove any provisions to ensure that conditioned crawls meet minimum requirements.
Distribution: where a supply and return duct are used to meet ventilation requirement for basement, they must be separated by ½ the diagonal dimension of the basement to avoid short circuiting (R403.5)	No requirement for distribution in basements	Approval of 62.2 would remove all air distribution requirements from MN's code. Distribution supports uniform air quality within a dwelling unit. Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, rendering the ventilation system ineffective.
Fan efficacy: establishes minimum requirements (Table R403.5.1)	No requirement for fan efficacy	Approval of 62.2 as an alternative to 1322 would remove the requirement for fan efficacy, meaning the energy required to operate ventilation systems could increase significantly. This deregulation of energy use of ventilation systems is in direct opposition to Minnesota

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state. Energy efficiency is one of the most cost-effective means to achieve GHG savings, and this rollback would compromise savings gained to date.
Total ventilation flow rate required at twice the continuous outdoor air rate to provide extra ventilation capacity as needed (R403.5.2)	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
HRVs must meet HVI Standard 920, 72 hours minus 13°F (-l0°C) cold weather test or be certified by a registered professional engineer (R403.5.5)	No requirement for cold weather test	Without the cold weather test... (MANUFACTURERS TO FILL IN THE BLANK)
Distribution: requires delivery of outdoor air to each habitable space (R403.5.6.1)	No distribution requirement. ASHRAE 62.2 dwelling unit ventilation requirements may be met by a single bathroom exhaust fan located in a remote corner of the home.	Distribution supports uniform air quality within a dwelling unit. If ASHRAE 62.2 is approved, the requirement for distribution will be removed, and an exhaust fan located in a remote corner of the home (such as the master bedroom) would be approved to provide dwelling unit ventilation. Such a configuration could provide little to no air quality benefit in other areas of the home (such as children's bedrooms).
Outdoor air provided directly to habitable spaces shall be tempered (R403.5.6.1.2)	No requirement to temper outdoor air	Introducing outdoor air without tempering it (as approved by 62.2) can result in very uncomfortable conditions indoors, prompting occupants to disable their ventilation system. Disabling ventilation systems can be expected to result in poor indoor air quality, high moisture, and increased condensation potential that can support mold growth and ultimately compromise a home's structural integrity. Further, builders/designers frequently satisfy the requirement to temper outdoor air by specifying an H/ERV. These

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		energy-efficient systems save large amounts of energy, especially in cold climates. In fact, recent action has been taken in ASHRAE 90.1 to require H/ERVs for dwelling units in the prescriptive path for climate zones 6 and 7 (see 2019 Section 6.5.6.1). A similar requirement is expected in the 2021 IECC, based on the public comment hearing vote for approval in October 2019 (pending final on-line voting; see proposal CE133 to the IECC). Minnesota, which has led the nation in this regard, would be stepping back from its leadership role in energy-efficient ventilation just as the model codes are beginning to follow Minnesota's lead.
In-situ airflow verification required if flow greater than 30 cfm and producible to building official upon request (R403.5.6.l.3)	In-situ flow verification only required for outdoor air systems, not local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
Maximum intermittent ventilation sone level: 2.5 sones R403.5.7)	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm. No requirement for remotely mounted fans.	Studies by Lawrence Berkeley National Lab have shown that a primary reason that range hoods are not operated is because occupants believe they are "too noisy". MN's current requirement for lower sone rates than 62.2 supports operation of range hoods and consequently, better indoor air quality for occupants.
Prohibits simultaneously connecting both supply and return ventilation air ducts to a forced air circulation system, with exception (R403.5.9)	No limitations to ducting supply and return ventilation air ducts to a forced air circulation system	ASHRAE 62.2 permits poor installation practices when integrating balanced systems with forced air circulation systems – which can render ventilation systems completely ineffective in providing acceptable IAQ.
Backdraft dampers are required on supply and exhaust ventilation systems (R403.5.10)	No dampers required on individually ducted supply or exhaust ventilation system	Backdraft dampers help reduce air leakage from the building when ventilation systems are not operating – thereby saving energy. Removing this requirement from MN's code is expected to increase energy use and promote over-ventilation.

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Installation of ventilation system components shall minimize transmission of noise and vibration (R403.5.13)	No requirements for installation to minimize noise and vibration	Approval of 62.2 would remove MN's current requirements that promote quality installation.
Controls are required to be readily accessible (R403.5.14.4)	Controls are not required to be readily accessible in all cases.	Approval of 62.2 would limit accessibility of controls and occupants' ability to use them effectively in some cases.

Spuckler, Amanda (DLI)

From: Bender Christopher <Christopher.Bender@aldes.com>
Sent: Tuesday, November 26, 2019 2:33 PM
To: RULES, DLI (DLI)
Subject: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346
Attachments: MN DOLI - Chapter1346 Comment Aldes Signed.pdf

Dear Mrs. Spuckler :

Please find attached a letter in support of a request for a hearing regarding the proposed changes to the Minnesota building code as it pertains to ventilation.

Best Regards,
Christopher Bender

Christopher Bender
Aldes North America
Marketing Director
Mobile: 514.883.5690
christopher.bender@aldes.com
www.aldes.ca

Christopher Bender
Aldes
100 Carter Street
St.-Leonard-d'Aston, Quebec
Canada J0C 1M0

26-Nov-2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

The Home Ventilating Institute (HVI), founded in 1955, is an international nonprofit association of the manufacturers of home ventilating products. HVI's core purpose is "To Make Indoor Air Healthier." Through its Certified Ratings Programs, HVI provides a voluntary means for residential ventilation manufacturers to report comparable and creditable product performance information based upon uniformly applied testing standards and procedures performed by independent laboratories. Certified performance ratings include airflow, sound and energy.

Today, HVI represents manufacturers from the United States, Canada, Asia and Europe, producing the majority of the residential ventilation products sold in North America. HVI certification is a prerequisite for obtaining the ENERGY STAR® rating for mechanical ventilation equipment.

We hereby reach out to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries within the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Newport Partners LLC www.newportpartnersllc.com has developed the attached Appendix A which provides a direct comparison of the ventilation requirements in ASHRAE 62.2 and in Minnesota Rules Chapter 1346. Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.

b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.

3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Christopher Border, Director Marketing

Adam Fecteau, Engineering Manager

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

ETIENNE, GENDREAU, GENERAL MANAGER

Glenn Thompson, Residential Business Development Manger

Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
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Minimum continuous ventilation rate of 40 cfm (R403.5.3)	No minimum ventilation rate backstop	Approval of 62.2 could result in the ventilation rate going down to zero in some cases, meaning no mechanical ventilation is would be required for some dwelling units.
Outdoor air for conditioned, unfinished basements, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Approval of 62.2 would reduce the ventilation rate by as much as 50% for homes on unfinished basements. 62.2 recognized this as a problem and modified the requirement in future versions, but the 2016 version is still broken.
Outdoor air for conditioned crawlspaces, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Unless addressed elsewhere in MN's code, approval of 62.2 would remove any provisions to ensure that conditioned crawls meet minimum requirements.
Distribution: where a supply and return duct are used to meet ventilation requirement for basement, they must be separated by ½ the diagonal dimension of the basement to avoid short circuiting (R403.5)	No requirement for distribution in basements	Approval of 62.2 would remove all air distribution requirements from MN's code. Distribution supports uniform air quality within a dwelling unit. Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, rendering the ventilation system ineffective.
Fan efficacy: establishes minimum requirements (Table R403.5.1)	No requirement for fan efficacy	Approval of 62.2 as an alternative to 1322 would remove the requirement for fan efficacy, meaning the energy required to operate ventilation systems could increase significantly. This deregulation of

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		energy use of ventilation systems is in direct opposition to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state. Energy efficiency is one of the most cost-effective means to achieve GHG savings, and this rollback would compromise savings gained to date.
Total ventilation flow rate required at twice the continuous outdoor air rate to provide extra ventilation capacity as needed (R403.5.2)	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
HRVs must meet HVI Standard 920, 72 hours minus 13°F (-l0°C) cold weather test or be certified by a registered professional engineer (R403.5.5)	No requirement for cold weather test	Without the cold weather test... (MANUFACTURERS TO FILL IN THE BLANK)
Distribution: requires delivery of outdoor air to each habitable space (R403.5.6.1)	No distribution requirement. ASHRAE 62.2 dwelling unit ventilation requirements may be met by a single bathroom exhaust fan located in a remote corner of the home.	Distribution supports uniform air quality within a dwelling unit. If ASHRAE 62.2 is approved, the requirement for distribution will be removed, and an exhaust fan located in a remote corner of the home (such as the master bedroom) would be approved to provide dwelling unit ventilation. Such a configuration could provide little to no air quality benefit in other areas of the home (such as children's bedrooms).
Outdoor air provided directly to habitable spaces shall be tempered (R403.5.6.1.2)	No requirement to temper outdoor air	Introducing outdoor air without tempering it (as approved by 62.2) can result in very uncomfortable conditions indoors, prompting occupants to disable their ventilation system. Disabling ventilation systems can be expected to result in poor indoor air quality, high moisture, and increased condensation potential that can support mold growth and ultimately compromise a home's structural integrity. Further, builders/designers frequently satisfy the

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		requirement to temper outdoor air by specifying an H/ERV. These energy-efficient systems save large amounts of energy, especially in cold climates. In fact, recent action has been taken in ASHRAE 90.1 to require H/ERVs for dwelling units in the prescriptive path for climate zones 6 and 7 (see 2019 Section 6.5.6.1). A similar requirement is expected in the 2021 IECC, based on the public comment hearing vote for approval in October 2019 (pending final on-line voting; see proposal CE133 to the IECC). Minnesota, which has led the nation in this regard, would be stepping back from its leadership role in energy-efficient ventilation just as the model codes are beginning to follow Minnesota's lead.
In-situ airflow verification required if flow greater than 30 cfm and producible to building official upon request (R403.5.6.I.3)	In-situ flow verification only required for outdoor air systems, not local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
Maximum intermittent ventilation sone level: 2.5 sones R403.5.7)	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm. No requirement for remotely mounted fans.	Studies by Lawrence Berkeley National Lab have shown that a primary reason that range hoods are not operated is because occupants believe they are "too noisy". MN's current requirement for lower sone rates than 62.2 supports operation of range hoods and consequently, better indoor air quality for occupants.
Prohibits simultaneously connecting both supply and return ventilation air ducts to a forced air circulation system, with exception (R403.5.9)	No limitations to ducting supply and return ventilation air ducts to a forced air circulation system	ASHRAE 62.2 permits poor installation practices when integrating balanced systems with forced air circulation systems – which can render ventilation systems completely ineffective in providing acceptable IAQ.
Backdraft dampers are required on supply and exhaust ventilation systems (R403.5.10)	No dampers required on individually ducted supply or exhaust ventilation system	Backdraft dampers help reduce air leakage from the building when ventilation systems are not operating – thereby saving energy. Removing this requirement from MN's code is expected to increase energy use and promote over-ventilation.

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Installation of ventilation system components shall minimize transmission of noise and vibration (R403.5.13)	No requirements for installation to minimize noise and vibration	Approval of 62.2 would remove MN's current requirements that promote quality installation.
Controls are required to be readily accessible (R403.5.14.4)	Controls are not required to be readily accessible in all cases.	Approval of 62.2 would limit accessibility of controls and occupants' ability to use them effectively in some cases.

Spuckler, Amanda (DLI)

From: Joe Lstiburek <joe@buildingscience.com>
Sent: Tuesday, November 26, 2019 1:04 PM
To: RULES, DLI (DLI)
Cc: mmoore@newportventures.net
Subject: Rule making docket for Minnesota Rules Chapter 1346
Attachments: MN Code Hearing Request.pdf

Dear Ms. Spuckler,

Please see attached letter.

Respectfully,
Joseph Lstiburek, Ph.D., P.Eng.

Building Science Corporation

November 26, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference).

Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309. Compliance with Chapter 1322 should be required for all dwelling units in Minnesota.

Yours truly,

Joseph Lstiburek, Ph.D., P.Eng.
Principal, Building Science Corporation

70 Main Street | Westford, MA 01886 | Phone 978.589.5100 | Fax 978.589.5103 | www.buildingscience.com

Spuckler, Amanda (DLI)

From: Mike Jindra <Mike.Jindra@dsgsupply.com>
Sent: Tuesday, November 26, 2019 2:20 PM
To: Spuckler, Amanda (DLI)
Subject: ASHRAE 62.2
Attachments: SKM_C36819112614240.pdf

Hi Amanda,
This one is hard to read, but it's from Peter Bonfe
Bonfe's Plumbing, Heating and AC. His email is peter@bonfe.com

Thanks,

Mike Jindra | *Account Manager – Plumbing/HVAC*
Dakota Supply Group | **P** (952) 935-0445 , **Ext:** 2219 | **F** (952) 935-7666
845 Berkshire Lane N | Plymouth, MN 55441
M (612) 597-3344

dakotasupplygroup.com

From: st.pcopier@dsginc.biz <st.pcopier@dsginc.biz>
Sent: Tuesday, November 26, 2019 2:25 PM
To: mjindra@dsginc.biz
Subject: Message from KM_C368

DATE

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Bank PHAK. Inc.

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Spuckler, Amanda (DLI)

From: Mike Jindra <Mike.Jindra@dsgsupply.com>
Sent: Tuesday, November 26, 2019 1:22 PM
To: Spuckler, Amanda (DLI)
Subject: ASHRAE 62.2 letter from Jason Massmann owner of Massmann Geothermal and Mechanical.
Attachments: MN DOLI Massmann Geothermal.pdf

Hi Amanda,
Here is another one. This one is from Jason Massmann (Massmann Geothermal and Mechanical)
His email address is jason@massmanngeothermal.com

Thanks for your attention on this,

Mike Jindra | *Account Manager – Plumbing/HVAC*
Dakota Supply Group | **P** (952) 935-0445 , **Ext:** 2219 | **F** (952) 935-7666
845 Berkshire Lane N | Plymouth, MN 55441
M (612) 597-3344

dakotasupplygroup.com

DATE 11/26/2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Jason Massmann

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Balanced ventilation required to provide outdoor air (R403.5)	No requirement for balanced ventilation. Exhaust, supply, or balanced are permitted to provide outdoor air.	Approval of 62.2 would enable a single bathroom exhaust fan to be used to provide the outdoor air requirements for a dwelling unit. Depressurization caused by exhaust-only systems can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
Minimum continuous ventilation rate of 40 cfm (R403.5.3)	No minimum ventilation rate backstop	Approval of 62.2 could result in the ventilation rate going down to zero in some cases, meaning no mechanical ventilation is would be required for some dwelling units.
Outdoor air for conditioned, unfinished basements, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Approval of 62.2 would reduce the ventilation rate by as much as 50% for homes on unfinished basements. 62.2 recognized this as a problem and modified the requirement in future versions, but the 2016 version is still broken.
Outdoor air for conditioned crawlspaces, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Unless addressed elsewhere in MN's code, approval of 62.2 would remove any provisions to ensure that conditioned crawls meet minimum requirements.
Distribution: where a supply and return duct are used to meet ventilation requirement for basement, they must be separated by ½ the diagonal dimension of the basement to avoid short circuiting (R403.5)	No requirement for distribution in basements	Approval of 62.2 would remove all air distribution requirements from MN's code. Distribution supports uniform air quality within a dwelling unit. Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, rendering the ventilation system ineffective.
Fan efficacy: establishes minimum requirements (Table R403.5.1)	No requirement for fan efficacy	Approval of 62.2 as an alternative to 1322 would remove the requirement for fan efficacy, meaning the energy required to operate ventilation systems could increase significantly. This deregulation of

