DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: Kevin Johnson (Staff changes)

Email address: kevin.johnson@ci.stcloud.mn.us

Telephone number: 320-255-7233

Firm/Association affiliation, if any: City of St. Cloud

Code or rule section to be changed: 404.1

Date: 06/28/2024

Model Code: 2024 IMC

Code or Rule Section: 404.1

Topic of proposal: Enclosed parking garages clarification

Intended for Technical Advisory Group ("TAG"): 1346 Mechanical code

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General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☐	☒
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☐	☒
F. Would this proposed change be appropriate through the ICC code development process?	☐	☒

Proposed Language

1. The proposed code change is meant to:

   ☐ change language contained the model code book? If so, list section(s).

   ☒ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   MR 1346.0404.1

   ☐ delete language contained in the model code book? If so, list section(s).

   ☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☐ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
   no

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

   404.1 **Enclosed Parking Garages.** Mechanical ventilation systems for enclosed parking garages shall operate automatically upon detection of certain gas concentrations. Enclosed parking garages shall be equipped with a carbon monoxide (CO) detector and a nitrogen dioxide (NO2) detector. The mechanical ventilation system shall activate upon a detection of a CO level of 25 parts per million(ppm) or greater, a NO2 level of 3 ppm or greater, or both. Such detectors shall be listed in accordance with UL 2075 and installed in accordance with their listing and manufacturer's instructions.
   ~~Note: MN. Rules 5205.0200 requires ventilation~~ For the purposes of this section, garages housing 6 or more vehicles according to MNOSHA rules are considered enclosed parking garages.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
   no

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)
   The current Minnesota amendment and the base code does not clearly define what is a PARKING GARAGE. The code change does not require enforcement of MNOSHA rules, only that there is reference to 6 or more vehicles in such rules.

2. Why is the proposed code change a reasonable solution?
   It gives the building owner, architect, engineer and code official direction on when CO and NO2 detection is required.

3. What other factors should the TAG consider?
   None

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.
   Potential decrease. A detection system could be required for a small garage as the code section is now written.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.
   None.

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.
   None.

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.
   None foreseen

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.
   No

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?
   Building owners and designers

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.
   NO

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?
   No change

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.
   ~~No~~ MNOSHA Rules

   M~~N. Rules 5205.0200 Using this rule for reference.~~

***Note: The information you provide in this code change proposal form is considered Public Data and used by the TAG to consider your proposed modification to the code. Any code change proposal form submitted to DLI may be reviewed at public TAG meetings and used by department staff and the Office of Administrative Hearings to justify the need and reasonableness of any proposed rule draft subject to administrative review and is available to the public.

****Note: Incomplete forms will be returned to the submitter with instruction to complete the form. Only completed forms will be accepted and considered by the TAG. The submitter may be asked to provide additional information in support of the proposed code change.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: Staff

Email address: chris.rosival@state.mn.us

Telephone number: 651-284-5510

Firm/Association affiliation, if any: DLI

Code or rule section to be changed: 1346.0506.4

Intended for Technical Advisory Group ("TAG"):

Date: July 8, 2024

Model Code: 2024 IMC

Code or Rule Section: MR1346.0506.4

Topic of proposal: Ducts

General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☐	☒
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☐	☒
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

   ☐ change language contained the model code book? If so, list section(s).

   ☒ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   1346.0506.4.1 & 1346.0506.4.1.1

   ☐ delete language contained in the model code book? If so, list section(s).

   ☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☐ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
   No

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.
   1346.506.4.1 Ducts.
   Ducts and plenums serving Type II hoods shall be constructed of rigid metallic materials. Duct construction, installation, bracing, and supports shall comply with Chapter 6. Ducts subject to positive pressure or conveying moisture-laden air, or both, ~~and ducts conveying waste-heat-laden air~~ shall be tested pursuant to Section 506.4.1.1.
   1346.506.4.1.1 Testing.
   Ducts serving Type II hoods shall be tested in accordance with ASHRAE 154 as required in Chapter 5 ~~ments~~ for Type I duct leakage testing.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
   No

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)
   Removing "ducts conveying waste-heat-laden air" was the intent in past code cycles. ASHRAE 154 testing requirements are for Type I ducts. ASHRAE 154 does not require testing of Type II ducts. There is a difficult code path regarding testing of Type II ducts as the amendment is currently written.
2. Why is the proposed code change a reasonable solution?
   Clarity is needed to follow code language.
3. What other factors should the TAG consider?
   None

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.
   No change

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.
   No change

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.
   No change

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.
   No change

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.
   No change

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?
   Commercial kitchen HVAC installers.

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.
   No.

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?
   ASHRAE 154 is not clear on the testing requirements of Type II ducts.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.
   None that I am aware of.

***Note: The information you provide in this code change proposal form is considered Public Data and used by the TAG to consider your proposed modification to the code. Any code change proposal form submitted to DLI may be reviewed at public TAG meetings and used by department staff and the Office of Administrative Hearings to justify the need and reasonableness of any proposed rule draft subject to administrative review and is available to the public.

****Note: Incomplete forms will be returned to the submitter with instruction to complete the form. Only completed forms will be accepted and considered by the TAG. The submitter may be asked to provide additional information in support of the proposed code change.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: John G. Smith, P.E.

Date: July 1, 2024

Email address: jgsmith76@gmail.com

Model Code: 2024 IMC

Telephone number: 612 867 3145

Code or Rule Section: 507

Firm/Association affiliation, if any: ACEC

Code or rule section to be changed: Section 507 – Commercial Kitchen Hoods

Intended for Technical Advisory Group ("TAG"): 1346 Mechanical and Fuel Gas Code

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General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☒	☐
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☒	☐
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

   X☐ change language contained the model code book? If so, list section(s).