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		energy use of ventilation systems is in direct opposition to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state. Energy efficiency is one of the most cost-effective means to achieve GHG savings, and this rollback would compromise savings gained to date.
Total ventilation flow rate required at twice the continuous outdoor air rate to provide extra ventilation capacity as needed (R403.5.2)	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
HRVs must meet HVI Standard 920, 72 hours minus 13°F (-l0°C) cold weather test or be certified by a registered professional engineer (R403.5.5)	No requirement for cold weather test	Without the cold weather test... (MANUFACTURERS TO FILL IN THE BLANK)
Distribution: requires delivery of outdoor air to each habitable space (R403.5.6.1)	No distribution requirement. ASHRAE 62.2 dwelling unit ventilation requirements may be met by a single bathroom exhaust fan located in a remote corner of the home.	Distribution supports uniform air quality within a dwelling unit. If ASHRAE 62.2 is approved, the requirement for distribution will be removed, and an exhaust fan located in a remote corner of the home (such as the master bedroom) would be approved to provide dwelling unit ventilation. Such a configuration could provide little to no air quality benefit in other areas of the home (such as children's bedrooms).
Outdoor air provided directly to habitable spaces shall be tempered (R403.5.6.1.2)	No requirement to temper outdoor air	Introducing outdoor air without tempering it (as approved by 62.2) can result in very uncomfortable conditions indoors, prompting occupants to disable their ventilation system. Disabling ventilation systems can be expected to result in poor indoor air quality, high moisture, and increased condensation potential that can support mold growth and ultimately compromise a home's structural integrity. Further, builders/designers frequently satisfy the

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		requirement to temper outdoor air by specifying an H/ERV. These energy-efficient systems save large amounts of energy, especially in cold climates. In fact, recent action has been taken in ASHRAE 90.1 to require H/ERVs for dwelling units in the prescriptive path for climate zones 6 and 7 (see 2019 Section 6.5.6.1). A similar requirement is expected in the 2021 IECC, based on the public comment hearing vote for approval in October 2019 (pending final on-line voting; see proposal CE133 to the IECC). Minnesota, which has led the nation in this regard, would be stepping back from its leadership role in energy-efficient ventilation just as the model codes are beginning to follow Minnesota's lead.
In-situ airflow verification required if flow greater than 30 cfm and producible to building official upon request (R403.5.6.l.3)	In-situ flow verification only required for outdoor air systems, not local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
Maximum intermittent ventilation sone level: 2.5 sones R403.5.7)	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm. No requirement for remotely mounted fans.	Studies by Lawrence Berkeley National Lab have shown that a primary reason that range hoods are not operated is because occupants believe they are "too noisy". MN's current requirement for lower sone rates than 62.2 supports operation of range hoods and consequently, better indoor air quality for occupants.
Prohibits simultaneously connecting both supply and return ventilation air ducts to a forced air circulation system, with exception (R403.5.9)	No limitations to ducting supply and return ventilation air ducts to a forced air circulation system	ASHRAE 62.2 permits poor installation practices when integrating balanced systems with forced air circulation systems – which can render ventilation systems completely ineffective in providing acceptable IAQ.
Backdraft dampers are required on supply and exhaust ventilation systems (R403.5.10)	No dampers required on individually ducted supply or exhaust ventilation system	Backdraft dampers help reduce air leakage from the building when ventilation systems are not operating – thereby saving energy. Removing this requirement from MN's code is expected to increase energy use and promote over-ventilation.

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Installation of ventilation system components shall minimize transmission of noise and vibration (R403.5.13)	No requirements for installation to minimize noise and vibration	Approval of 62.2 would remove MN's current requirements that promote quality installation.
Controls are required to be readily accessible (R403.5.14.4)	Controls are not required to be readily accessible in all cases.	Approval of 62.2 would limit accessibility of controls and occupants' ability to use them effectively in some cases.

Spuckler, Amanda (DLI)

From: Jake Ryan <Jaker@silvertreepandh.com>
Sent: Tuesday, November 26, 2019 12:43 PM
To: RULES, DLI (DLI)
Subject: Energy code changes
Attachments: MN DOLI - Chapter1346 Comment Template B.pdf

THANKS,
JAKE RYAN
SALES AND ESTIMATING

CHECK OUT OUR WEBSITE!!! WWW.SILVERTREEPH.COM
LIKE US ON FACEBOOK! WWW.FACEBOOK.COM/SILVERTREEPLUMBINGANDHEATINGLLC

SILVER TREE
PLUMBING AND
HEATING LLC.

1335 MENDOTA HEIGHTS ROAD
MENDOTA HEIGHTS, MN 55120
651.319.4200 OFFICE
651.900.7053 DIRECT
612.270.3195 CELL
FAX 952.303.8033

SILVER TREE
PLUMBING AND HEATING LLC.

November 26, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: PROPOSAL TO ADD ASHRAE 62.2-2016 TO MINNESOTA RULES CHAPTER 1346 AS A VENTILATION COMPLIANCE OPTION.

Dear Ms. Spuckler:

I would like to request a hearing on the proposed changes to Minnesota Rules Chapter 1346.

I would like the opportunity to request that ASHRAE 62.2 not be added as a ventilation option to Minnesota Rules Chapter 1322 from both Chapter 1346

The ventilation provisions of Minnesota's code have been working very well. They lead to better houses being built, with improved IAQ and lower energy cost. The proposal is a step backward.

The Statement of Need and Reasonableness asserts that the ventilation requirements of 62.2-2016 are the same as in our Minnesota code. But that's not the case. Minnesota's rules are much better and contractors in Minnesota have learned that following these rules result in better ventilation systems that really improve IAQ and save energy. If ASHRAE 62.2 is allowed in our code, people will have to make a special point of asking for ventilations systems that are as good and easy-to-use as we already are installing.

In conclusion, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Jacob Ryan
HVAC Manager
Silver Tree Plumbing & Heating, LLC
1335 Mendota Heights Rd.
Mendota Heights, MN 55120

Spuckler, Amanda (DLI)

From: Andrew Johnson <andrew@rhisupply.com>
Sent: Tuesday, November 26, 2019 12:54 PM
To: Spuckler, Amanda (DLI)
Subject: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346
Attachments: SRHI Fargo19112612490.pdf

Please see attached

Thanks,

Andrew Johnson
RH Supply
Baxter, MN
218-828-7016

Fargo	246 19th St N	701-282-7070
Bismarck	1222 S. 22nd St	701-224-1515
Minot	925 Burdick Expy W.	701-838-8702
Baxter	8217 Industrial Park Rd	218-829-7846
Grand Forks	2525 Demers Ave	Coming Soon!!

November 26, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155
amanda.spuckler@state.mn.us

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

RHI Supply Inc. requests a hearing on the proposed changes to Minnesota Rules Chapter 1346 (part of R-04515). Additionally, we request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference).

Furthermore, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that

is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version (2019) incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Andrew Johnson
RHI Supply Inc.
Baxter, MN

Spuckler, Amanda (DLI)

From: Mike Jindra <Mike.Jindra@dsgsupply.com>
Sent: Tuesday, November 26, 2019 12:53 PM
To: Spuckler, Amanda (DLI)
Subject: ASHRAE 62.2
Attachments: SKM_C36819112612151.pdf

Hi Amanda,

This signed letter is from Jeff at Riccar Heating, if you would like to send him a confirmation that this was received, his email is
jeff@riccarhvac.com

Mike Jindra | *Account Manager – Plumbing/HVAC*
Dakota Supply Group | **P** (952) 935-0445 , **Ext:** 2219 | **F** (952) 935-7666
845 Berkshire Lane N | Plymouth, MN 55441
M (612) 597-3344

dakotasupplygroup.com

From: st.pcopier@dsginc.biz <st.pcopier@dsginc.biz>
Sent: Tuesday, November 26, 2019 12:16 PM
To: mjindra@dsginc.biz
Subject: Message from KM_C368

DATE 11/26/19

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

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4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

RICCAR HEATING & AIR CONDITIONING

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Spuckler, Amanda (DLI)

From: Mike Jindra <MikeJindra@dsgsupply.com>
Sent: Tuesday, November 26, 2019 1:18 PM
To: Spuckler, Amanda (DLI)
Cc: jeff@riccarhvac.com
Subject: Re: ASHRAE 62.2

His name is Jeff Arent from Riccar Heating

Thanks Amanda,
Let me know if you have any other issues

Mike Jindra

Get Outlook for iOS

From: Spuckler, Amanda (DLI) <amanda.spuckler@state.mn.us>
Sent: Tuesday, November 26, 2019 1:01:03 PM
To: Mike Jindra <Mike.Jindra@dsgsupply.com>
Cc: jeff@riccarhvac.com <jeff@riccarhvac.com>
Subject: RE: ASHRAE 62.2

Dear Mr. Jindra,

I have received the request for hearing. Can you please send me his first and last name? I am having difficulty figuring out his last name from the signature and need it for the rulemaking docket.

Thank you.

Amanda Spuckler
Rules Specialist and Outreach | Education, Rules and Code Development

Minnesota Department of Labor and Industry
443 Lafayette Road N., St. Paul, MN 55155
Phone: (651) 284-5361 | Web: www.dli.mn.gov

From: Mike Jindra <Mike.Jindra@dsgsupply.com>
Sent: Tuesday, November 26, 2019 12:53 PM
To: Spuckler, Amanda (DLI) <amanda.spuckler@state.mn.us>
Subject: ASHRAE 62.2

Hi Amanda,

This signed letter is from Jeff at Riccar Heating, if you would like to send him a confirmation that this was received, his email is
jeff@riccarhvac.com

Mike Jindra | *Account Manager – Plumbing/HVAC*
Dakota Supply Group | **P** (952) 935-0445 , **Ext:** 2219 | **F** (952) 935-7666
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M (612) 597-3344

dakotasupplygroup.com

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Sent: Tuesday, November 26, 2019 12:16 PM
To: mjindra@dsginc.biz
Subject: Message from KM_C368

Spuckler, Amanda (DLI)

From: Mike Jindra <Mike.Jindra@dsgsupply.com>
Sent: Tuesday, November 26, 2019 12:48 PM
To: Spuckler, Amanda (DLI)
Subject: ASHRAE 62.2 letter
Attachments: SKM_C36819112612150.pdf

Hi Amanda,
I faxed a letter in earlier this morning from myself.
Attached is a signed letter from one of my customers who believe in balanced ventilation.
If you want to send out a confirmation that you received it to him, his email is aaron@riccarhvac.com

I will probably be sending you a few more as I receive them.

Thank you for your attention on this,

Mike Jindra | *Account Manager – Plumbing/HVAC*
Dakota Supply Group | **P** (952) 935-0445 , **Ext:** 2219 | **F** (952) 935-7666
845 Berkshire Lane N | Plymouth, MN 55441
M (612) 597-3344

dakotasupplygroup.com

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To: mjindra@dsginc.biz
Subject: Message from KM_C368

11/26/2019

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c/o Ms. Amanda Spuckler
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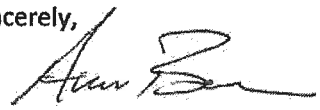
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,



Aaron Bosen
Riccar Heating

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

NOTE: Balanced ventilation has proven to be a much better method for ventilating new, tightly constructed homes in our climate. It has given us much more control of pressure and indoor air quality in our customer's homes and has eliminated some negative side effects of exhaust only ventilation. We feel allowing this method again would be a step backwards in our industry, and as a company, we would not revert back to using that method of satisfying code requirements.

Spuckler, Amanda (DLI)

From: Mike Moore <mmoore@newportventures.net>
Sent: Tuesday, November 26, 2019 11:55 AM
To: RULES, DLI (DLI)
Subject: Request for hearing - Chapter 1346

Dear Ms. Spuckler,

I am writing to request a hearing on DLI's proposed changes to Chapter 1346. The proposal to permit ASHRAE 62.2 as an alternative path to Chapter 1322 and 1346 and the proposal to supplant the current version of 1346 with the 2018 IMC would result in significant rollbacks in Minnesota's dwelling unit ventilation provisions -- which have established the minimum requirements for effective and efficient ventilation. Cold weather testing requirements for H/ERVs, balanced ventilation requirements, tempering of air to ensure occupant acceptability, distribution, and energy efficacy provisions would all be lost if Minnesota were to move forward with its proposed revisions to 1346. Further consideration needs to be given to the proposed language to maintain minimum and climate-appropriate mechanical ventilation requirements in Minnesota. I would be happy to assist in developing the language to ensure that Minnesota's current requirements are upheld as the state transitions to the 2018 I-codes.

Thank you for your consideration,

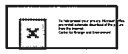
Mike

Mike Moore, P.E.
303.408.7015

Spuckler, Amanda (DLI)

From: Dave Bohac <dbohac@mncee.org>
Sent: Tuesday, November 26, 2019 11:07 AM
To: RULES, DLI (DLI)
Cc: Rebecca Olson
Subject: Proposed changes to Minnesota Rules Chapter 1346
Attachments: letterhead DLI dave bohac.pdf

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. Please see my attached letter regarding the proposed changes. Thank you.

Dave Bohac | 
Director of Research | **612-802-1697**
Center for Energy and Environment
212 Third Avenue North, Suite 560 | Minneapolis, MN 55401
(fax) 612-335-5866 | www.mncee.org

Center for Energy and Environment

November 26th, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

As the Director of Research at the Center for Energy and Environment (CEE), I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries within, the request to remove ASHRAE 62.2 2016 as an alternative compliance path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference).

The rationale provided in the SONAR concerning adoption of ASHRAE 62.2 2016 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria.
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 2016 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 2016 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in ASHRAE 62.2 2016 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but ASHRAE 62.2 2016 does not, meaning that occupants' ability to control their Indoor Air Quality will be limited under ASHRAE 62.2 2016.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by ASHRAE 62.2 2016.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

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www.mncee.org • main 612.335.5858 • fax 612.335.5888

Center for Energy and Environment

Approval of ASHRAE 62.2 2016 as an alternative path to Chapter 1322 would have serious effects on Indoor Air Quality of new residential buildings in MN. Since utilizing this alternative would allow exhaust only ventilation in very tight homes, most ventilation systems will not be able to adequately perform. There simply isn't enough make-up air available in tight homes, so they will become highly depressurized. This could contribute to increased pollutants pulled in from outdoors without filtration including excess summer humidity, radon, and allergens.

This is compounded further in low rise multifamily buildings where our research has shown that only 30% of new construction unit air leakage is attributable to the outside. The other 70% comes from adjacent units and common areas. This will exacerbate smell and pollutant transfer from unit to unit.

For these reasons, please remove ASHRAE 62.2 2016 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

I would like to thank you for the opportunity to provide these comments and request a hearing.

Sincerely,

Dave Bohac, Director of Research
18925 Rutledge Road
Deephaven, MN 55391

Spuckler, Amanda (DLI)

From: Rebecca Olson <rolson@mncee.org>
Sent: Tuesday, November 26, 2019 10:59 AM
To: RULES, DLI (DLI)
Cc: Josh Quinnell; Ben Schoenbauer; Lester Shen; Russ Landry; Isaac Smith; Phil Anderson; Tony Beres
Subject: Rulemaking Docket for Minnesota Rules Chapter 1346
Attachments: Letter to DLI from CEE re Chapter 1346.pdf

Amanda Spuckler,
Please accept the attached letter on behalf of 8 CEE staff requesting a hearing on the proposed changes to Minnesota Rules Chapter 1346. Rationale and comments as part of the request are included in the letter. Please confirm that you received this and that this counts as 8 of the 25 requests needed for a public hearing.
Thank you,
Rebecca Olson

Rebecca Olson | CEE
Director of Residential Programs | **651.789.5705**
Center for Energy and Environment
1754 University Ave West | St. Paul, MN 55104
www.mncee.org

cee
Center for Energy and Environment

November 26th, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

As research and new homes staff from the Center for Energy and Environment (CEE), we are writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries within, the request to remove ASHRAE 62.2 2016 as an alternative compliance path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference).

The rationale provided in the SONAR concerning adoption of ASHRAE 62.2 2016 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 2016 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 2016 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in ASHRAE 62.2 2016 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but ASHRAE 62.2 2016 does not, meaning that occupants' ability to control their Indoor Air Quality will be limited under ASHRAE 62.2 2016.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by ASHRAE 62.2 2016.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

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Approval of ASHRAE 62.2 2016 as an alternative path to Chapter 1322 would have serious effects on Indoor Air Quality of new residential buildings in MN. Since utilizing this alternative would allow exhaust only ventilation in very tight homes, most ventilation systems will not be able to adequately perform. There simply isn't enough make-up air available in tight homes, so they will become highly depressurized. This could contribute to increased pollutants pulled in from outdoors without filtration including excess summer humidity, radon, and allergens.