   Section 507 – Commercial Kitchen Hoods, 507.2.10.1 Extra-heavy-duty cooking appliances, 507.2.10.2 Heavy-duty cooking appliances, 507.2.10.3 Medium-duty cooking appliances, 507.3.4.1 Light-duty cooling appliances.

   X☐ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☐ delete language contained in the model code book? If so, list section(s).

   X☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   1346.0507 Commercial Kitchen Hoods.

   ☐ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
   No

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

   507.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of this section, NFPA 96 and ASHRAE 154. Hoods shall be Type I or Type II and shall be designed to capture and confine cooking vapors and residues. A Type I hood shall be installed at or above *appliances* in accordance with Section 507.2. A Type II hood shall be installed at or above *ap*pliances in accordance with Section 507.3. Where any cooking *appliance* under a single hood requires a Type I hood, a Type I hood shall be installed. Where a Type II hood is required, a Type I or Type II hood shall be installed.

   507.2.10.1 Extra-heavy-duty cooking appliances. Except where hoods are UL710 listed with lower net airflow, the ~~The~~ minimum net airflow for hoods used for extra-heavy-duty cooking appliances shall be determined as follows:

Type of Hood	CFM per lineal foot of hood
Backshelf/pass-over	Not allowed
Double island canopy (per side)	550
Eyebrow	Not allowed
Single-island canopy	700
Wall-mounted canopy	550

   507.2.10.2 Heavy-duty cooking appliances. Except where hoods are UL710 listed with lower net airflow, the ~~The~~ minimum net airflow for hoods used for heavy-duty cooking appliances shall be determined as follows:

Type of Hood	CFM per lineal foot of hood
Backshelf/pass-over	400
Double island canopy (per side)	400
Eyebrow	Not allowed
Single-island canopy	600
Wall-mounted canopy	400

   507.2.10.3 Medium-duty cooking appliances. Except where hoods are UL710 listed with lower net airflow, the ~~The~~ minimum net airflow for hoods used for medium-duty cooking appliances shall be determined as follows:

Type of Hood	CFM per lineal foot of hood
Backshelf/pass-over	300
Double island canopy (per side)	300
Eyebrow	250
Single-island canopy	500
Wall-mounted canopy	300

   507.4.1 Light-duty cooking appliances. Applicable to Type I or Type II kitchen hoods. Except where hoods are UL710 listed with lower net airflow, the ~~The~~ minimum net airflow for hoods used for light-duty cooking appliances shall be determined as follows:

Type of Hood	CFM per lineal foot of hood
Backshelf/pass-over	250
Double island canopy (per side)	250

Eyebrow	250
Single-island canopy	400
Wall-mounted canopy	200

Chapter 15 REFERENCED STANDARDS

Under “ASHRAE” add:

154-2022: Ventilation for Commercial Cooking Operations

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.

   Yes – it should replace 1346.0507 with revised model code Section 507 wording.

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)

   The proposed change deletes MN 1346 Section 507 and uses the IMC Section 507 subsections which identify the minimum airflow requirements for kitchen hoods. The proposed changes to the IMC add that lower minimum airflows are allowed where the hoods are UL710 listed, which is a comprehensive testing process to assure acceptable kitchen hood performance. It also includes kitchen hood exhaust criteria for Type I and Type II hoods, which is not in the current MN 1346 Sectipn 507.

2. Why is the proposed code change a reasonable solution?

   Yes. It identifies the minimum airflow requirements for different kitchen hood sypes, and also accepts lower airflow values when hoods are UL710 listed.

3. What other factors should the TAG consider?

   The current 1346.0507 does not identify the minimum fume hood airflow requirements. It does reference NFPA 96 and ASHRAE 154 which have minimal airflow information. The proposed changes clarify the airflow requirements.

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.

   No changes.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.

   Will make enforcement which may reduce time from code officials.

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.
   No

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?
   Design engineers, kitchen consultante, contractors, code officials.

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.

   No.

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?

   Confusion of kitchen exhaust requirements, potential failure of kitchen hood capture rates.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.

   No.

***Note: Incomplete forms may be returned to the submitter with instruction to complete the form. Only completed forms can considered by the TAG.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CH ANGE

PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: John G. Smith, P.E. (Staff changes) *Date:* July 1, 2024

Email address: jgsmith76@gmail.com *Model Code:* 2024 IMC

Telephone number: 612 867 3145 *Code or Rule Section:* 507

Firm/Association affiliation, if any: ACEC

Code or rule section to be changed: Section 507 – Commercial Kitchen Hoods

Intended for Technical Advisory Group ("TAG"): 1346 Mechanical and Fuel Gas Code

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General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☒	☐
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☒	☐
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

☒ change language contained the model code book? If so, list section(s).

Section 507 – Commercial Kitchen Hoods, 507.2.10.1 Extra-heavy-duty cooking appliances, 507.2.10.2 Heavy-duty cooking appliances, 507.2.10.3 Medium-duty cooking appliances, 507.3.4.1 Light-duty cooling appliances.

☒ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

☐ delete language contained in the model code book? If so, list section(s).

☒ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
1346.0507 Commercial Kitchen Hoods.

☐ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
   No

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

507.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of this section, NFPA 96 and ASHRAE 154. Hoods shall be Type I or Type II and shall be designed to capture and confine cooking vapors and residues. A Type I hood shall be installed at or above *appliances* in accordance with Section 507.2, NFPA 96 and ASHRAE 154. A Type II hood shall be installed at or above *ap*pliances in accordance with Section 507.3, NFPA 96 and ASHRAE 154. Where any cooking *appliance* under a single hood requires a Type I hood, a Type I hood shall be installed. Where a Type II hood is required, a Type I or Type II hood shall be installed.