This is compounded further in low rise multifamily buildings where our research has shown that only 30% of new construction unit air leakage is attributable to the outside. The other 70% comes from adjacent units and common areas. This will exacerbate smell and pollutant transfer from unit to unit.

For these reasons, please remove ASHRAE 62.2 2016 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

On behalf of the Center for Energy and Environment (CEE), we would like to thank you for the opportunity to provide these comments and request a hearing.

Sincerely,

Rebecca Olson, Director of Residential Programs—1531 6th St. NE, Minneapolis MN 55413

Lester Shen, Director of Innovative Technologies—4732 Elliot Ave., Minneapolis, MN 55407

Russ Landry, Senior Mechanical Engineer—4372 123rd Circle NE, Blaine, MN 55449

Ben Schoenbauer, Senior Research Engineer—3520 Aldrich Ave. S., Minneapolis, MN 55408

Josh Quinnell, Senior Research Engineer—3851 Snelling Ave. S., Minneapolis, MN 55406

Isaac Smith, Residential Program Development Manager—2521 Pillsbury Ave. S., Minneapolis, MN 55404

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www.mncee.org • main 612.335.5858 • fax 612.335.5888

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Phil Anderson, QA and New Homes Manager—1499 Grantham St., St. Paul, MN 55104

Tony Beres, Inspector/Rater—1726 Jefferson St. NE, Minneapolis, MN 55413

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter

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www.mncee.org • main 612.335.5858 • fax 612.335.5888

Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting ASHRAE 62.2 2016 in Place of MN Rules, Chapter 1322
Balanced ventilation required to provide outdoor air (R403.5)	No requirement for balanced ventilation. Exhaust, supply, or balanced are permitted to provide outdoor air.	Approval of ASHRAE 62.2 2016 would enable a single bathroom exhaust fan to be used to provide the outdoor air requirements for a dwelling unit. Depressurization caused by exhaust-only systems can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
Minimum continuous ventilation rate of 40 cfm (R403.5.3)	No minimum ventilation rate backstop	Approval of ASHRAE 62.2 2016 could result in the ventilation rate going down to zero in some cases, meaning no mechanical ventilation would be required for some dwelling units.
Outdoor air for conditioned, unfinished basements, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Approval of ASHRAE 62.2 2016 would reduce the ventilation rate by as much as 50% for homes on unfinished basements. The ASHRAE 62.2 committee has recognized this as a problem and modified the requirement in future versions, but not the 2016 version.
Outdoor air for conditioned crawlspaces, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Unless addressed elsewhere in MN's code, approval of ASHRAE 62.2 2016 would remove any provisions to ensure that conditioned crawls meet minimum requirements.
Distribution: where a supply and return duct are used to meet ventilation requirement for basement, they must be separated by ½ the diagonal dimension of the basement to avoid short circuiting (R403.5)	No requirement for distribution in basements	Approval of ASHRAE 62.2 2016 would remove all air distribution requirements from MN's code. Distribution supports uniform air quality within a dwelling unit. Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, rendering the ventilation system ineffective.
Fan efficacy: establishes minimum requirements (Table R403.5.1)	No requirement for fan efficacy	Approval of 62.2 as an alternative to 1322 would remove the requirement for fan efficacy, meaning the energy required to operate ventilation systems could increase significantly. This deregulation of

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting ASHRAE 62.2 2016 in Place of MN Rules, Chapter 1322
		energy use of ventilation systems is in direct opposition to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state. Energy efficiency is one of the most cost-effective means to achieve GHG savings, and this rollback would compromise savings gained to date.
Total ventilation flow rate required at twice the continuous outdoor air rate to provide extra ventilation capacity as needed (R403.5.2)	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
HRVs must meet HVI Standard 920, 72 hours minus 13°F (-l0°C) cold weather test or be certified by a registered professional engineer (R403.5.5)	No requirement for cold weather test	Products without this cold weather test cannot function properly in MN's climate.
Distribution: requires delivery of outdoor air to each habitable space (R403.5.6.1)	No distribution requirement. ASHRAE 62.2 2016 dwelling unit ventilation requirements may be met by a single bathroom exhaust fan located in a remote corner of the home.	Distribution supports uniform air quality within a dwelling unit. If ASHRAE 62.2 2016 is approved, the requirement for distribution will be removed, and an exhaust fan located in a remote corner of the home (such as the master bedroom) would be approved to provide dwelling unit ventilation. Such a configuration could provide little to no air quality benefit in other areas of the home (such as children's bedrooms).
Outdoor air provided directly to habitable spaces shall be tempered (R403.5.6.1.2)	No requirement to temper outdoor air	Introducing outdoor air without tempering it can result in very uncomfortable conditions indoors, prompting occupants to disable their ventilation system. Disabling ventilation systems can be expected to result in poor indoor air quality, high moisture, and increased condensation potential that can support mold growth and ultimately compromise a home's structural integrity. Further, builders/designers frequently satisfy the requirement to temper

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting ASHRAE 62.2 2016 in Place of MN Rules, Chapter 1322
		outdoor air by specifying an H/ERV. These energy-efficient systems save large amounts of energy, especially in cold climates. In fact, recent action has been taken in ASHRAE 90.1 to require H/ERVs for dwelling units in the prescriptive path for climate zones 6 and 7 (see 2019 Section 6.5.6.1). A similar requirement is expected in the 2021 IECC, based on the public comment hearing vote for approval in October 2019 (pending final on-line voting; see proposal CE133 to the IECC). Minnesota, which has led the nation in this regard, would be stepping back from its leadership role in energy-efficient ventilation just as the model codes are beginning to follow Minnesota's lead.
In-situ airflow verification required if flow greater than 30 cfm and producible to building official upon request (R403.5.6.l.3)	In-situ flow verification only required for outdoor air systems, not local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
Maximum intermittent ventilation sone level: 2.5 sones R403.5.7)	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm. No requirement for remotely mounted fans.	Studies by Lawrence Berkeley National Lab have shown that a primary reason that range hoods are not operated is because occupants believe they are "too noisy". MN's current requirement for lower sone rates than ASHRAE 62.2 2016 supports operation of range hoods and consequently, better indoor air quality for occupants.
Prohibits simultaneously connecting both supply and return ventilation air ducts to a forced air circulation system, with exception (R403.5.9)	No limitations to ducting supply and return ventilation air ducts to a forced air circulation system	ASHRAE 62.2 2016 permits poor installation practices when integrating balanced systems with forced air circulation systems – which can render ventilation systems completely ineffective in providing acceptable IAQ.
Backdraft dampers are required on supply and exhaust ventilation systems (R403.5.10)	No dampers required on individually ducted supply or exhaust ventilation system	Backdraft dampers help reduce air leakage from the building when ventilation systems are not operating – thereby saving energy. Removing this requirement from MN's code is expected to increase energy use and promote over-ventilation.

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting ASHRAE 62.2 2016 in Place of MN Rules, Chapter 1322
Installation of ventilation system components shall minimize transmission of noise and vibration (R403.5.13)	No requirements for installation to minimize noise and vibration	Approval of ASHRAE 62.2 2016 would remove MN's current requirements that promote quality installation.
Controls are required to be readily accessible (R403.5.14.4)	Controls are not required to be readily accessible in all cases.	Approval of ASHRAE 62.2 2016 would limit accessibility of controls and occupants' ability to use them effectively in some cases.

Spuckler, Amanda (DLI)

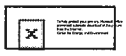
From: Jake Selstad <jselstad@mncee.org>
Sent: Tuesday, November 26, 2019 10:56 AM
To: RULES, DLI (DLI)
Subject: Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346
Attachments: 2019-11-26_104717.pdf

Hello,

Please see the attached response to the proposed changes to Minnesota Rules Chapter 1346.

Thank you,
Jake Selstad

--

Jake Selstad | 
Inspector/Rater | **651.789.5716**
Center for Energy and Environment
1754 University Ave West | St. Paul, MN 55104
www.mncee.org

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November 26th, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

As new homes staff from the Center for Energy and Environment (CEE), I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries within, the request to remove ASHRAE 62.2 2016 as an alternative compliance path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference).

The rationale provided in the SONAR concerning adoption of ASHRAE 62.2 2016 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria.
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 2016 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 2016 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in ASHRAE 62.2 2016 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but ASHRAE 62.2 2016 does not, meaning that occupants' ability to control their Indoor Air Quality will be limited under ASHRAE 62.2 2016.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by ASHRAE 62.2 2016.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

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Approval of ASHRAE 62.2 2016 as an alternative path to Chapter 1322 would have serious effects on Indoor Air Quality of new residential buildings in MN. Since utilizing this alternative would allow exhaust only ventilation in very tight homes, most ventilation systems will not be able to adequately perform. There simply isn't enough make-up air available in tight homes, so they will become highly depressurized. This could contribute to increased pollutants pulled in from outdoors without filtration including excess summer humidity, radon, and allergens.

This is compounded further in low rise multifamily buildings where our research has shown that only 30% of new construction unit air leakage is attributable to the outside. The other 70% comes from adjacent units and common areas. This will exacerbate smell and pollutant transfer from unit to unit.

For these reasons, please remove ASHRAE 62.2 2016 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

I would like to thank you for the opportunity to provide these comments and request a hearing.

Sincerely,

Jake Selstad, Inspector/Rater—4324 Grimes Ave. N., Robbinsdale, MN 55422

212 3rd Avenue North, Suite 560 • Minneapolis, MN 55401
www.mncee.org • main 612.335.5858 • fax 612.335.5888

Spuckler, Amanda (DLI)

From: Ben Rabe <rabe@fresh-energy.org>
Sent: Tuesday, November 26, 2019 11:15 AM
To: Spuckler, Amanda (DLI)
Subject: Fresh Energy - Building Mechanical Code Comments
Attachments: MN DOLI - Chapter1346 Fresh Energy Comments.docx

Ms. Amanda Spuckler,

Please find Fresh Energy comments on the Building Mechanical Code attached. Let me know if you have any questions.

Cheers,
Ben Rabe

Ben Rabe, CEM
Director, Built Environment
Fresh Energy
Phone 651 726 7574 | *he/him/his*
www.fresh-energy.org | @BenRabeMN

November 26, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Ben Rabe

Ben Rabe, CEM
Director, Built Environment
Fresh Energy
rabe@fresh-energy.org
651 726 7574

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Balanced ventilation required to provide outdoor air (R403.5)	No requirement for balanced ventilation. Exhaust, supply, or balanced are permitted to provide outdoor air.	Approval of 62.2 would enable a single bathroom exhaust fan to be used to provide the outdoor air requirements for a dwelling unit. Depressurization caused by exhaust-only systems can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
Minimum continuous ventilation rate of 40 cfm (R403.5.3)	No minimum ventilation rate backstop	Approval of 62.2 could result in the ventilation rate going down to zero in some cases, meaning no mechanical ventilation is would be required for some dwelling units.
Outdoor air for conditioned, unfinished basements, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Approval of 62.2 would reduce the ventilation rate by as much as 50% for homes on unfinished basements. 62.2 recognized this as a problem and modified the requirement in future versions, but the 2016 version is still broken.
Outdoor air for conditioned crawlspaces, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Unless addressed elsewhere in MN's code, approval of 62.2 would remove any provisions to ensure that conditioned crawls meet minimum requirements.
Distribution: where a supply and return duct are used to meet ventilation requirement for basement, they must be separated by ½ the diagonal dimension of the basement to avoid short circuiting (R403.5)	No requirement for distribution in basements	Approval of 62.2 would remove all air distribution requirements from MN's code. Distribution supports uniform air quality within a dwelling unit. Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, rendering the ventilation system ineffective.
Fan efficacy: establishes minimum requirements (Table R403.5.1)	No requirement for fan efficacy	Approval of 62.2 as an alternative to 1322 would remove the requirement for fan efficacy, meaning the energy required to operate ventilation systems could increase significantly. This deregulation of

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		energy use of ventilation systems is in direct opposition to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state. Energy efficiency is one of the most cost-effective means to achieve GHG savings, and this rollback would compromise savings gained to date.
Total ventilation flow rate required at twice the continuous outdoor air rate to provide extra ventilation capacity as needed (R403.5.2)	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
HRVs must meet HVI Standard 920, 72 hours minus 13°F (-l0°C) cold weather test or be certified by a registered professional engineer (R403.5.5)	No requirement for cold weather test	Without the cold weather test... (MANUFACTURERS TO FILL IN THE BLANK)
Distribution: requires delivery of outdoor air to each habitable space (R403.5.6.1)	No distribution requirement. ASHRAE 62.2 dwelling unit ventilation requirements may be met by a single bathroom exhaust fan located in a remote corner of the home.	Distribution supports uniform air quality within a dwelling unit. If ASHRAE 62.2 is approved, the requirement for distribution will be removed, and an exhaust fan located in a remote corner of the home (such as the master bedroom) would be approved to provide dwelling unit ventilation. Such a configuration could provide little to no air quality benefit in other areas of the home (such as children's bedrooms).
Outdoor air provided directly to habitable spaces shall be tempered (R403.5.6.1.2)	No requirement to temper outdoor air	Introducing outdoor air without tempering it (as approved by 62.2) can result in very uncomfortable conditions indoors, prompting occupants to disable their ventilation system. Disabling ventilation systems can be expected to result in poor indoor air quality, high moisture, and increased condensation potential that can support mold growth and ultimately compromise a home's structural integrity. Further, builders/designers frequently satisfy the

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		requirement to temper outdoor air by specifying an H/ERV. These energy-efficient systems save large amounts of energy, especially in cold climates. In fact, recent action has been taken in ASHRAE 90.1 to require H/ERVs for dwelling units in the prescriptive path for climate zones 6 and 7 (see 2019 Section 6.5.6.1). A similar requirement is expected in the 2021 IECC, based on the public comment hearing vote for approval in October 2019 (pending final on-line voting; see proposal CE133 to the IECC). Minnesota, which has led the nation in this regard, would be stepping back from its leadership role in energy-efficient ventilation just as the model codes are beginning to follow Minnesota's lead.
In-situ airflow verification required if flow greater than 30 cfm and producible to building official upon request (R403.5.6.I.3)	In-situ flow verification only required for outdoor air systems, not local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
Maximum intermittent ventilation sone level: 2.5 sones R403.5.7)	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm. No requirement for remotely mounted fans.	Studies by Lawrence Berkeley National Lab have shown that a primary reason that range hoods are not operated is because occupants believe they are "too noisy". MN's current requirement for lower sone rates than 62.2 supports operation of range hoods and consequently, better indoor air quality for occupants.
Prohibits simultaneously connecting both supply and return ventilation air ducts to a forced air circulation system, with exception (R403.5.9)	No limitations to ducting supply and return ventilation air ducts to a forced air circulation system	ASHRAE 62.2 permits poor installation practices when integrating balanced systems with forced air circulation systems – which can render ventilation systems completely ineffective in providing acceptable IAQ.
Backdraft dampers are required on supply and exhaust ventilation systems (R403.5.10)	No dampers required on individually ducted supply or exhaust ventilation system	Backdraft dampers help reduce air leakage from the building when ventilation systems are not operating – thereby saving energy. Removing this requirement from MN's code is expected to increase energy use and promote over-ventilation.

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Installation of ventilation system components shall minimize transmission of noise and vibration (R403.5.13)	No requirements for installation to minimize noise and vibration	Approval of 62.2 would remove MN's current requirements that promote quality installation.
Controls are required to be readily accessible (R403.5.14.4)	Controls are not required to be readily accessible in all cases.	Approval of 62.2 would limit accessibility of controls and occupants' ability to use them effectively in some cases.