507.2 Unlisted Type I hood airflow rates. As an alternative to ASHRAE 154 for existing unlisted Type I hoods, the following airflow rates shall be used for *light-duty, medium-duty, heavy-duty* and *extra-heavy-duty cooking appliances*. Testing, balancing, capture and containment tests shall be verified by the code official as required in ASHRAE 154.

~~**507.2.10.1**~~ **507.2.1 Extra-heavy-duty cooking appliances**. ~~Except where hoods are UL710 listed with lower net airflow, the The~~ The minimum net airflow for hoods used for extra-heavy-duty cooking appliances shall be determined as follows:

Type of Hood	CFM per lineal foot of hood
Backshelf/pass-over	Not allowed
Double island canopy (per side)	550
Eyebrow	Not allowed
Single-island canopy	700
Wall-mounted canopy	550

~~**507.2.10.2**~~ **507.2.2 Heavy-duty cooking appliances**. ~~Except where hoods are UL710 listed with lower net airflow, the The~~ The minimum net airflow for hoods used for heavy-duty cooking appliances shall be determined as follows:

Type of Hood	CFM per lineal foot of hood
Backshelf/pass-over	400
Double island canopy (per side)	400
Eyebrow	Not allowed
Single-island canopy	600
Wall-mounted canopy	400

~~**507.2.10.3**~~ **507.2.3 Medium-duty cooking appliances**. ~~Except where hoods are UL710 listed with lower net airflow, the The~~ The minimum net airflow for hoods used for medium-duty cooking appliances shall be determined as follows:

Type of Hood	CFM per lineal foot of hood
Backshelf/pass-over	300
Double island canopy (per side)	300
Eyebrow	250
Single-island canopy	500
Wall-mounted canopy	300

~~**507.4.1**~~ **507.2.4 Light-duty cooking appliances**. ~~Applicable to Type I or Type II kitchen hoods. Except where hoods are UL710 listed with lower net airflow, the~~ ~~The~~ The minimum net airflow for hoods used for light-duty cooking appliances shall be determined as follows:

Type of Hood	CFM per lineal foot of hood
Backshelf/pass-over	250
Double island canopy (per side)	250
Eyebrow	250
Single-island canopy	400
Wall-mounted canopy	200

~~**Chapter 15 REFERENCED STANDARDS**~~

~~Under "ASHRAE" add:~~

~~**154-2022**: Ventilation for Commercial Cooking Operations~~

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.

   Yes – it should replace 1346.0507 with revised model code Section 507 wording.

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)

   The proposed staff changes allow the code official to specify minmum airflow rates on unlisted hoods. The proposed change also delete~~s~~ MN 1346 Section 507 and uses the IMC Section 507 subsections which identify the minimum airflow requirements for kitchen hoods. ~~The proposed changes to the IMC add that lower minimum airflows are allowed where the hoods are UL710 listed, which is a comprehensive testing process to assure acceptable kitchen hood performance.~~ It also includes kitchen hood exhaust criteria for Type I and Type II hoods, which is not in the current MN 1346 Section 507.

2. Why is the proposed code change a reasonable solution?

   Yes. It identifies the minimum airflow requirements for different kitchen hood types~~, and also accepts lower airflow values when hoods are UL710 listed~~.

3. What other factors should the TAG consider?

   The current 1346.0507 does not identify the minimum fume hood airflow requirements. It does reference NFPA 96 and ASHRAE 154 which have minimal airflow information. The proposed changes clarify the airflow requirements.

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.

   No changes.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.

   Will provide more enforcement options on unlisted hoods which may reduce time from code officials.

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.
   No

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?
   Design engineers, kitchen consultante, contractors, code officials.

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.

   No.

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?

   Confusion of kitchen exhaust requirements, potential failure of kitchen hood capture rates.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.

   No.

John Smith language
Staff changes, model code
Staff changes to model code

***Note: Incomplete forms may be returned to the submitter with instruction to complete the form. Only completed forms can considered by the TAG.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: John G. Smith, P.E.

Date: July 1, 2024

Email address: jgsmith76@gmail.com

Model Code: 2024 IMC

Telephone number: 612 867-3145

Code or Rule Section: 508

Firm/Association affiliation, if any: ACEC

Code or rule section to be changed: Section 508 – Commercial Kitchen Makeup Air

Intended for Technical Advisory Group ("TAG"): 1346 Mechanical and Fuel Gas Code

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General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☒	☐
B. Is the proposed change required due to climatic conditions of Minnesota?	☒	☐
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☒	☐
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

   X☐ change language contained the model code book? If so, list section(s).
   Section 508 – Commercial Kitchen Makeup Air, 508.1.1 Makeup air temperature

   ☐ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☐ delete language contained in the model code book? If so, list section(s).

   X☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   1345.508.1 Makeup Air, 508.1.1 Makeup air temperature

   ☐ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
   No

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

   ~~**508.1.1 Makeup air temperature.** HVAC systems that serve the kitchen space shall have the additional capacity necessary for the latent and sensible loads that are introduced by the *makeup air* supplied to the kitchen space, or the *makeup air* shall be conditioned by dedicated systems such that the difference in the temperature between the *makeup air* supplied to the kitchen space and the design setpoint temperature in the kitchen space is not greater than 10°F (6°C).~~

   ~~**Exception:** *Makeup air* supplied to a compensating hood shall not be required to be conditioned.~~

   508.1.1 Makeup air temperature. HVAC systems that serve the kitchen space shall have the additional capacity necessary for the latent and sensible loads that are introduced by the *makeup air* supplied to the kitchen space. Where provided through dedicated *makeup air* systems, the *makeup air* temperature shall not be less than 50°F (10°C) nor 10°F (6°C) greater than the kitchen space design temperature setpoint.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.

   No

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)

   A very typical makeup air supply temperature is about 55°F when used for air conditioning the kitchen area. Setting the lower limit to 50°F provides some flexability in the temperature setpoint. Establishing the lower temperature limit will prevent designing systems with no tempering of the makeup air, which can cause introduction of cold outdoor air to the hood, thereby potentially causing “rain” due to condensation, or even in some cases cause snow under the hoods. This moistuire can fall on food being prepared under the hoods.

   Limiting the maximum temperature to 10°F greater than the kitchen space temperature setpoint will require some tempering of the makeup air to minimize overheating during periods of very warm outdoor conditions.

2. Why is the proposed code change a reasonable solution?

   It provides design conditions which will minimize kitchen temperature issues as well as providing more reasonable space temperatures for kitchen workers.

3. What other factors should the TAG consider?
   None

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.

   It will not change costs compared to current code requirements.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.

   Should bring more clarity to design requirements, thereby making enforcement easier.

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.
   No

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?

   Design engineers, contractors, owners, code officials.

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.

   No

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?

   Potential problems with condensation or snow dropping onto food being cooked under a kitchen hood, overheating of kitchen spaces.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.

   OSHA has requirements for space temperatures and allowable work time in very hot spaces.

***Note: Incomplete forms may be returned to the submitter with instruction to complete the form. Only completed forms can considered by the TAG.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: Staff

Email address: chris.rosival@state.mn.us

Telephone number: 651-284-5510

Firm/Association affiliation, if any: DLI

Code or rule section to be changed: 508.1.1

Intended for Technical Advisory Group ("TAG"):

Date: July 8, 2024

Model Code: 2024 IMC

Code or Rule Section: 508

Topic of proposal: Makeup air

General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☒	☒
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☐	☒
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

   ☒ change language contained the model code book? If so, list section(s).
   508.1 and 508.1.1

   ☒ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   1346.0508.1 and 1346.0508.1.1

   ☐ delete language contained in the model code book? If so, list section(s).

   ☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☐ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
   No

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

   508.1 Makeup air. Makeup air shall be supplied during the operation of commercial kitchen exhaust systems that are provided for commercial cooking appliances. The amount of makeup air supplied to the building from all sources shall be approximately equal to the amount of exhaust air for all exhaust systems for the building. The makeup air shall not reduce the effectiveness of the exhaust system. Makeup air shall be provided by ~~gravity or~~ mechanical means ~~or both. Mechanical makeup air systems~~ and shall be automatically controlled to start and operate simultaneously with the exhaust system. Makeup air intake opening locations shall comply with Section 401.4.

   508.1.1 Makeup air temperature. HVAC systems that serve the kitchen space shall have the additional capacity necessary for the latent and sensible loads that are introduced by the *makeup air* supplied to the kitchen space. ~~, or t~~ The *makeup air* shall be conditioned by dedicated systems according to the following:

   1. Heating temperature of *makeup air* shall not be less than 50°F (10°C)

   2. If air cooling or evaporatively cooled air (if any) is provided, temperature of the *makeup air* shall not be more than ~~such that the difference in the temperature between the *makeup air* supplied to the kitchen space and the design setpoint temperature in the kitchen space is not greater than~~ 10°F (6°C) greater than the kitchen space design setpoint temperature as specified by the mechanical designer of record.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
   No

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)
   Tempering of the air for commercial kitchens is addressed in model code regarding 10°F (6°C).

2. Why is the proposed code change a reasonable solution?
   Providing tempering of air for workers and food safety.

3. What other factors should the TAG consider?
   None

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.
   If cooling is provided in the kitchen, the cost might increase by requiring the makeup air system if cooling is not included in original design.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.
   Increased workers and food safety.

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.
   Business owners.

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.
   No change

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.
   No change

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?
   Commercial kitchen HVAC installers, architects, engineers and business owners.

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.
   No.

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?
   Worker safety and food safety concerns.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.
   MNOSHA has requirements for hot temperatures and allotted time for work in such spaces.

***Note: The information you provide in this code change proposal form is considered Public Data and used by the TAG to consider your proposed modification to the code. Any code change proposal form submitted to DLI may be reviewed at public TAG meetings and used by department staff and the Office of Administrative Hearings to justify the need and reasonableness of any proposed rule draft subject to administrative review and is available to the public.

****Note: Incomplete forms will be returned to the submitter with instruction to complete the form. Only completed forms will be accepted and considered by the TAG. The submitter may be asked to provide additional information in support of the proposed code change.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: Russ Landry, PE

Date: 7/15/24

Email address: rlandry@mncee.org

Model Code: 2020 IMC

Telephone number: 612-327-1817

Code or Rule Section: 603.9

Firm/Association affiliation, if any: Center for Energy and Environment (CEE)

Topic of proposal: Duct joints, seams & connections

Code or rule section to be changed: 603.9

Intended for Technical Advisory Group ("TAG"): Mechanical and Fuel Gas Code

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General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☒	☐
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☐	☒
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

☒ change language contained the model code book? If so, list section(s).
Yes, change to 603.9 as drafted below

☐ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

☒ delete language contained in the model code book? If so, list section(s).
Yes, change to 603.9 as drafted below

☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

☒ add new language that is not found in the model code book or in Minnesota Rule.
Yes, change to 603.9 as drafted below