Spuckler, Amanda (DLI)

From: Topitzhofer, Mike <Mike.Topitzhofer@irco.com>
Sent: Tuesday, November 26, 2019 10:01 AM
To: RULES, DLI (DLI)
Cc: Spuckler, Amanda (DLI)
Subject: Proposal to add ASHRAE 62.2 to the MN residential energy code
Attachments: MN Energy Code proposal.pdf

To Amanda Spuckler:

Good morning, I hope this message finds you well. Please see the attached letter containing my support against adopting the ASHRAE standard 62.2 into the MN residential energy code.

I'm a strong advocate for building new homes in MN that deliver low energy bills, healthy indoor air for occupants, and long-term durability. I believe that the current MN code requirement of balanced ventilation is the best approach MN homebuilders can take to achieve those goals, and ASHRAE 62.2 would represent a backward step. Thank you for your consideration.

Best regards,

Mike Topitzhofer
Ingersoll Rand
Business Development Manager, North Central
Mobile: 763.639.8030
Mike.topitzhofer@irco.com

www.trane.com/builders
www.americanstandardair.com/builders

November 26, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

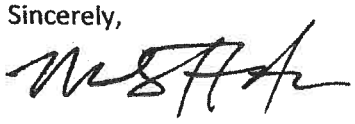
Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,



Michael Topitzhofer

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Balanced ventilation required to provide outdoor air (R403.5)	No requirement for balanced ventilation. Exhaust, supply, or balanced are permitted to provide outdoor air.	Approval of 62.2 would enable a single bathroom exhaust fan to be used to provide the outdoor air requirements for a dwelling unit. Depressurization caused by exhaust-only systems can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
Minimum continuous ventilation rate of 40 cfm (R403.5.3)	No minimum ventilation rate backstop	Approval of 62.2 could result in the ventilation rate going down to zero in some cases, meaning no mechanical ventilation is would be required for some dwelling units.
Outdoor air for conditioned, unfinished basements, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Approval of 62.2 would reduce the ventilation rate by as much as 50% for homes on unfinished basements. 62.2 recognized this as a problem and modified the requirement in future versions, but the 2016 version is still broken.
Outdoor air for conditioned crawlspaces, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Unless addressed elsewhere in MN's code, approval of 62.2 would remove any provisions to ensure that conditioned crawls meet minimum requirements.
Distribution: where a supply and return duct are used to meet ventilation requirement for basement, they must be separated by ½ the diagonal dimension of the basement to avoid short circuiting (R403.5)	No requirement for distribution in basements	Approval of 62.2 would remove all air distribution requirements from MN's code. Distribution supports uniform air quality within a dwelling unit. Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, rendering the ventilation system ineffective.
Fan efficacy: establishes minimum requirements (Table R403.5.1)	No requirement for fan efficacy	Approval of 62.2 as an alternative to 1322 would remove the requirement for fan efficacy, meaning the energy required to operate ventilation systems could increase significantly. This deregulation of

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		energy use of ventilation systems is in direct opposition to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state. Energy efficiency is one of the most cost-effective means to achieve GHG savings, and this rollback would compromise savings gained to date.
Total ventilation flow rate required at twice the continuous outdoor air rate to provide extra ventilation capacity as needed (R403.5.2)	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
HRVs must meet HVI Standard 920, 72 hours minus 13°F (-l0°C) cold weather test or be certified by a registered professional engineer (R403.5.5)	No requirement for cold weather test	Without the cold weather test... (MANUFACTURERS TO FILL IN THE BLANK)
Distribution: requires delivery of outdoor air to each habitable space (R403.5.6.1)	No distribution requirement. ASHRAE 62.2 dwelling unit ventilation requirements may be met by a single bathroom exhaust fan located in a remote corner of the home.	Distribution supports uniform air quality within a dwelling unit. If ASHRAE 62.2 is approved, the requirement for distribution will be removed, and an exhaust fan located in a remote corner of the home (such as the master bedroom) would be approved to provide dwelling unit ventilation. Such a configuration could provide little to no air quality benefit in other areas of the home (such as children's bedrooms).
Outdoor air provided directly to habitable spaces shall be tempered (R403.5.6.1.2)	No requirement to temper outdoor air	Introducing outdoor air without tempering it (as approved by 62.2) can result in very uncomfortable conditions indoors, prompting occupants to disable their ventilation system. Disabling ventilation systems can be expected to result in poor indoor air quality, high moisture, and increased condensation potential that can support mold growth and ultimately compromise a home's structural integrity. Further, builders/designers frequently satisfy the

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		requirement to temper outdoor air by specifying an H/ERV. These energy-efficient systems save large amounts of energy, especially in cold climates. In fact, recent action has been taken in ASHRAE 90.1 to require H/ERVs for dwelling units in the prescriptive path for climate zones 6 and 7 (see 2019 Section 6.5.6.1). A similar requirement is expected in the 2021 IECC, based on the public comment hearing vote for approval in October 2019 (pending final on-line voting; see proposal CE133 to the IECC). Minnesota, which has led the nation in this regard, would be stepping back from its leadership role in energy-efficient ventilation just as the model codes are beginning to follow Minnesota's lead.
In-situ airflow verification required if flow greater than 30 cfm and producible to building official upon request (R403.5.6.1.3)	In-situ flow verification only required for outdoor air systems, not local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
Maximum intermittent ventilation sone level: 2.5 sones R403.5.7)	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm. No requirement for remotely mounted fans.	Studies by Lawrence Berkeley National Lab have shown that a primary reason that range hoods are not operated is because occupants believe they are "too noisy". MN's current requirement for lower sone rates than 62.2 supports operation of range hoods and consequently, better indoor air quality for occupants.
Prohibits simultaneously connecting both supply and return ventilation air ducts to a forced air circulation system, with exception (R403.5.9)	No limitations to ducting supply and return ventilation air ducts to a forced air circulation system	ASHRAE 62.2 permits poor installation practices when integrating balanced systems with forced air circulation systems – which can render ventilation systems completely ineffective in providing acceptable IAQ.
Backdraft dampers are required on supply and exhaust ventilation systems (R403.5.10)	No dampers required on individually ducted supply or exhaust ventilation system	Backdraft dampers help reduce air leakage from the building when ventilation systems are not operating – thereby saving energy. Removing this requirement from MN's code is expected to increase energy use and promote over-ventilation.

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Installation of ventilation system components shall minimize transmission of noise and vibration (R403.5.13)	No requirements for installation to minimize noise and vibration	Approval of 62.2 would remove MN's current requirements that promote quality installation.
Controls are required to be readily accessible (R403.5.14.4)	Controls are not required to be readily accessible in all cases.	Approval of 62.2 would limit accessibility of controls and occupants' ability to use them effectively in some cases.

Spuckler, Amanda (DLI)

From: Tim McDonald <Tim.McDonald@dsgsupply.com>
Sent: Tuesday, November 26, 2019 9:38 AM
To: RULES, DLI (DLI)
Cc: Spuckler, Amanda (DLI)
Subject: MN Proposal to allow 62.2
Attachments: MN Proposal to allow 62.2.docx

Amanda Spuckler – Please see attached letter

Please note my new email is Tim.McDonald@dsgsupply.com

Tim McDonald | *Account Manager – Indoor Air Quality*
Dakota Supply Group | **P** (651) 224-5781, **Ext:** 2215 | **F** (651) 224-5902
475 Minnehaha Ave W | St. Paul, MN 55103
M (612) 597-3399 | **D** (651) 558-5775

dakotasupplygroup.com

DATE: November 26, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I have worked in the Ventilation Industry for 30 years. I have been part of the education process on how to build an energy efficient home with continuous air/vapor barriers. I was a qualified educator for the state of Minnesota and taught the builders their 8 hours of continued education so they could receive their credits for their builder's license.
In the course of building a very tight home we discover the problems that occur from building tight and those problems are Moisture issues and Indoor Air Quality issues. We figured out that we needed mechanical ventilation for the home. That could be achieved multiple ways, but exhaust only ventilation is not one of them. When we allowed exhaust only ventilation, we had call backs, that included the following:

1. Higher Energy Cost
2. Negative Pressure in the Home
3. Supply Air could be Radon and Soil Gases
4. Not enough CFM to Solve Window Condensation
5. Continuous running bath fans in the ceiling were never cleaned
6. Comfort Complaints
7. Fresh air is not fresh air and is not distributed to all habitable rooms
8. No filtration of fresh air
9. Can not dictate where fresh air will come in

So, I am writing to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries with in the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Tim McDonald

Dakota Supply Group
475 W Minnehaha Ave
St Paul, MN 55103
612-597-3399

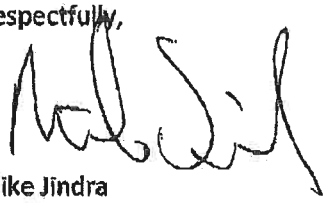
To Whom It May Concern:

We request a hearing on the matter of ASHRAE 62.2 as an alternative to our current Minnesota Code.

I have been involved with home builders, remodelors, architects, as well as plumbing, heating and electrical contractors for over 35 years. I am convinced that balanced ventilation is the only acceptable form of ventilation in Minnesota.

In my opinion, adopting 62.2 would be moving backwards. House tightness is NOT moving backwards. Ventilation is becoming even more critical now. We cannot afford the potential moisture, indoor air quality, and excess energy usage that exhaust only ventilation would again create. Having a continuous running fan in a tight home will almost certainly increase moisture and soil gas (radon) intrusion. ASHRAE 62.2 will also have a potential impact on decreased homeowner comfort.

Respectfully,



Mike Jindra

Dakota Supply Group

Territory Manager

Twin Cities

Spuckler, Amanda (DLI)

From: rickc@saufferassociates.com
Sent: Tuesday, November 26, 2019 8:10 AM
To: RULES, DLI (DLI)
Subject: ASHRAE Proposal 62.2 on Ventilation Compliance
Attachments: 1126190750~2 (1) (4).jpg

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Please see the attached letter for ventilation ASHRAE 62.2 not be added as an option.

Please contact Saufferer & Associates should you have any questions.
Thank You!
Rick Clemens
Saufferer & Associates
612-720-1074

SAUFFERER & ASSOCIATES
24120 Rice Lake Drive
Lakeville, Minnesota 55044

To: Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

From: Richard Clemens
9748 Oak Shore Drive
Lakeville, Minnesota 55044

11/26/19

Re: PROPOSAL TO ADD ASHRAE 62.2-2016 TO MINNESOTA RULES CHAPTER 1346 AS A VENTILATION COMPLIANCE OPTION.

Dear Ms. Spuckler:

I would like to request a hearing on the proposed changes to Minnesota Rules Chapter 1346.

I would like the opportunity to request that ASHRAE 62.2 not be added as a ventilation option to Minnesota Rules Chapter 1322 from both Chapter 1346

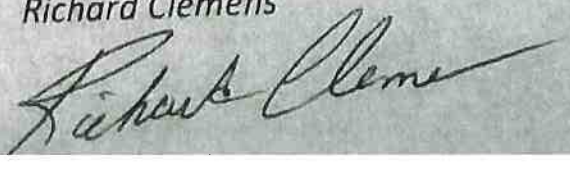
The ventilation provisions of Minnesota's code have been working very well. They lead to better houses being built, with improved IAQ and lower energy cost. The proposal is a step backward.

The Statement of Need and Reasonableness asserts that the ventilation requirements of 62.2-2016 are the same as in our Minnesota code. But that's not the case. Minnesota's rules are much better and contractors in Minnesota have learned that following these rules result in better ventilation systems that really improve IAQ and save energy. If ASHRAE 62.2 is allowed in our code, people will have to make a special point of asking for ventilations systems that are as good and easy-to-use as we already are installing.

In conclusion, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,
Richard Clemens



Spuckler, Amanda (DLI)

From: Doug Kirchner <dkirchner@renewaire.com>
Sent: Monday, November 25, 2019 8:58 PM
To: RULES, DLI (DLI)
Subject: MN DOLI - Chapter1346 Comment Template A
Attachments: MN DOLI - Chapter1346 Comment Template A.docx

Ms. Spuckler,

I think there would be nothing but value for all parties involved if additional dialogue was engaged in so the intent of any changes is understood by all.

Best Regards,

Doug Kirchner

11/25/2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I request a hearing on the proposed changes to Minnesota Rules Chapter 1346 (part of R-04515).

I additionally request that the proposals to allow ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 be removed from both Chapter 1346 and also Chapter 1309 (by reference).

Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code. These provisions have been successfully implemented by the market place and have provided significant indoor air quality and energy-savings benefits to Minnesota purchasers of new homes.

The proposal to all ASHRAE 62.2 will increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans.

The justification in the SONAR for adoption of 62.2 is misleading and erroneous:

1. The SONAR asserts that "ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322" as an argument to permit the use of ASHRAE 62.2 as an alternate compliance path. In fact, the performance requirements of 62.2 and Chapter 1322 are very different, and 62.2-compliant systems under-perform Chapter 1322 compliant systems across over a dozen criteria.
2. The SONAR claims incorrectly that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." The two are different in at least four areas:
    a. Installation requirements: ASHRAE 62.2 does not require installation of balanced systems with distribution and also field verification of local exhaust flow rates, but Chapter 1322 does.
    b. Control of Ventilation: Chapter 1322 requires all ventilation controls to be readily accessible, so that occupants' have full control over their Indoor Air Quality (IAQ) systems, but ASHRAE 62.2 does not.
    c. Air change rates:
        i. ASHRAE 62.2 permits ventilation rates to go to zero, and in some cases requires no mechanical ventilation. Chapter 1346 as it stands requires a minimum of 40 cfm.
        ii. Chapter 1322 requires roughly double the ventilation air change rates for unfinished basements than does ASHRAE 62.2.

    These are not just technical or editorial differences. They represent a significant step backwards for the indoor air quality and health of Minnesota home-buyers. See the attachment for the many other differences.

The proposed text in for Chapter 1346.0050 adds the statement that "ASHRAE 62.2 is not subject to frequent change". In fact, ASHRAE 62.2 constitutes a rapidly changing target. In ASHRAE parlance this is a "continuous

maintenance" standard, changes rapidly, and already has been replaced by an updated standard with many significant changes. ASHRAE 62.2-2016 no longer represents the best thinking on the subject of residential ventilation.

Minnesota displayed leadership in residential IAQ and ventilation efficiency when it adopted the current relevant provisions in Chapters 1322 and 1349. Now, model codes and standards around the nation are catching up to Minnesota's leadership, validating the effectiveness and good sense of the current provisions.

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

If ASHRAE 62.2 is allowed as an alternative compliance path, ventilation energy use for dwelling units in Minnesota will increase and residential IAQ will decline.

Therefore, I request ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for your consideration and acceptance of my comment.

Sincerely,

Doug Kirchner
Regional Sales Director
Cell: 608-807-8069, Off.: 608-221-4499 x2220
RenewAire
Energy Recovery Ventilation

Attachment: Differences between MN Rules and ASHRAE 62.2-2016, and analysis of impacts of proposed rule changes

Attachment: Differences between MN Rules and ASHRAE 62.2-2016, and analysis of impacts of proposed rule changes

MN Rules, Chapter 1322 Ventilation Requirements	**Comparable ASHRAE 62.2-2016 Provisions**	**What happens if 62.2 is allowed as an alternative compliance path in Minnesota?**
R403.5: **Balanced outdoor air ventilation** is required.	Allows for exhaust, supply, or balanced outdoor air ventilation.	A single bathroom exhaust fan to be used to provide the outdoor air requirements, depressurizing the dwelling unit. Depressurization can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
R403.5.3: Sets a **minimum continuous ventilation rate** at 40 cfm.	No minimum ventilation rate	In some dwelling units, no mechanical ventilation at all would be required.
R403.5.6.1.2: **Temper outdoor air** provided directly to habitable spaces.	No requirement to temper outdoor air	Introducing un-tempered outdoor air can be very uncomfortable conditions indoors, so occupants simply disable their ventilation system. The result is worse indoor air quality. In winter, expect too much moisture and potential for condensation and mold growth which is bad for Indoor Air Quality (IAQ) and ultimately compromise a home's structural integrity. It is easy to satisfy the requirement to temper outdoor air by specifying a Heat or Energy Recovery Ventilator (H/ERV), and this saves large amounts of energy in the cold Minnesota climate. ASHRAE 90.1 and the 2021 IECC are likely to require H/ERVs for dwelling units in climate zones 6 and 7 (see 2019 Section 6.5.6.1). Minnesota has led the nation in provisions for energy-efficient ventilation, and would vacate this leadership role just as the model codes are beginning to follow its lead.
R403.5 **Ventilation of conditioned, unfinished basements:** outdoor air, or a minimum of one supply and one return duct, must be provided.	No requirement for unfinished spaces.	For homes built on unfinished basements the ventilation rate would be reduced by up to 50% for homes on unfinished basements. Future versions 62.2 have addressed this problem, but not the 2016 version.
R403.5: **Ventilation of conditioned crawl spaces:** outdoor air, or a	No requirement for crawlspaces.	Conditioned crawl spaces would not be ventilated.