Summary

This proposal is designed to address a current inconsistency between the state's mechanical and energy codes regarding duct sealing requirements. The duct sealing requirements in the model mechanical (International Mechanical Code [IMC] and the model commercial energy code (ASHRAE 90.1) have overlapping scope and are very similar, but the current and new model energy code requirements are more stringent—especially regarding low pressure duct systems. By establishing a direct link and adopting the commercial energy code as the sole standard, we will reduce complexity and eliminate ambiguity. This change will enhance clarity and facilitate better compliance for all stakeholders.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
   While it is not required, this code change would support work being done as part of Minnesota Statute 326B.106, which states "Beginning in 2024, the commissioner shall act on the new model commercial energy code by adopting each new published edition of ASHRAE 90.1 or a more efficient standard. The commercial energy code in effect in 2036 and thereafter must achieve an 80 percent reduction in annual net energy consumption or greater, using the ASHRAE 90.1-2004 as a baseline. The commissioner shall adopt commercial energy codes from 2024 to 2036 that incrementally move toward achieving the 80 percent reduction in annual net energy consumption. By Jan 15 of the year following each new code adoption, the commissioner shall make a report on progress under this section to the legislative committees with jurisdiction over the energy code."

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

603.9 Joints, seams and connections.

Longitudinal and transverse joints, seams and connections in metallic and nonmetallic ducts shall be constructed as specified in SMACNA *HVAC Duct Construction Standards—Metal and Flexible* and NAIMA *Fibrous Glass Duct Construction Standards*. Joints, longitudinal and transverse seams and connections in ductwork shall be securely fastened and sealed with welds, gaskets, mastics (adhesives), mastic-plus-embedded-fabric systems, liquid sealants or tapes. ~~Tapes and mastics used to seal fibrous glass ductwork shall be listed and labeled in accordance with UL 181A and shall be marked "181 A-P" for pressure-sensitive tape, "181 A-M" for mastic or "181 A-H" for heat-sensitive tape. Tapes and mastics used to seal metallic and flexible air ducts and flexible air connectors shall comply with UL 181B and shall be marked "181 B-FX" for pressure-sensitive tape or "181 B-M" for mastic.~~ Duct connections to flanges of air distribution system equipment shall be sealed and mechanically fastened. Mechanical fasteners for use with flexible nonmetallic air ducts shall comply with UL 181B and shall be marked "181 B-C." Closure systems used to seal all ductwork shall be installed in accordance with the manufacturer's instructions. Ductwork and plenums shall be constructed, sealed, and leak-tested according to Minnesota Commercial Energy Code requirements.

> ~~**Exception:** For ducts having a static pressure classification of less than 2 inches of water column (500 Pa), additional closure systems shall not be required for continuously welded joints and seams and locking-type joints and seams. This exception shall not apply to snaplock and button-lock type joints and seams located outside of conditioned spaces.~~

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
   No

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)
   Minnesota's Commercial Energy Code and Mechanical and Fuel Gas Code currently both have similar requirements for duct sealing, but the energy code requirements are more stringent. This

leads to confusion in the industry and many projects we have reviewed for commercial energy code compliance have specifications based on the mechanical code's duct leakage requirements and do not meet the overlapping commercial energy code requirements. The same overlapping language is repeated in the model code versions that will be referenced by the next updates to the state's mechanical and commercial energy codes.

2. Why is the proposed code change a reasonable solution?
   The primary reason the proposed code change is a reasonable solution is it reduces complexity in complying with the code, which would lead to higher compliance rate and ease throughout the process.

3. What other factors should the TAG consider?
   Current Duct Sealing and Leakage Testing in ASHRAE 90.1 (2019 and 2022) and the 2024 Minnesota Commercial Energy Code:

6.4.4.2 Ductwork and Plenum Leakage

6.4.4.2.1 Duct Sealing

Ductwork and all plenums with pressure class ratings shall be constructed to *Seal Class A*. Openings for rotating shafts shall be sealed with bushings or other devices that seal off air leakage. Pressure-sensitive tape shall not be used as the primary sealant unless it has been certified to comply with UL-181A or UL-181B by an independent testing laboratory, and the tape is used in accordance with that certification. All connections shall be sealed, including but not limited to spin-ins, taps, other branch connections, access *doors*, access panels, and duct connections to *equipment*. Sealing that would void product listings is not required. Spiral lock seams need not be sealed. All duct pressure class ratings shall be designated in the design documents.

6.4.4.2.2 Duct Leakage Tests

Ductwork that is designed to operate at static pressures in excess of 3 in. of water and all *ductwork* located outdoors shall be leak-tested according to industry-accepted test procedures (see Informative Appendix E). Representative sections totaling no less than 25% of the total installed duct area for the designated pressure class shall be tested. All sections shall be selected by the *building* owner or the designated representative of the *building* owner. Positive pressure leakage testing is acceptable for negative pressure *ductwork*. The maximum permitted duct leakage shall be

$$L_{max} = C_L P^{0.65} \quad (4)$$

where

L_{max} = maximum permitted leakage, cfm per 100 ft^2 of duct surface area
C_L = 4, duct leakage class, cfm per 100 ft^2 of duct surface area per in. of $water^{0.65}$
P = test pressure, which shall be equal to the design duct pressure class rating, in. of water

**The most critical difference is the omission of the IMC's exception for ducts having a static pressure class of less than 2 inches of water column (500 Pa)*

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.
   The proposed code change should not impact costs as the current and proposed model energy code requirements for duct sealing are the same. If anything, the code change proposal may decrease labor and rework cost impacts by making compliance with both codes more straightforward.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.
   N/A

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.
   N/A

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.
   Compliance costs should decrease with this code change proposal as complexity is reduced. This will make it easier and more straightforward for the code to be complied with during the construction and inspection process. It will also reduce any potential rework or delays related to incompliance.

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.
   No

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?
   Mechanical

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.
   An alternative solution would be to have the commercial energy code refer to the mechanical code's duct sealing requirements in lieu of the ASHRAE 90.1 duct sealing requirements. This approach would weaken the stringency compared to the current commercial energy code and thereby work against the statutory requirement for each code cycle to work towards 80% reduction from ASHRAE 90.1-2004 by 2036

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?
   Compliance challenges, rework, potential loss of labor hours due to time spent reviewing the conflicting requirements (during design/construction side and inspection).

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.
   N/A

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****Note: Incomplete forms will be returned to the submitter with instruction to complete the form. Only completed forms will be accepted and considered by the TAG. The submitter may be asked to provide additional information in support of the proposed code change.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: John G. Smith, P.E.

Date: July 1, 2024

Email address: jgsmith76@gmail.com

Model Code: 2024 IMC

Telephone number: 612 867 3145

Code or Rule Section: 608

Firm/Association affiliation, if any: ACEC

Code or rule section to be changed: Section 608 - Balancing

Intended for Technical Advisory Group ("TAG"): *1346 Mechanical and Fuel Gas Code*

General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☐	☒
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☒	☐
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

   ☒ change language contained the model code book? If so, list section(s).
   Section 608 - Balancing

   ☐ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☐ delete language contained in the model code book? If so, list section(s).

   ☒ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   Revised 1346.0309 of existing mechanical code which deals with air and hydronic balancing

   ☒ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
   No

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

   Delete current 1346.0309 in its entirety and replace with the new proposed language, which modifies IMC Section 608 - Balancing:

   SECTION 608 – BALANCING

   608.1 Balancing. Air distribution, ventilation and exhaust systems shall be provided with means to adjust the system to achieve the design airflow rates and shall be balanced by an approved method. Ventilation air distribution shall be balanced by an approved method and such balancing shall verify that the air distribution system is capable of supplying and exhausting the airflow rates required by Chapter 4. Fan speed shall be adjusted to meet design airflow conditions.

   Exception: Speed adjustment is not required for fan motors rated at one horsepower (0.746 kW) or less.

   608.1.1 Balance Requirements. Air distribution, ventilation and exhaust systems, including air inlets and outlets, shall be balanced to provide airflows within +/- 10% of the design conditions.

   608.1.1.1 VAV Systems. On Variable Air Volume systems, the fan system shall be adjusted to achieve +/- 10% of system design airflow with all VAV boxes in their wide open position. The VAV boxes shall be proportionately balanced. Once the fan system is balanced, then the ductwork served by each VAV box shall be balanced to provide +/- 10% of the design airflow to each of the air outlets or inlets with the VAV box at its maximum controlled open position.

   608.1.2 Systems balancing reports. Systems balancing reports shall verify system performance and shall specify that the minimum amount of outdoor air required in IMC Chapter 4 is provided to the ventilation system. Systems balancing reports shall be submitted to the building official upon request.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
   No

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)
   It clarifies balancing requirements.

2. Why is the proposed code change a reasonable solution?
   It provides clearity to the requirements and follows what is common practice in the industry.

3. What other factors should the TAG consider?
   None

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.

   No changes – clarifies what is already required.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.

   No changes.

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?

   Design engineers, contractors, code officials, building owners.

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.

   No

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?

   Systems may not be properly balanced, resulting in occupant complaints and/or increased system operating costs.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.

   No

***Note: Incomplete forms may be returned to the submitter with instruction to complete the form. Only completed forms can considered by the TAG.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: Brian Stemwedel

Date: 7/8/2024

Email address: Bstemwedel@goldenvalleymn.gov

Model Code: 930

Telephone number: (612)275-1436

Code or Rule Section: 930

Firm/Association affiliation, if any: AMBO

Topic of proposal: *Fans*

Code or rule section to be changed:
Section 202- Definitions, Section 930.1 Large Diameter Ceiling Fans

Intended for Technical Advisory Group ("TAG"):

General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☐	☒
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☐	☒
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

   ☒ change language contained in the model code book? If so, list section(s).
   Section 202- definition of Large-Diameter Ceiling Fan
   Section 930- Large Diameter Ceiling Fans

   ☐ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☒ delete language contained in the model code book? If so, list section(s).
   Section 202

   ☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☒ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.
   Section 202:
   ~~LARGE-DIAMETER CEILING FAN. A ceiling fan that is greater than 7 feet (2134 mm) in diameter. These fans are also referred to as high-volume, low-speed (HVLS) fans.~~
   High Volume, Low Speed (HVLS) Fan. A ceiling fan that is approximately 6 ft (1.8 m) to 24 ft (7.3 m) in diameter with a rotational speed of approximately 30 to 70 revolutions per minute.
   Section 930:
   930.1 General.
   Where provided, ~~large-diameter ceiling fans~~ High Volume, Low Speed (HVLS) fans shall be tested and labeled in accordance with AMCA 230, listed and labeled in accordance with UL 507, and installed in accordance with the manufacturer's instructions. HVLS fans shall be installed in accordance with NFPA 13 regarding diameter, location of adjacent sprinkler heads, vertical clearance, and interlock requirements.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
   NO

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)
   Change the definition to align with NFPA 13-22
   Add to language in Section 930.1 to indicate compliance with NFPA 13 is required.