MN Rules, Chapter 1322 Ventilation Requirements	Comparable ASHRAE 62.2-2016 Provisions	What happens if 62.2 is allowed as an alternative compliance path in Minnesota?
minimum of one supply and one return duct, must be provided.		
R403.5: Preventing distribution short-circuiting: supply and return ducts are used to meet ventilation requirement for basement, must be separated by ½ the diagonal dimension of the basement.	No requirement for distribution in basements	Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, and the ventilation system does not work.
Table R403.5.1: establishes minimum **Fan efficacy** requirements.	None	Energy required to operate ventilation systems could increase significantly requirement for fan efficacy. The proposed deregulation of energy use of ventilation systems is contrary to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state, since energy efficiency is one of the most cost-effective means to achieve GHG savings.
R403.5.2: **Extra ventilation capacity**: the "total" ventilation flow rate must be twice the continuous outdoor air rate, so extra ventilation capacity is available.	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
403.5.6.1: Outdoor air must be **distributed** to each habitable space.	No distribution requirements; a single bathroom exhaust fan located in a remote corner of the home meets the standards.	Ventilation "systems" consisting of a single exhaust fan located in a remote corner of the home (such as the master bedroom) would be accepted, but could provide little to no air quality benefit in other areas of the home (e.g. children's bedrooms).
R403.5.9: In most cases **prohibits simultaneous** connection of both supply and return ventilation air ducts to a forced air circulation system.	No limitations.	Poor installation methods for integrating balanced systems with forced air circulation systems will be allowed: these ventilation systems don't provide acceptable IAQ.
R403.5.10: **Backdraft dampers** are required on supply and exhaust ventilation systems.	No requirements	Energy use will increase because backdraft dampers reduce air leakage from the building when ventilation systems are not operating.

MN Rules, Chapter 1322 Ventilation Requirements	Comparable ASHRAE 62.2-2016 Provisions	What happens if 62.2 is allowed as an alternative compliance path in Minnesota?
R403.5.14.4: Readily-accessible **Ventilation System Controls**.	Not required in all cases to be readily accessible.	If occupants can't easily control their ventilation systems, they are more likely simply to shut them off.
R403.5.6.l.3: In-situ **airflow verification** required for all airflows greater than 30 cfm (including exhaust-only and H/ERVs) and available to building official upon request.	In-situ flow verification not required for local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
R403.5.7: **Maximum intermittent ventilation noise level**: 2.5 sones.	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm.	The main reason that range hoods are not operated is because occupants believe they are "too noisy" (study by LBNL). MN's current requirement for lower sone rates than 62.2 supports operation of quiet range hoods and consequently, better indoor air quality for occupants.

Spuckler, Amanda (DLI)

From: Randy Green <Randy.Green@galarson.com>
Sent: Monday, November 25, 2019 4:35 PM
To: RULES, DLI (DLI)
Subject: Minnesota Consideration of Adopting ASHRAE 62.2
Attachments: Energy Code.pdf

Ms Spuckler, please see the attached letter expressing my feelings regarding the possible adoption of ASHRAE 62.2.

Best Regards,

Randy Green | Residential Sales Manager

GUSTAVE A. LARSON
EXTRAORDINARY SERVICE. INNOVATIVE SOLUTIONS.

13200 10th Ave North | Plymouth, MN 55441
D 612.656.4340 | **M** 612.961.5523 | **F** 763.546.3934

GUSTAVE A. LARSON

EXTRAORDINARY SERVICE. INNOVATIVE SOLUTIONS.

To: Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

From: Randy Green

November 25, 2019

Re: PROPOSAL TO ADD ASHRAE 62.2-2016 TO MINNESOTA RULES CHAPTER 1346 AS A VENTILATION COMPLIANCE OPTION.

Dear Ms. Spuckler:

I would like to request a hearing on the proposed changes to Minnesota Rules Chapter 1346.

I would like the opportunity to request that ASHRAE 62.2 not be added as a ventilation option to Minnesota Rules Chapter 1322 from both Chapter 1346

The ventilation provisions of Minnesota's code have been working very well. They lead to better houses being built, with improved IAQ and lower energy cost. The proposal is a step backward.

The Statement of Need and Reasonableness asserts that the ventilation requirements of 62.2-2016 are the same as in our Minnesota code. But that's not the case. Minnesota's rules are much better and contractors in Minnesota have learned that following these rules result in better ventilation systems that really improve IAQ and save energy. If ASHRAE 62.2 is allowed in our code, people will have to make a special point of asking for ventilations systems that are as good and easy-to-use as we already are installing.

In conclusion, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Randy Green

Randy Green | Residential Sales Manager
13200 10th Ave North | Plymouth, MN 55441
D 612.656.4340 | M 612.961.5523 | F 763.546.3934

Spuckler, Amanda (DLI)

From: Todd Ferrara <Todd.Ferrara@standardheating.com>
Sent: Monday, November 25, 2019 4:55 PM
To: RULES, DLI (DLI)
Cc: Spuckler, Amanda (DLI)
Subject: On the matter of ASHREA 62.2 as an "alterative", we request a hearing.
Attachments: 3687_001.pdf

Amanda Spuckler
Department of Labor and Industry, -Rule Making Hearing Request
443 Lafayette Road N., St. Paul, MN 55155

Regarding:

Permitting ASHRAE 62.2 to be used as an alternative compliance path for the ventilation requirements of dwelling units, both under Minnesota's residential code (Chapter 1309) and mechanical code (Chapter 1346).
On the matter of ASHREA 62.2 as an "alterative", we request a hearing.
All new houses should be required to have balanced ventilation and tempered outdoor air in Minnesota. The affects of improper ventilation can be extreme and damaging to construction, create energy wasting opportunities and have a negative impact on comfort.
Respectfully,

Todd Ferrara
Vice President

Todd Ferrara | Vice President
Standard Heating & Air Conditioning
130 Plymouth Avenue North
Desk & Mobile: 612-436-2351 | standardheating.com

STANDARD HEATING & AIR CONDITIONING
Facebook: www.facebook.com/StandardHeating Twitter: twitter.com/StandardHeating

STANDARD HEATING
& AIR CONDITIONING

November 25, 2019

Amanda Speckler
Department of Labor and Industry, -Rule Making Hearing Request
443 Lafayette Road N., St. Paul, MN 55155

Regarding:

Permitting ASHRAE 62.2 to be used as an alternative compliance path for the ventilation requirements of dwelling units, both under Minnesota's residential code (Chapter 1309) and mechanical code (Chapter 1346).

On the matter of ASHREA 62.2 as an "alterative", we request a hearing.

All new houses should be required to have balanced ventilation and tempered outdoor air in Minnesota. The affects of improper ventilation can be extreme and damaging to construction, create energy wasting opportunities and have a negative impact on comfort.

Respectfully,

Todd Ferrara
Vice President

Spuckler, Amanda (DLI)

From: Rick Welter <RickW@welterheating.com>
Sent: Monday, November 25, 2019 2:36 PM
To: RULES, DLI (DLI)
Subject: Proposal to ASHRAE 62.2-2016
Attachments: DoLI Amanda Spuckler letter.pdf

Ms Spuckler,

Please find attached, my letter in regards to not changing the ventilation compliance option.
The proposal would be a step backwards.

Thank you-

Rick Welter
612-825-6867

Air Condition your shelter with Ray N. WELTER HEATING CO.
4637 CHICAGO AVENUE SOUTH MINNEAPOLIS, MN 55407
612-825-6867

To: Department of Labor and Industry

c/o Ms. Amanda Spuckler

443 Lafayette Road

N. St. Paul, MN 55155

From: Rick Welter

11/25/2019

Re: PROPOSAL TO ADD ASHRAE 62.2-2016 TO MINNESOTA RULES CHAPTER 1346 AS A VENTILATION COMPLIANCE OPTION.

Dear Ms. Spuckler:

I would like to request a hearing on the proposed changes to Minnesota Rules Chapter 1346.

I would like the opportunity to request that ASHRAE 62.2 not be added as a ventilation option to Minnesota Rules Chapter 1322 from both Chapter 1346

The ventilation provisions of Minnesota's code have been working very well. They lead to better houses being built, with improved IAQ and lower energy cost. The proposal is a step backward.

The Statement of Need and Reasonableness asserts that the ventilation requirements of 62.2-2016 are the same as in our Minnesota code. But that's not the case. Minnesota's rules are much better and contractors in Minnesota have learned that following these rules result in better ventilation systems that really improve IAQ and save energy. If ASHRAE 62.2 is allowed in our code, people will have to make a special point of asking for ventilations systems that are as good and easy-to-use as we already are installing.

In conclusion, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Rick Welter

Rick Welter, President- Welter Heating Co.

Spuckler, Amanda (DLI)

From: Chuck Gates <cgates@renewaire.com>
Sent: Monday, November 25, 2019 1:04 PM
To: RULES, DLI (DLI)
Subject: Hearing Request on Proposed Changes to MN Rules Chapter 1346
Attachments: Request for Hearing re Chapter 1346 changes - Gates Werner & Agopian.pdf

Attn: Amanda Spuckler
Department of Labor and Industry
443 Lafayette Road N.
St. Paul, MN 55155
phone (651) 284-5006
fax: (651) 284-5749

Dear Amanda,

Please find attached a letter, signed by 3 of our executives, to request a hearing on the proposed changes to Minnesota Rules Chapter 1346.

Thank you for this opportunity, please contact me with any questions you may have.

Best Regards,
Chuck Gates
Chief Executive Officer
Office: (800) 627-4499 x2250
Direct: (608) 850-2250
Cell: (608) 358-0371
www.renewaire.com

RenewAire
Energy Recovery Ventilation

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2019/11/25

RenewAire LLC
201 Raemisch Road
Waunakee WI 53597

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

We request a hearing on the proposed changes to Minnesota Rules Chapter 1346 (part of R-04515).

I additionally request that the proposals to allow ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 be removed from both Chapter 1346 and (by reference) Chapter 1309.

Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code. These provisions have been successfully implemented by the market place and have provided significant indoor air quality and energy-savings benefits to Minnesota purchasers of new homes.

Matthew Friedlander, our VP of Research and Development, has communicated to you some of the technical problems with the rules changes as proposed, so we won't reiterate them here.

He tells us that Mike Moore has provided you with specific recommendations for constructive amendments to the proposed changes and that these are positive for our industry, and more importantly for health, energy efficiency and protection of dwellings. We hope his recommendations meet with your approval and that you will implement them.

Thank you for your consideration and acceptance of our request.

Sincerely,

Chuck Gates
CEO
CGates@renewaire.com
608-850-2250

Nick Agopian
VP Sales and Marketing
NAgopian@renewaire.com
608-850-2222

Neal Werner
VP Engineering
NWerner@renewaire.com
608-850-2279

SAUFFERER
associates

1DATE: November 23, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I request a hearing on the proposed changes to Minnesota Rules Chapter 1346 (part of R-04515).

I additionally request that the proposals to allow ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 be removed from both Chapter 1346 and also Chapter 1309 (by reference).

Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code. These provisions have been successfully implemented by the market place and have provided significant indoor air quality and energy-savings benefits to Minnesota purchasers of new homes.

The proposal to all ASHRAE 62.2 will increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans.

The justification in the SONAR for adoption of 62.2 is misleading and erroneous:

1. The SONAR asserts that "ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322" as an argument to permit the use of ASHRAE 62.2 as an alternate compliance path. In fact, the performance requirements of 62.2 and Chapter 1322 are very different, and 62.2-compliant systems under-perform Chapter 1322 compliant systems across over a dozen criteria.
2. The SONAR claims incorrectly that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." The two are different in at least four areas:
    a. Installation requirements: ASHRAE 62.2 does not require installation of balanced systems with distribution and also field verification of local exhaust flow rates, but Chapter 1322 does.
    b. Control of Ventilation: Chapter 1322 requires all ventilation controls to be readily accessible, so that occupants' have full control over their Indoor Air Quality (IAQ) systems, but ASHRAE 62.2 does not.
    c. Air change rates:
        i. ASHRAE 62.2 permits ventilation rates to go to zero, and in some cases requires no mechanical ventilation. Chapter 1346 as it stands requires a minimum of 40 cfm.
        ii. Chapter 1322 requires roughly double the ventilation air change rates for unfinished basements than does ASHRAE 62.2.

These are not just technical or editorial differences. They represent a significant step backwards for the indoor air quality and health of Minnesota home-buyers. See the attachment for the many other differences.

24120 Rice Lake Road, Lakeville, MN 55044
p: 952.469.8515 f: 952.469.8550
www.sauffererassociates.com

The proposed text in for Chapter 1346.0050 adds the statement that "ASHRAE 62.2 is not subject to frequent change". In fact, ASHRAE 62.2 constitutes a rapidly changing target. In ASHRAE parlance this is a "continuous maintenance" standard, changes rapidly, and already has been replaced by an updated standard with many significant changes. ASHRAE 62.2-2016 no longer represents the best thinking on the subject of residential ventilation.

Minnesota displayed leadership in residential IAQ and ventilation efficiency when it adopted the current relevant provisions in Chapters 1322 and 1349. Now, model codes and standards around the nation are catching up to Minnesota's leadership, validating the effectiveness and good sense of the current provisions.

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

If ASHRAE 62.2 is allowed as an alternative compliance path, ventilation energy use for dwelling units in Minnesota will increase and residential IAQ will decline.

Therefore, I request ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for your consideration and acceptance of my comment.

Sincerely,

Attachment: Differences between MN Rules and ASHRAE 62.2-2016, and analysis of impacts of proposed rule changes

Attachment: Differences between MN Rules and ASHRAE 62.2-2016, and analysis of impacts of proposed rule changes

MN Rules, Chapter 1322 Ventilation Requirements	**Comparable ASHRAE 62.2-2016 Provisions**	**What happens if 62.2 is allowed as an alternative compliance path in Minnesota?**
R403.5: **Balanced outdoor air ventilation** is required.	Allows for exhaust, supply, or balanced outdoor air ventilation.	A single bathroom exhaust fan to be used to provide the outdoor air requirements, depressurizing the dwelling unit. Depressurization can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
R403.5.3: Sets a **minimum continuous ventilation rate** at 40 cfm.	No minimum ventilation rate	In some dwelling units, no mechanical ventilation at all would be required.
R403.5.6.1.2: **Temper outdoor air** provided directly to habitable spaces.	No requirement to temper outdoor air	Introducing un-tempered outdoor air can be very uncomfortable conditions indoors, so occupants simply disable their ventilation system. The result is worse indoor air quality. In winter, expect too much moisture and potential for condensation and mold growth which is bad for Indoor Air Quality (IAQ) and ultimately compromise a home's structural integrity. It is easy to satisfy the requirement to temper outdoor air by specifying a Heat or Energy Recovery Ventilator (H/ERV), and this saves large amounts of energy in the cold Minnesota climate. ASHRAE 90.1 and the 2021 IECC are likely to require H/ERVs for dwelling units in climate zones 6 and 7 (see 2019 Section 6.5.6.1). Minnesota has led the nation in provisions for energy-efficient ventilation, and would vacate this leadership role just as the model codes are beginning to follow its lead.
R403.5 **Ventilation of conditioned, unfinished basements:** outdoor air, or a minimum of one supply and one return duct, must be provided.	No requirement for unfinished spaces.	For homes built on unfinished basements the ventilation rate would be reduced by up to 50% for homes on unfinished basements. Future versions 62.2 have addressed this problem, but not the 2016 version.
R403.5: **Ventilation of conditioned crawl spaces:** outdoor air, or a	No requirement for crawlspaces.	Conditioned crawl spaces would not be ventilated.