2. Why is the proposed code change a reasonable solution?
   NFPA 13-22 requires compliance with sprinkler locations relative to fans, vertical clearance to sprinkler heads and interlock with water flow alarm.
   A series of 10 full-scale fire tests and limited-scale testing were conducted to determine the impact of HVLS fan operation on the performance of sprinkler systems. The project, sponsored by the Property Insurance Research Group (PIRG) and other industry groups, was coordinated by the Fire Protection Research Foundation (FPRF).
   Both control mode density area and early suppression fast response sprinklers were tested.
   Successful results were obtained when the HVLS fan was shut down upon the activation of the first sprinkler followed by a 90-second delay. Other methods of fan shutdown were also tested including shutdown by activation of air sampling–type detection and ionization-type smoke detectors.
   Earlier fan shutdown resulted in less commodity damage.
   Please note that NFPA 13-22 requires the HVLS fans to be interlocked to shut down *immediately* upon a waterflow alarm

3. What other factors should the TAG consider?

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.
   Theoretically, compliance with NFPA 13 for sprinklered buildings is already required. Therefore, no cost increases will be associated with this change.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.
   N/A

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.
   N/A

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.
   NO

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.
   N/A

Regulatory Analysis

1. What parties or segments of the industry are affected by this proposed code change?
   Contractors, Code Officials, Designers, and Fire Code Officials

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.
   No

   N/A

***Note: Incomplete forms may be returned to the submitter with instruction to complete the form. Only completed forms can considered by the TAG.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: Kevin Johnson

Date: 07/09/2024

Email address: kevin.johnson@ci.stcloud.mn.us

Model Code: 2024 IMC

Telephone number: 320-255-7233

Code or Rule Section: 1002.4

Firm/Association affiliation, if any: City of St Cloud

Topic of proposal: Remove section

Code or rule section to be changed: 1002.4 Water heater pan required

Intended for Technical Advisory Group ("TAG"): 1346

General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☒	☐
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☐	☒
F. Would this proposed change be appropriate through the ICC code development process?	☐	☒

Proposed Language

1. The proposed code change is meant to:

   ☐ change language contained the model code book? If so, list section(s).

   ☐ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☒ delete language contained in the model code book? If so, list section(s).
   1002.4

   ☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☐ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
   NO

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)
   2020 Minnesota Plumbing Code Section 507.5 addresses drainage pan requirements for a water heater. This section gives direction on when a drain pan is required. It also has construction details including drain size and termination location.

2. Why is the proposed code change a reasonable solution?
   A water heater is any heating appliance or equipment that heats potable water and supplies such water to the potable hot water distribution system. A plumber must be involved installing a water heater and normally is the one who is setting the water heater. The need for the mechanical code to require water heater drain pans is redundant and potentially confusing as to which trade is suppling and inspecting the drain pan.

3. What other factors should the TAG consider?
   The 2024 IMC section 1004.6 Boiler rooms and enclosures – states *Boiler rooms shall be equipped with a floor drain or other approved means for disposing of liquid waste.* This covers the non-potable side of leaky boilers, storage tanks, pipes, etc…

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.
   NO

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.
   NO

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.
   NO

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.
   NO

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.
   NO

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?
   Plumbing and Mechanical contractors

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.
   No other means to achieve this goal.

   There should not be any discord with this change proposal. In this case redundancy is not a virtue.

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?
   The plumber and mechanical contractor may both install a drain pan under a water heater where only one is needed? The mechanical inspector may hold the mechanical contractor accountable for the water heater drain pan that the plumbing contractor install as per the plumbing code?

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.
   NO

   NO

***Note: The information you provide in this code change proposal form is considered Public Data and used by the TAG to consider your proposed modification to the code. Any code change proposal form submitted to DLI may be reviewed at public TAG meetings and used by department staff and the Office of Administrative Hearings to justify the need and reasonableness of any proposed rule draft subject to administrative review and is available to the public.

****Note: Incomplete forms will be returned to the submitter with instruction to complete the form. Only completed forms will be accepted and considered by the TAG. The submitter may be asked to provide additional information in support of the proposed code change.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: Staff

Email address: chris.rosival@state.mn.us

Telephone number: 651-284-5510

Firm/Association affiliation, if any: DLI

Code or rule section to be changed: 1101.1

Intended for Technical Advisory Group ("TAG"):

Date: July 9, 2024

Model Code: 2024 IMC

Code or Rule Section: 1101.1

Topic of proposal: Refrigeration

General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☒	☐
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☒	☐
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

   ☐ change language contained the model code book? If so, list section(s).

   ☐ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☐ delete language contained in the model code book? If so, list section(s).

   ☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☒ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
   Yes **326B.106**

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.
   1101.1 Scope. This chapter shall govern the design, installation, construction and repair of *refrigeration systems*. Permanently installed refrigerant storage systems and other components shall be considered as part of the *refrigeration system* to which they are attached. The use of refrigerants not specified in this code shall be allowed as required in Minnesota Statutes, section 326B.106, subdivision 17.
4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
   No

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)
   Minnesota Statute 326B, Subdivision 17 has requirements for additional refrigerants regulated by the EPA the code cannot prohibit.
2. Why is the proposed code change a reasonable solution?
   To give individuals the resources to follow State statute regarding approval of refrigerants not listed in the current mechanical code
3. What other factors should the TAG consider?

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.
   No Change

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.
   No change

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.
   No change

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.
   No change

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.
   No change

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?
   HVAC designers and consumers

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.
   No.

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.
   EPA has regulations that the State of Minnesota or the code cannot supersede.

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DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: Brian Stemwedel

Email address: Bstemwedel@goldenvalleymn.gov

Telephone number: (612)275-1436

Firm/Association affiliation, if any: AMBO

Code or rule section to be changed: MN Mechanical Code Section 1101.1.1- Refrigerants other than ammonia

Intended for Technical Advisory Group ("TAG"): 1346

Date: 7/8/2024

Model Code: 1101

Code or Rule Section: 1101.1.1

Topic of proposal: Refrigeration

General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☐	☒
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☐	☒
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

   ☒ change language contained in the model code book? If so, list section(s).