MN Rules, Chapter 1322 Ventilation Requirements	Comparable ASHRAE 62.2-2016 Provisions	What happens if 62.2 is allowed as an alternative compliance path in Minnesota?
minimum of one supply and one return duct, must be provided.		
R403.5: Preventing distribution short-circuiting: supply and return ducts are used to meet ventilation requirement for basement, must be separated by ½ the diagonal dimension of the basement.	No requirement for distribution in basements	Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, and the ventilation system does not work.
Table R403.5.1: establishes minimum **Fan efficacy** requirements.	None	Energy required to operate ventilation systems could increase significantly requirement for fan efficacy. The proposed deregulation of energy use of ventilation systems is contrary to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state, since energy efficiency is one of the most cost-effective means to achieve GHG savings.
R403.5.2: **Extra ventilation capacity**: the "total" ventilation flow rate must be twice the continuous outdoor air rate, so extra ventilation capacity is available.	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
403.5.6.1: Outdoor air must be **distributed** to each habitable space.	No distribution requirements; a single bathroom exhaust fan located in a remote corner of the home meets the standards.	Ventilation "systems" consisting of a single exhaust fan located in a remote corner of the home (such as the master bedroom) would be accepted, but could provide little to no air quality benefit in other areas of the home (e.g. children's bedrooms).
R403.5.9: In most cases **prohibits simultaneous** connection of both supply and return ventilation air ducts to a forced air circulation system.	No limitations.	Poor installation methods for integrating balanced systems with forced air circulation systems will be allowed: these ventilation systems don't provide acceptable IAQ.
R403.5.10: **Backdraft dampers** are required on supply and exhaust ventilation systems.	No requirements	Energy use will increase because backdraft dampers reduce air leakage from the building when ventilation systems are not operating.

MN Rules, Chapter 1322 Ventilation Requirements	**Comparable ASHRAE 62.2-2016 Provisions**	**What happens if 62.2 is allowed as an alternative compliance path in Minnesota?**
R403.5.14.4: Readily-accessible **Ventilation System Controls**.	Not required in all cases to be readily accessible.	If occupants can't easily control their ventilation systems, they are more likely simply to shut them off.
R403.5.6.l.3: In-situ **airflow verification** required for all airflows greater than 30 cfm (including exhaust-only and H/ERVs) and available to building official upon request.	In-situ flow verification not required for local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
R403.5.7: **Maximum intermittent ventilation noise level**: 2.5 sones.	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm.	The main reason that range hoods are not operated is because occupants believe they are "too noisy" (study by LBNL). MN's current requirement for lower sone rates than 62.2 supports operation of quiet range hoods and consequently, better indoor air quality for occupants.

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To: Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

From: Alex Reinhardt Install Manager at Genz-Ryan plumbing and Heating

11/22/19

Re: PROPOSAL TO ADD ASHRAE 62.2-2016 TO MINNESOTA RULES CHAPTER 1346 AS A VENTILATION COMPLIANCE OPTION.

Dear Ms. Spuckler:

I would like to request a hearing on the proposed changes to Minnesota Rules Chapter 1346.

I would like the opportunity to request that ASHRAE 62.2 not be added as a ventilation option to Minnesota Rules Chapter 1322 from both Chapter 1346

The ventilation provisions of Minnesota's code have been working very well. They lead to better houses being built, with improved IAQ and lower energy cost. The proposal is a step backward.

The Statement of Need and Reasonableness asserts that the ventilation requirements of 62.2-2016 are the same as in our Minnesota code. But that's not the case. Minnesota's rules are much better and contractors in Minnesota have learned that following these rules result in better ventilation systems that really improve IAQ and save energy. If ASHRAE 62.2 is allowed in our code, people will have to make a special point of asking for ventilations systems that are as good and easy-to-use as we already are installing.

In conclusion, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Alex Reinhardt

Spuckler, Amanda (DLI)

From: Scott Forest <SForest@renewaire.com>
Sent: Friday, November 22, 2019 4:52 PM
To: RULES, DLI (DLI)
Subject: Request for Hearing re Chapter 1346 changes
Attachments: Request for Hearing re Chapter 1346 changes - Forest & Sowinski.pdf

TO:
Amanda Spuckler
Department of Labor and Industry
443 Lafayette Road N.
St. Paul, MN 55155
phone (651) 284-5006
fax: (651) 284-5749

Dear Amanda Spuckler,

I would like to request a hearing on the proposed changes to Minnesota Rules Chapter 1346 via the attached letter. Thank you for the consideration and opportunity to comment.

Best,
Scott Forest
President
Off.: (800) 627-4499 ext 2230

RenewAire
Energy Recovery Ventilation

renewaire.com

From: RenewAire LLC
201 Raemisch Road
Waunakee WI 53597

To: Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

2019/11/22

Re: PROPOSAL TO ADD ASHRAE 62.2-2016 TO MINNESOTA RULES CHAPTER 1346 AS A VENTILATION COMPLIANCE OPTION.

Dear Ms. Spuckler:

I would like to request a hearing on the proposed changes to Minnesota Rules Chapter 1346.

We are concerned that adding ASHRAE 62.2 as a ventilation option to Minnesota Rules Chapter 1346 will lead to unintended and negative outcomes.

The ventilation provisions of Minnesota's code have been working very well. They lead to better houses being built, with improved IAQ and lower energy cost. The proposal is a step backward.

The Statement of Need and Reasonableness asserts that the ventilation requirements of 62.2-2016 are the same as in our Minnesota code. But that's not the case. Minnesota's rules are much better and contractors in Minnesota have learned that following these rules result in better ventilation systems that really improve IAQ and save energy. If ASHRAE 62.2 is allowed in the code, people will have to make a special point of asking for ventilations systems that are as good and easy-to-use as contractors all over the state already are installing.

I understand that representatives of our industry have made specific proposals to address these concerns. I sincerely hope that these proposals will meet your concerns

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Scott Forest, President
sforest@renewaire.com
608-850-2230

Mike Sowinski, Director of Finance
msowinski@renewaire.com
608-835-2255

Spuckler, Amanda (DLI)

From: Pope, Russell <russell.pope@us.panasonic.com>
Sent: Friday, November 22, 2019 11:08 AM
To: Spuckler, Amanda (DLI)
Subject: Panasonic Request for Public Hearing on Minnesota Rules Chapter 1346 changes
Attachments: MN Code - Amanda Spuckler.docx

Dear Amanda,

Please kindly receive and review the attached request for public hearing.

Respectfully,

Russell

Panasonic

"We are dedicated to delivering healthy indoor living solutions- so everyone thrives"

Industry Development Manager
Panasonic Life Solutions Company of America
russell.pope@us.panasonic.com

Mobile (904)735-8409

PANASONIC
LIFE SOLUTIONS
COMPANY OF AMERICA

First Last Name
Job title

email@us.panasonic.com

123.456.7890

November 22, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

We (Panasonic) hereby reach out to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries within the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference).

Newport Partners LLC has developed materials that provide a direct comparison of the ventilation requirements in ASHRAE 62.2 and in Minnesota Rules Chapter 1346. Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
    d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.

PANASONIC
LIFE SOLUTIONS
COMPANY OF AMERICA

First Last Name
Job title
email@us.panasonic.com
123.456.7890

3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Respectfully,

Russell Pope
Industry Development Manager
Panasonic Life Solutions Company of America

Spuckler, Amanda (DLI)

From: Patrick Nielsen <Patrick.Nielsen@broan.com>
Sent: Monday, November 18, 2019 3:59 PM
To: RULES, DLI (DLI)
Subject: Comment on MN proposed changes to chapter 1346
Attachments: MN DOLI - Chapter1346 Comment Broan.docx

Hello Amanda,
Please find the attached comment regarding proposed changes to chapter 1346.

Sincerely,

Patrick Nielsen | Global Technical Products Manager
(262) 673-8534 (office) | (414) 405-2772 (cell)
patrick.nielsen@broan.com | www.Broan.com

BROAN NuTone
COME HOME TO FRESH AIR

November 18, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

The Home Ventilating Institute (HVI), founded in 1955, is an international nonprofit association of the manufacturers of home ventilating products. HVI's core purpose is "To Make Indoor Air Healthier." Through its Certified Ratings Programs, HVI provides a voluntary means for residential ventilation manufacturers to report comparable and creditable product performance information based upon uniformly applied testing standards and procedures performed by independent laboratories. Certified performance ratings include airflow, sound and energy.

Today, HVI represents manufacturers from the United States, Canada, Asia and Europe, producing the majority of the residential ventilation products sold in North America. HVI certification is a prerequisite for obtaining the ENERGY STAR® rating for mechanical ventilation equipment.

We hereby reach out to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries within it the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Newport Partners LLC www.newportpartnersllc.com has developed the attached Appendix A which provides a direct comparison of the ventilation requirements in ASHRAE 62.2 and in Minnesota Rules Chapter 1346. Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.

d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.

3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Patrick Nielsen (HVI Board of Directors)
Broan-NuTone
patrick.nielsen@broan.com
262 673-8534

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Balanced ventilation required to provide outdoor air (R403.5)	No requirement for balanced ventilation. Exhaust, supply, or balanced are permitted to provide outdoor air.	Approval of 62.2 would enable a single bathroom exhaust fan to be used to provide the outdoor air requirements for a dwelling unit. Depressurization caused by exhaust-only systems can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
Minimum continuous ventilation rate of 40 cfm (R403.5.3)	No minimum ventilation rate backstop	Approval of 62.2 could result in the ventilation rate going down to zero in some cases, meaning no mechanical ventilation is would be required for some dwelling units.
Outdoor air for conditioned, unfinished basements, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Approval of 62.2 would reduce the ventilation rate by as much as 50% for homes on unfinished basements. 62.2 recognized this as a problem and modified the requirement in future versions, but the 2016 version is still broken.
Outdoor air for conditioned crawlspaces, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Unless addressed elsewhere in MN's code, approval of 62.2 would remove any provisions to ensure that conditioned crawls meet minimum requirements.
Distribution: where a supply and return duct are used to meet ventilation requirement for basement, they must be separated by ½ the diagonal dimension of the basement to avoid short circuiting (R403.5)	No requirement for distribution in basements	Approval of 62.2 would remove all air distribution requirements from MN's code. Distribution supports uniform air quality within a dwelling unit. Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, rendering the ventilation system ineffective.
Fan efficacy: establishes minimum requirements (Table R403.5.1)	No requirement for fan efficacy	Approval of 62.2 as an alternative to 1322 would remove the requirement for fan efficacy, meaning the energy required to operate ventilation systems could increase significantly. This deregulation of

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		energy use of ventilation systems is in direct opposition to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state. Energy efficiency is one of the most cost-effective means to achieve GHG savings, and this rollback would compromise savings gained to date.
Total ventilation flow rate required at twice the continuous outdoor air rate to provide extra ventilation capacity as needed (R403.5.2)	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
HRVs must meet HVI Standard 920, 72 hours minus 13°F (-l0°C) cold weather test or be certified by a registered professional engineer (R403.5.5)	No requirement for cold weather test	Without the cold weather test... (MANUFACTURERS TO FILL IN THE BLANK)
Distribution: requires delivery of outdoor air to each habitable space (R403.5.6.1)	No distribution requirement. ASHRAE 62.2 dwelling unit ventilation requirements may be met by a single bathroom exhaust fan located in a remote corner of the home.	Distribution supports uniform air quality within a dwelling unit. If ASHRAE 62.2 is approved, the requirement for distribution will be removed, and an exhaust fan located in a remote corner of the home (such as the master bedroom) would be approved to provide dwelling unit ventilation. Such a configuration could provide little to no air quality benefit in other areas of the home (such as children's bedrooms).
Outdoor air provided directly to habitable spaces shall be tempered (R403.5.6.1.2)	No requirement to temper outdoor air	Introducing outdoor air without tempering it (as approved by 62.2) can result in very uncomfortable conditions indoors, prompting occupants to disable their ventilation system. Disabling ventilation systems can be expected to result in poor indoor air quality, high moisture, and increased condensation potential that can support mold growth and ultimately compromise a home's structural integrity. Further, builders/designers frequently satisfy the

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		requirement to temper outdoor air by specifying an H/ERV. These energy-efficient systems save large amounts of energy, especially in cold climates. In fact, recent action has been taken in ASHRAE 90.1 to require H/ERVs for dwelling units in the prescriptive path for climate zones 6 and 7 (see 2019 Section 6.5.6.1). A similar requirement is expected in the 2021 IECC, based on the public comment hearing vote for approval in October 2019 (pending final on-line voting; see proposal CE133 to the IECC). Minnesota, which has led the nation in this regard, would be stepping back from its leadership role in energy-efficient ventilation just as the model codes are beginning to follow Minnesota's lead.
In-situ airflow verification required if flow greater than 30 cfm and producible to building official upon request (R403.5.6.l.3)	In-situ flow verification only required for outdoor air systems, not local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
Maximum intermittent ventilation sone level: 2.5 sones R403.5.7)	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm. No requirement for remotely mounted fans.	Studies by Lawrence Berkeley National Lab have shown that a primary reason that range hoods are not operated is because occupants believe they are "too noisy". MN's current requirement for lower sone rates than 62.2 supports operation of range hoods and consequently, better indoor air quality for occupants.
Prohibits simultaneously connecting both supply and return ventilation air ducts to a forced air circulation system, with exception (R403.5.9)	No limitations to ducting supply and return ventilation air ducts to a forced air circulation system	ASHRAE 62.2 permits poor installation practices when integrating balanced systems with forced air circulation systems – which can render ventilation systems completely ineffective in providing acceptable IAQ.
Backdraft dampers are required on supply and exhaust ventilation systems (R403.5.10)	No dampers required on individually ducted supply or exhaust ventilation system	Backdraft dampers help reduce air leakage from the building when ventilation systems are not operating – thereby saving energy. Removing this requirement from MN's code is expected to increase energy use and promote over-ventilation.

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Installation of ventilation system components shall minimize transmission of noise and vibration (R403.5.13)	No requirements for installation to minimize noise and vibration	Approval of 62.2 would remove MN's current requirements that promote quality installation.
Controls are required to be readily accessible (R403.5.14.4)	Controls are not required to be readily accessible in all cases.	Approval of 62.2 would limit accessibility of controls and occupants' ability to use them effectively in some cases.

SILVER TREE
PLUMBING AND HEATING LLC.

November 13, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Re: PROPOSAL TO ADD ASHRAE 62.2-2016 TO MINNESOTA RULES CHAPTER 1346 AS A VENTILATION COMPLIANCE OPTION.

Dear Ms. Spuckler:

I would like to request a hearing on the proposed changes to Minnesota Rules Chapter 1346.

I would like the opportunity to request that ASHRAE 62.2 not be added as a ventilation option to Minnesota Rules Chapter 1322 from both Chapter 1346

The ventilation provisions of Minnesota's code have been working very well. They lead to better houses being built, with improved IAQ and lower energy cost. The proposal is a step backward.

The Statement of Need and Reasonableness asserts that the ventilation requirements of 62.2-2016 are the same as in our Minnesota code. But that's not the case. Minnesota's rules are much better and contractors in Minnesota have learned that following these rules result in better ventilation systems that really improve IAQ and save energy. If ASHRAE 62.2 is allowed in our code, people will have to make a special point of asking for ventilations systems that are as good and easy-to-use as we already are installing.

In conclusion, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Todd Boyum
Owner
Silver Tree Plumbing & Heating, LLC
1335 Mendota Heights Rd.
Mendota Heights, MN 55120

Spuckler, Amanda (DLI)

From: Matt Matheny <mmatheny@solerpalau.com>
Sent: Monday, November 18, 2019 11:34 AM
To: Spuckler, Amanda (DLI)
Subject: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346
Attachments: S&P USA Request for Public Hearing on Minnesota Rules Chapter 1346 Chang....pdf

Dear Ms. Spuckler,

S&P USA requests that the proposals to allow ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 be removed from both Chapter 1346 and also Chapter 1309 (by reference). Please see attached letter in response to this proposal and confirm receipt of this email at your earliest convenience.

Thank you,
Matt Matheny
Residential Product Manager

S&P USA Ventilation Systems, LLC
6393 Powers Avenue
Jacksonville, FL 32217 USA
T. (904) 731-4711
F. (904) 737-8322
www.spvg-northamerica.com

S&P USA Ventilation Systems, LLC
6393 Powers Avenue
Jacksonville, FL 32217
P. 904-731-4711
F. 904-731-8322
www.spvg-northamerica.com

November 18, 2019

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155
amanda.spuckler@state.mn.us

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

S&P USA Ventilation Systems, LLC requests a hearing on the proposed changes to Minnesota Rules Chapter 1346 (part of R-04515). Additionally, we request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference).

Please find the attached Appendix A which provides a direct comparison (and anticipated outcomes) of the ventilation requirements in ASHRAE 62.2 and in Minnesota Rules Chapter 1346. Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements.

Furthermore, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:
    a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
    b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
    c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.

S&P USA Ventilation Systems, LLC
6393 Powers Avenue
Jacksonville, FL 32217
P. 904-731-4711
F. 904-731-8322
www.spvg-northamerica.com

   d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.
3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version (2019) incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Matt Matheny
Residential Product Manager
S&P USA Ventilation Systems, LLC
6393 Powers Avenue
Jacksonville, FL 32217
Phone: 800-961-7370
Fax: 800-961-7379
www.spvg-northamerica.com

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Balanced ventilation required to provide outdoor air (R403.5)	No requirement for balanced ventilation. Exhaust, supply, or balanced are permitted to provide outdoor air.	Approval of 62.2 would enable a single bathroom exhaust fan to be used to provide the outdoor air requirements for a dwelling unit. Depressurization caused by exhaust-only systems can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
Minimum continuous ventilation rate of 40 cfm (R403.5.3)	No minimum ventilation rate backstop	Approval of 62.2 could result in the ventilation rate going down to zero in some cases, meaning no mechanical ventilation is would be required for some dwelling units.
Outdoor air for conditioned, unfinished basements, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Approval of 62.2 would reduce the ventilation rate by as much as 50% for homes on unfinished basements. 62.2 recognized this as a problem and modified the requirement in future versions, but the 2016 version is still broken.
Outdoor air for conditioned crawlspaces, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Unless addressed elsewhere in MN's code, approval of 62.2 would remove any provisions to ensure that conditioned crawls meet minimum requirements.
Distribution: where a supply and return duct are used to meet ventilation requirement for basement, they must be separated by ½ the diagonal dimension of the basement to avoid short circuiting (R403.5)	No requirement for distribution in basements	Approval of 62.2 would remove all air distribution requirements from MN's code. Distribution supports uniform air quality within a dwelling unit. Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, rendering the ventilation system ineffective.

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Fan efficacy: establishes minimum requirements (Table R403.5.1)	No requirement for fan efficacy	Approval of 62.2 as an alternative to 1322 would remove the requirement for fan efficacy, meaning the energy required to operate ventilation systems could increase significantly. This deregulation of energy use of ventilation systems is in direct opposition to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state. Energy efficiency is one of the most cost-effective means to achieve GHG savings, and this rollback would compromise savings gained to date.
Total ventilation flow rate required at twice the continuous outdoor air rate to provide extra ventilation capacity as needed (R403.5.2)	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
HRVs must meet HVI Standard 920, 72 hours minus 13°F (-l0°C) cold weather test or be certified by a registered professional engineer (R403.5.5)	No requirement for cold weather test	Without the cold weather test… (MANUFACTURERS TO FILL IN THE BLANK)
Distribution: requires delivery of outdoor air to each habitable space (R403.5.6.1)	No distribution requirement. ASHRAE 62.2 dwelling unit ventilation requirements may be met by a single bathroom exhaust fan located in a remote corner of the home.	Distribution supports uniform air quality within a dwelling unit. If ASHRAE 62.2 is approved, the requirement for distribution will be removed, and an exhaust fan located in a remote corner of the home (such as the master bedroom) would be approved to provide dwelling unit ventilation. Such a configuration could provide little to no air quality benefit in other areas of the home (such as children's bedrooms).

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Outdoor air provided directly to habitable spaces shall be tempered (R403.5.6.1.2)	No requirement to temper outdoor air	Introducing outdoor air without tempering it (as approved by 62.2) can result in very uncomfortable conditions indoors, prompting occupants to disable their ventilation system. Disabling ventilation systems can be expected to result in poor indoor air quality, high moisture, and increased condensation potential that can support mold growth and ultimately compromise a home's structural integrity. Further, builders/designers frequently satisfy the requirement to temper outdoor air by specifying an H/ERV. These energy-efficient systems save large amounts of energy, especially in cold climates. In fact, recent action has been taken in ASHRAE 90.1 to require H/ERVs for dwelling units in the prescriptive path for climate zones 6 and 7 (see 2019 Section 6.5.6.1). A similar requirement is expected in the 2021 IECC, based on the public comment hearing vote for approval in October 2019 (pending final on-line voting; see proposal CE133 to the IECC). Minnesota, which has led the nation in this regard, would be stepping back from its leadership role in energy-efficient ventilation just as the model codes are beginning to follow Minnesota's lead.
In-situ airflow verification required if flow greater than 30 cfm and producible to building official upon request (R403.5.6.1.3)	In-situ flow verification only required for outdoor air systems, not local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Maximum intermittent ventilation sone level: 2.5 sones R403.5.7)	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm. No requirement for remotely mounted fans.	Studies by Lawrence Berkeley National Lab have shown that a primary reason that range hoods are not operated is because occupants believe they are "too noisy". MN's current requirement for lower sone rates than 62.2 supports operation of range hoods and consequently, better indoor air quality for occupants.
Prohibits simultaneously connecting both supply and return ventilation air ducts to a forced air circulation system, with exception (R403.5.9)	No limitations to ducting supply and return ventilation air ducts to a forced air circulation system	ASHRAE 62.2 permits poor installation practices when integrating balanced systems with forced air circulation systems – which can render ventilation systems completely ineffective in providing acceptable IAQ.
Backdraft dampers are required on supply and exhaust ventilation systems (R403.5.10)	No dampers required on individually ducted supply or exhaust ventilation system	Backdraft dampers help reduce air leakage from the building when ventilation systems are not operating – thereby saving energy. Removing this requirement from MN's code is expected to increase energy use and promote over-ventilation.
Installation of ventilation system components shall minimize transmission of noise and vibration (R403.5.13)	No requirements for installation to minimize noise and vibration	Approval of 62.2 would remove MN's current requirements that promote quality installation.
Controls are required to be readily accessible (R403.5.14.4)	Controls are not required to be readily accessible in all cases.	Approval of 62.2 would limit accessibility of controls and occupants' ability to use them effectively in some cases.

Spuckler, Amanda (DLI)

From: Jacki Donner - CEO <exec@hvi.org>
Sent: Monday, November 11, 2019 4:25 PM
To: Spuckler, Amanda (DLI)
Cc: 'Mike Moore (mmoore@newportventures.net)'; ola.wettergren; Jim Boldt - Engineering Dir
Subject: HVI - Rulemaking Docket for Minnesota Rules Chapter 1346
Attachments: HVI_MN DOLI - Chapter1346 Comment Submission 11112019.pdf

Importance: High

Ms. Spuckler, please refer to attached PDF for details on our request for a hearing.

Kind regards,
Jacki Donner
CEO, HVI

Jacquelyn Donner, CAE
Executive Director/CEO/Secretary
exec@harca.info

1740 Dell Range Blvd, Ste H
PMB 450
Cheyenne, WY 82009
USA

Ph 855.484.8368 Ext. 101
Fax 480.559.9722
www.ventipedia.org

HARCA™
HEALTHY AIR RESEARCH AND CERTIFICATION AUTHORITY

HVI
HOME VENTILATING INSTITUTE
Advancing the Value of Residential Ventilation for Healthier Living™

Jacquelyn Donner, CAE
Executive Director/CEO
exec@hvi.org

1740 Dell Range Blvd, Ste H
PMB 450
Cheyenne, WY 82009
USA

Ph 855.HVI.VENT
(855.484.8368) Ext. 101
Fax 480.559.9722
www.hvi.org

HOME VENTILATING INSTITUTE

HARCA™

ANSI ACCREDITED
ISO/IEC 17065
Product Certification Body
#0841

MEMBER OF
Indoor Air Quality ASSOCIATION INC.

RESNET
RESIDENTIAL ENERGY SERVICES NETWORK

11 November 2019

Department of Labor and Industry
Attn: Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

Via email to: amanda.spuckler@state.mn.us

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

The Home Ventilating Institute (HVI), founded in 1955, is an international nonprofit association of the manufacturers of home ventilating products. HVI's core purpose is "To Make Indoor Air Healthier." Through its Certified Ratings Programs, HVI provides a voluntary means for residential ventilation manufacturers to report comparable and creditable product performance information based upon uniformly applied testing standards and procedures from independent laboratories. Certified performance ratings include airflow, sound and energy.

Today, HVI represents manufacturers from North America, South America, Asia and Europe, producing the majority of the residential ventilation products sold in the United States and Canada. HVI certification is a prerequisite for obtaining the ENERGY STAR® rating for mechanical ventilation equipment.

We hereby reach out to request a hearing on the proposed changes to Minnesota Rules Chapter 1346. This request carries within the request to remove ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 from both Chapter 1346 and also Chapter 1309 (by reference). Newport Partners LLC (http://www.newportpartnersllc.com/) has developed the attached Appendix A which provides a direct comparison of the ventilation requirements in ASHRAE 62.2 and in Minnesota Rules Chapter 1346. Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code and is expected to increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans. Further, the rationale provided in the SONAR concerning adoption of 62.2 is faulty for the following reasons:

1. The SONAR states, "Because ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322, it is reasonable to permit the use of ASHRAE 62.2 as an alternative." This statement is false, as the performance requirements between 62.2 and Chapter 1322 vary drastically, with 62.2-compliant systems expected to under-perform Chapter 1322 compliant systems across over a dozen criteria (see Appendix A for details).
2. The SONAR claims that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." This statement is false for the following reasons:

a. Air change rates: ASHRAE 62.2 permits ventilation rates to go to zero, requiring no mechanical ventilation in some cases, versus a minimum of 40 cfm prescribed by Chapter 1346.
b. Air change rates: Ventilation air change rates for homes on unfinished basements in 62.2 are roughly half of the rates required by Chapter 1322's rates.
c. Ventilation controls: Chapter 1322 requires all ventilation controls to be readily accessible, but 62.2 does not, meaning that occupants' ability to control their IAQ will be limited under 62.2.
d. Installation: Chapter 1322 requires installation of balanced systems with distribution and also field verification of local exhaust flow rates, none of which are required by 62.2.

3. The text in Chapter 1346.0050 claims that "ASHRAE 62.2 is not subject to frequent change." This statement is false, as ASHRAE classifies Standard 62.2 as a standard that is "under continuous maintenance". As such, the standard changes frequently, and the 2016 version proposed for adoption by Minnesota has already been replaced with a subsequent version incorporating several substantive changes.

Approval of 62.2 as an alternative path to Chapter 1322 would increase ventilation energy use for dwelling units in Minnesota at a time when the model codes and standards are finally starting to catch up to Minnesota's leadership in this regard. For example:

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

For these reasons, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,

Jacki Donner
CEO

Enclosure: Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

Appendix A: Comparison of ASHRAE 62.2-2016 and Minnesota Rules Chapter 1322

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Balanced ventilation required to provide outdoor air (R403.5)	No requirement for balanced ventilation. Exhaust, supply, or balanced are permitted to provide outdoor air.	Approval of 62.2 would enable a single bathroom exhaust fan to be used to provide the outdoor air requirements for a dwelling unit. Depressurization caused by exhaust-only systems can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
Minimum continuous ventilation rate of 40 cfm (R403.5.3)	No minimum ventilation rate backstop	Approval of 62.2 could result in the ventilation rate going down to zero in some cases, meaning no mechanical ventilation is would be required for some dwelling units.
Outdoor air for conditioned, unfinished basements, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Approval of 62.2 would reduce the ventilation rate by as much as 50% for homes on unfinished basements. 62.2 recognized this as a problem and modified the requirement in future versions, but the 2016 version is still broken.
Outdoor air for conditioned crawlspaces, or a minimum of one supply and one return duct (R403.5)	No requirement. Outdoor air only required in finished spaces, based on definition in ANSI Standard Z765.	Unless addressed elsewhere in MN's code, approval of 62.2 would remove any provisions to ensure that conditioned crawls meet minimum requirements.
Distribution: where a supply and return duct are used to meet ventilation requirement for basement, they must be separated by ½ the diagonal dimension of the basement to avoid short circuiting (R403.5)	No requirement for distribution in basements	Approval of 62.2 would remove all air distribution requirements from MN's code. Distribution supports uniform air quality within a dwelling unit. Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, rendering the ventilation system ineffective.
Fan efficacy: establishes minimum requirements (Table R403.5.1)	No requirement for fan efficacy	Approval of 62.2 as an alternative to 1322 would remove the requirement for fan efficacy, meaning the energy required to operate ventilation systems could increase significantly. This deregulation of energy use of ventilation systems is in direct opposition to Minnesota

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state. Energy efficiency is one of the most cost-effective means to achieve GHG savings, and this rollback would compromise savings gained to date.
Total ventilation flow rate required at twice the continuous outdoor air rate to provide extra ventilation capacity as needed (R403.5.2)	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
HRVs must meet HVI Standard 920, 72 hours minus 13°F (-l0°C) cold weather test or be certified by a registered professional engineer (R403.5.5)	No requirement for cold weather test	Without the cold weather test... (MANUFACTURERS TO FILL IN THE BLANK)
Distribution: requires delivery of outdoor air to each habitable space (R403.5.6.1)	No distribution requirement. ASHRAE 62.2 dwelling unit ventilation requirements may be met by a single bathroom exhaust fan located in a remote corner of the home.	Distribution supports uniform air quality within a dwelling unit. If ASHRAE 62.2 is approved, the requirement for distribution will be removed, and an exhaust fan located in a remote corner of the home (such as the master bedroom) would be approved to provide dwelling unit ventilation. Such a configuration could provide little to no air quality benefit in other areas of the home (such as children's bedrooms).
Outdoor air provided directly to habitable spaces shall be tempered (R403.5.6.1.2)	No requirement to temper outdoor air	Introducing outdoor air without tempering it (as approved by 62.2) can result in very uncomfortable conditions indoors, prompting occupants to disable their ventilation system. Disabling ventilation systems can be expected to result in poor indoor air quality, high moisture, and increased condensation potential that can support mold growth and ultimately compromise a home's structural integrity. Further, builders/designers frequently satisfy the requirement to temper outdoor air by specifying an H/ERV. These

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
		energy-efficient systems save large amounts of energy, especially in cold climates. In fact, recent action has been taken in ASHRAE 90.1 to require H/ERVs for dwelling units in the prescriptive path for climate zones 6 and 7 (see 2019 Section 6.5.6.1). A similar requirement is expected in the 2021 IECC, based on the public comment hearing vote for approval in October 2019 (pending final on-line voting; see proposal CE133 to the IECC). Minnesota, which has led the nation in this regard, would be stepping back from its leadership role in energy-efficient ventilation just as the model codes are beginning to follow Minnesota's lead.
In-situ airflow verification required if flow greater than 30 cfm and producible to building official upon request (R403.5.6.I.3)	In-situ flow verification only required for outdoor air systems, not local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
Maximum intermittent ventilation sone level: 2.5 sones R403.5.7)	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm. No requirement for remotely mounted fans.	Studies by Lawrence Berkeley National Lab have shown that a primary reason that range hoods are not operated is because occupants believe they are "too noisy". MN's current requirement for lower sone rates than 62.2 supports operation of range hoods and consequently, better indoor air quality for occupants.
Prohibits simultaneously connecting both supply and return ventilation air ducts to a forced air circulation system, with exception (R403.5.9)	No limitations to ducting supply and return ventilation air ducts to a forced air circulation system	ASHRAE 62.2 permits poor installation practices when integrating balanced systems with forced air circulation systems – which can render ventilation systems completely ineffective in providing acceptable IAQ.
Backdraft dampers are required on supply and exhaust ventilation systems (R403.5.10)	No dampers required on individually ducted supply or exhaust ventilation system	Backdraft dampers help reduce air leakage from the building when ventilation systems are not operating – thereby saving energy. Removing this requirement from MN's code is expected to increase energy use and promote over-ventilation.

MN Rules, Chapter 1322 Ventilation Requirements	ASHRAE 62.2-2016 Corollary	Anticipated Outcome of Adopting 62.2 in Place of MN Rules, Chapter 1322
Installation of ventilation system components shall minimize transmission of noise and vibration (R403.5.13)	No requirements for installation to minimize noise and vibration	Approval of 62.2 would remove MN's current requirements that promote quality installation.
Controls are required to be readily accessible (R403.5.14.4)	Controls are not required to be readily accessible in all cases.	Approval of 62.2 would limit accessibility of controls and occupants' ability to use them effectively in some cases.

Spuckler, Amanda (DLI)

From: Ola Wettergren <ola.wettergren@systemair.net>
Sent: Sunday, November 10, 2019 2:59 PM
To: Spuckler, Amanda (DLI)
Subject: Request for Public Hearing on Minnesota Rules Chapter 1346 changes

Dear Mrs. Spuckler,

Systemair, using the brand name Fantech (web-site www.fantech.net) in the residential ventilation market in North America, request that the proposals to allow ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 be removed from both Chapter 1346 and also Chapter 1309 (by reference).

The Minnesota code's ventilation provisions were innovative at the time they were introduced, providing efficient ventilation requirements that have worked effectively in Minnesota's relatively harsh climate. Balanced ventilation with heat or energy recovery is the most cost effective way to provide healthy indoor air quality to the benefit of inhabitants, and protecting the structure of housing from humidity related problems in most climate zones in North America.

Utilization of balanced ventilation with hear or energy recovery is not as widely adopted in the US as in most other developed countries. The efficiency and cost effectiveness of these products is gradually being recognized with codes and standards in many areas of the US increasingly requiring, or recognizing the benefits of, HRV's and ERV's.

Allowing ASHRAE 62.2 as an alternative path in Minnesota would be a big step backward resulting in higher energy consumption. Further, we see ever greater recognition of the negative effects of poor indoor air quality on health and productivity. Systemair therefore hereby requests a hearing on the proposed changes to Minnesota Rules Chapter 1346 (part of R-04515).

We would appreciate your confirmation that this E-mail was received, and submitted in an acceptable format to be considered as a comment requesting a hearing.

Thank you in advance for your consideration, and feel free to contact me if we can be of assistance.

Sincerely,
Ola Wettergren
Business Development Director

systemair

Systemair
10048 Industrial Blvd., Lenexa, KS, 66215, , United States
Phone: 913.752.6000
Mobile: 941.350.7055
ola.wettergren@systemair.net
www.systemair.net

Spuckler, Amanda (DLI)

From: Matthew B. Rimnac <mrimnac@mnair.com>
Sent: Friday, November 08, 2019 3:48 PM
To: RULES, DLI (DLI)
Subject: Request for removal of 62.2
Attachments: MN DOLI - Chapter1346 Comment.docx

Amanda,

Please see my attached letter about my concerns on 62.2 as an alternate compliance path to chapter 1322

Thanks you for your time.

Matt Rimnac

To: Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155

From: Matt Rimnac

Nov 8, 2019

Re: PROPOSAL TO ADD ASHRAE 62.2-2016 TO MINNESOTA RULES CHAPTER 1346 AS A VENTILATION COMPLIANCE OPTION.

Dear Ms. Spuckler:

I would like to request a hearing on the proposed changes to Minnesota Rules Chapter 1346.

I would like the opportunity to request that ASHRAE 62.2 not be added as a ventilation option to Minnesota Rules Chapter 1322 from both Chapter 1346

The ventilation provisions of Minnesota's code have been working very well. They lead to better houses being built, with improved IAQ and lower energy cost. The proposal is a step backward.

The Statement of Need and Reasonableness asserts that the ventilation requirements of 62.2-2016 are the same as in our Minnesota code. But that's not the case. Minnesota's rules are much better and contractors in Minnesota have learned that following these rules result in better ventilation systems that really improve IAQ and save energy. If ASHRAE 62.2 is allowed in our code, people will have to make a special point of asking for ventilations systems that are as good and easy-to-use as we already are installing.

In conclusion, please remove ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for the opportunity to provide this comment and for your consideration.

Sincerely,
Matt Rimnac

Spuckler, Amanda (DLI)

From: Matthew Friedlander <mfried@renewaire.com>
Sent: Wednesday, November 06, 2019 2:46 PM
To: Spuckler, Amanda (DLI)
Subject: 2019-11-06 Request for Public Hearing Minnesota Rules Chapter 1346
Attachments: MN DOLI - Chapter1346 Comment Friedlander 2019-11-05.pdf

Dear Ms. Spuckler,

Thank you for your assistance over the last few weeks.

Attached please find my request for a public hearing with regards to Chapter 1346. It includes my comments on some of the proposed changes.

Sincerely,

Matthew Friedlander
mfried@renewaire.com 608-850-2270 800-627-4499 x 2270
RenewAire LLC

RenewAire LLC
201 Raemisch Road
Waunakee WI 53597

2019/11/05

Department of Labor and Industry
c/o Ms. Amanda Spuckler
443 Lafayette Road
N. St. Paul, MN 55155
amanda.spuckler@state.mn.us

Re: RULEMAKING DOCKET FOR MINNESOTA RULES CHAPTER 1346

Dear Ms. Spuckler:

I respectfully request a hearing on the proposed changes to Minnesota Rules Chapter 1346 (part of R-04515).

I additionally request that the proposals to allow ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 be removed from both Chapter 1346 and also Chapter 1309 (by reference).

Introducing ASHRAE 62.2 as an alternative path to Minnesota Rules Chapter 1322 would significantly weaken the ventilation provisions of Minnesota's code. These provisions have been successfully implemented by the market place and have provided significant indoor air quality and energy-savings benefits to Minnesota purchasers of new homes.

The proposal to all ASHRAE 62.2 will increase ventilation fan energy use by removing Chapter 1322's cost-effective fan efficacy requirements for fans.

The justification in the SONAR for adoption of 62.2 is misleading and erroneous:

1. The SONAR asserts that "ASHRAE 62.2 has the same performance requirements for ventilation as Minnesota Rules, Chapter 1322" as an argument to permit the use of ASHRAE 62.2 as an alternate compliance path. In fact, the performance requirements of 62.2 and Chapter 1322 are very different, and 62.2-compliant systems under-perform Chapter 1322 compliant systems across over a dozen criteria.
2. The SONAR claims incorrectly that "Minnesota Rules, chapter 1322, and ASHRAE 62.2 have the same requirements for ventilation air change rates, ventilation controls, and ventilation system installation." The two are different in at least four areas:
    a. Installation requirements: ASHRAE 62.2 does not require installation of balanced systems with distribution and also field verification of local exhaust flow rates, but Chapter 1322 does.
    b. Control of Ventilation: Chapter 1322 requires all ventilation controls to be readily accessible, so that occupants' have full control over their Indoor Air Quality (IAQ) systems, but ASHRAE 62.2 does not.
    c. Air change rates:
        i. ASHRAE 62.2 permits ventilation rates to go to zero, and in some cases requires no mechanical ventilation. Chapter 1346 as it stands requires a minimum of 40 cfm.
        ii. Chapter 1322 requires roughly double the ventilation air change rates for unfinished basements than does ASHRAE 62.2.

These are not just technical or editorial differences. They represent a significant step backwards for the indoor air quality and health of Minnesota home-buyers. See the attachment for the many other differences.

The proposed text in for Chapter 1346.0050 adds the statement that "ASHRAE 62.2 is not subject to frequent change". Actually, ASHRAE 62.2 is a rapidly changing target. In ASHRAE parlance this is a "continuous maintenance" standard, changes rapidly, and already has been replaced by an updated standard with many significant changes. ASHRAE 62.2-2016 no longer represents the best thinking on the subject of residential ventilation.

Minnesota displayed leadership in residential IAQ and ventilation efficiency when it adopted the current relevant provisions in Chapters 1322 and 1349. Now, model codes and standards around the nation are catching up to Minnesota's leadership, validating the effectiveness and good sense of the current provisions.

1. ASHRAE 90.1-2019 Section 6.5.6.1 now encourages balanced ventilation systems by requiring dwelling units following the prescriptive path to use H/ERVs in most climate zones, including Minnesota's climate zone 6 and 7.
2. The 2021 IECC is expected to have identical language to ASHRAE 90.1-2019 for dwelling unit H/ERVs based on the action taken at the Group B public comment hearings in October 2019 (proposal CE133 garnered support from 89% of voting members at the hearings). Additionally, ASHRAE 62.2-2019 addendum y, which recently completed a public review, proposes to require supply or balanced systems for dwelling units.
3. New York's Stretch Code now requires dwelling units to have balanced ventilation in climate zone 4 and balanced ventilation with heat recovery in climate zone 5 and 6.
4. Washington State is proposing to require balanced ventilation with heat recovery for dwelling units in its next energy code.

If ASHRAE 62.2 is allowed as an alternative compliance path, ventilation energy use for dwelling units in Minnesota will increase and residential IAQ will decline.

Therefore, I request ASHRAE 62.2 as an alternative compliance path under Chapter 1346 and, by reference, Chapter 1309.

Thank you for your consideration and acceptance of my comment.

Sincerely,

Matthew Friedlander
VP Research & Development
RenewAire LLC
mfried@renewaire.com
608-850-2270

Attachment: Differences between MN Rules and ASHRAE 62.2-2016, and analysis of impacts of proposed rule changes

Attachment: Differences between MN Rules and ASHRAE 62.2-2016, and analysis of impacts of proposed rule changes

MN Rules, Chapter 1322 Ventilation Requirements	Comparable ASHRAE 62.2-2016 Provisions	What happens if 62.2 is allowed as an alternative compliance path in Minnesota?
R403.5: **Balanced outdoor air ventilation** is required.	Allows for exhaust, supply, or balanced outdoor air ventilation.	A single bathroom exhaust fan to be used to provide the outdoor air requirements, depressurizing the dwelling unit. Depressurization can compromise air quality and occupant health by introducing contaminated air from adjacent spaces such as garages, attics, crawlspaces, as well as facilitating entrainment of radon gas where present below the foundation. Radon is the primary cause of lung cancer among non-smokers in the U.S., according to the EPA.
R403.5.3: Sets a **minimum continuous ventilation rate** at 40 cfm.	No minimum ventilation rate	In some dwelling units, no mechanical ventilation at all would be required.
R403.5.6.1.2: **Temper outdoor air** provided directly to habitable spaces.	No requirement to temper outdoor air	Introducing un-tempered outdoor air can be very uncomfortable conditions indoors, so occupants simply disable their ventilation system. The result is worse indoor air quality. In winter, expect too much moisture and potential for condensation and mold growth which is bad for Indoor Air Quality (IAQ) and ultimately compromise a home's structural integrity. It is easy to satisfy the requirement to temper outdoor air by specifying a Heat or Energy Recovery Ventilator (H/ERV), and this saves large amounts of energy in the cold Minnesota climate. ASHRAE 90.1 and the 2021 IECC are likely to require H/ERVs for dwelling units in climate zones 6 and 7 (see 2019 Section 6.5.6.1). Minnesota has led the nation in provisions for energy-efficient ventilation, and would vacate this leadership role just as the model codes are beginning to follow its lead.
R403.5 **Ventilation of conditioned, unfinished basements:** outdoor air, or a minimum of one supply and one return duct, must be provided.	No requirement for unfinished spaces.	For homes built on unfinished basements the ventilation rate would be reduced by up to 50% for homes on unfinished basements. Future versions 62.2 have addressed this problem, but not the 2016 version.
R403.5: **Ventilation of conditioned crawl spaces:** outdoor air, or a	No requirement for crawlspaces.	Conditioned crawl spaces would not be ventilated.

MN Rules, Chapter 1322 Ventilation Requirements	Comparable ASHRAE 62.2-2016 Provisions	What happens if 62.2 is allowed as an alternative compliance path in Minnesota?
minimum of one supply and one return duct, must be provided.		
R403.5: Preventing distribution short-circuiting: supply and return ducts are used to meet ventilation requirement for basement, must be separated by ½ the diagonal dimension of the basement.	No requirement for distribution in basements	Without minimum separation distances for supply and return ducts, short circuiting of ventilation air can result, and the ventilation system does not work.
Table R403.5.1: establishes minimum **Fan efficacy** requirements.	None	Energy required to operate ventilation systems could increase significantly requirement for fan efficacy. The proposed deregulation of energy use of ventilation systems is contrary to Minnesota Statutes Section 216H.02, Greenhouse Gas Emissions Control, Next Generation Act, that establishes GHG emissions reductions goals for the state, since energy efficiency is one of the most cost-effective means to achieve GHG savings.
R403.5.2: **Extra ventilation capacity**: the "total" ventilation flow rate must be twice the continuous outdoor air rate, so extra ventilation capacity is available.	No "total ventilation" requirements; however, there are requirements for local exhaust in addition to outdoor air requirements.	More study would be needed to determine the effects of reducing the ventilation rate on indoor air quality in Minnesota dwelling units.
403.5.6.1: Outdoor air must be **distributed** to each habitable space.	No distribution requirements; a single bathroom exhaust fan located in a remote corner of the home meets the standards.	Ventilation "systems" consisting of a single exhaust fan located in a remote corner of the home (such as the master bedroom) would be accepted, but could provide little to no air quality benefit in other areas of the home (e.g. children's bedrooms).
R403.5.9: In most cases **prohibits simultaneous** connection of both supply and return ventilation air ducts to a forced air circulation system.	No limitations.	Poor installation methods for integrating balanced systems with forced air circulation systems will be allowed: these ventilation systems don't provide acceptable IAQ.
R403.5.10: **Backdraft dampers** are required on supply and exhaust ventilation systems.	No requirements	Energy use will increase because backdraft dampers reduce air leakage from the building when ventilation systems are not operating.

MN Rules, Chapter 1322 Ventilation Requirements	Comparable ASHRAE 62.2-2016 Provisions	What happens if 62.2 is allowed as an alternative compliance path in Minnesota?
R403.5.14.4: Readily-accessible **Ventilation System Controls.**	Not required in all cases to be readily accessible.	If occupants can't easily control their ventilation systems, they are more likely simply to shut them off.
R403.5.6.l.3: In-situ **airflow verification** required for all airflows greater than 30 cfm (including exhaust-only and H/ERVs) and available to building official upon request.	In-situ flow verification not required for local exhaust systems. No requirement for making test results available to building official.	Site verification of flow rates confirms that systems are installed and operating properly. Local exhaust systems are a critical component of providing acceptable IAQ. Prescriptive duct sizing can be an effective alternative to flow-rate verification, but guidelines must be provided to ensure that alternative methods are properly executed.
R403.5.7: **Maximum intermittent ventilation noise level**: 2.5 sones.	Maximum intermittent ventilation sone level: 3 sones. No requirement for exhaust fans with a minimum airflow setting exceeding 400 cfm.	The main reason that range hoods are not operated is because occupants believe they are "too noisy" (study by LBNL). MN's current requirement for lower sone rates than 62.2 supports operation of quiet range hoods and consequently, better indoor air quality for occupants.