   Chapter 11, Section 1101.1.1

   ☐ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☒ delete language contained in the model code book? If so, list section(s).
   1101.1.1

   ☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☒ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

   1101.1.1 Refrigerants other than ammonia. Refrigeration systems using a refrigerant other than ammonia shall comply with this chapter, the International Fire Code, and either ASHRAE 15 or ASHRAE 15.2, as applicable ~~and the International Fire Code~~. Refrigeration systems containing carbon dioxide as the refrigerant shall also comply with IIAR CO2.
   Exception: For all ammonia refrigeration systems, refer to Minnesota Rules, Chapter 5230

   Chapter 15 Referenced Standards: ASHRAE 15.2-2022: Safety Standard for Refrigeration Systems in Residential Applications. 1101.1.1

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.

   This code change proposal adds a reference to ASHRAE 15.2, the installation standard for residential air conditioning systems used for a single dwelling or sleeping unit. This addition addresses a gap created in the code when ASHRAE 15 split its scope between standards 15 and 15.2.

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)

2. Why is the proposed code change a reasonable solution?

3. What other factors should the TAG consider?

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.

   No effect

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.

   N/A

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.

   N/A

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.

   N/A

Regulatory Analysis

1. What parties or segments of the industry are affected by this proposed code change?

   Designers, Code Officials

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.

   N/A

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?

   Increased risk of designing residential systems that are not in compliance with ASHRAE Standards.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.

   N/A

***Note: Incomplete forms may be returned to the submitter with instructions to complete the form. Only completed forms can considered by the TAG.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: John G. Smith, P.E.

Date: July 9, 2024

Email address: jgsmith76@gmail.com

Model Code: 2024 IMC

Telephone number: 612 867 3145

Code or Rule Section: 1101

Firm/Association affiliation, if any: ACEC

Code or rule section to be changed: 1101.1.2 Ammonia Refrigerant

Intended for Technical Advisory Group ("TAG"): 1346 Mechanical and Fuel Gas Code

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General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☒	☐
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☐	☒
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☐	☒
F. Would this proposed change be appropriate through the ICC code development process?	☐	☒

Proposed Language

1. The proposed code change is meant to:

☒ change language contained the model code book? If so, list section(s).

Section 1101.1.2 Ammonia Refrigerant

☐ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

☐ delete language contained in the model code book? If so, list section(s).

☐ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

☐ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.

   No

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

   Section 1101.2 Ammonia refrigerant. *Refrigeration systems* using ammonia refrigerant shall comply with IIAR 2 for system design, IIAR 3 for valves, IIAR 4 for installation, IIAR 5 for start-up, ~~and~~ IIAR 6, and MN Rules 5230.5000 to 5230.5915, and shall not be required to comply with this chapter.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.

   No

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)

   Ammonia refrigeration piping has special requirements and the Minnesota Rules quoted above, which deal specifically with ammonia refrigeration systems, need to be included

2. Why is the proposed code change a reasonable solution?

   It references existing Minnesota Rules regarding ammonia refrigeration systems.

3. What other factors should the TAG consider?

   None

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.

   No changes.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.

   Should be no cost change.

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.

   None.

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.

   No

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?
   Ammonia refrigeration system designers, ammonia refrigeration system contractors, code officials.

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.

   No.

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?

   Ammonia refrigeration systems may be designed and installed which are not in compliance with existing Minnesota rules.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.

   No.

***Note: Incomplete forms may be returned to the submitter with instruction to complete the form. Only completed forms can considered by the TAG.

DEPARTMENT OF LABOR AND INDUSTRY

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

Author/requestor: John G. Smith, P.E.

Date: July 1, 2024

Email address: jgsmith76@gmail.com

Model Code: 2024 IMC

Telephone number: 612 867 3145

Code or Rule Section: 1211

Firm/Association affiliation, if any: ACEC

Code or rule section to be changed: Section 1211 – Hydronic Balancing (New section)

Intended for Technical Advisory Group ("TAG"): *1346 Mechanical and Fuel Gas Code*

General Information	**Yes**	**No**
A. Is the proposed change unique to the State of Minnesota?	☐	☒
B. Is the proposed change required due to climatic conditions of Minnesota?	☐	☒
C. Will the proposed change encourage more uniform enforcement?	☒	☐
D. Will the proposed change remedy a problem?	☒	☐
E. Does the proposal delete a current Minnesota Rule, chapter amendment?	☒	☐
F. Would this proposed change be appropriate through the ICC code development process?	☒	☐

Proposed Language

1. The proposed code change is meant to:

   ☐ change language contained the model code book? If so, list section(s).

   ☐ change language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).

   ☐ delete language contained in the model code book? If so, list section(s).

   ☒ delete language contained in an existing amendment in Minnesota Rule? If so, list Rule part(s).
   Revised 1346.0309 of existing mechanical code which deals with air and hydronic balancing

   ☒ add new language that is not found in the model code book or in Minnesota Rule.

2. Is this proposed code change required by Minnesota Statute? If so, please provide the citation.
   No

3. Provide *specific* language you would like to see changed. Indicate proposed new words with underlining and ~~strikethrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

   Delete current 1346.0309 in its entirety and replace with the new proposed language, which is a new section IMC Section 1211 - Balancing:

   SECTION 1211 – HYDRONIC BALANCING

   1211.1 Balancing. Hydronic systems shall be provided with means to adjust the system to achieve the design flow rates and shall be balanced by an approved method. ~~Where provided, pump speed shall be adjusted to meet design flow conditions.~~

   1211.1 Balance Requirements. Hydronic systems, including terminal devices, shall be balanced. The pump system shall be adjusted to achieve +/- 10% of system design flow with all terminal unit control valves in their wide open position. The terminal units shall be proportionately balanced. Once the pump system is balanced, then the piping served by each terminal unit shall be balanced to provide +/- 10% of the design flow to each of the terminal units with the terminal unit control valve at its maximum controlled open position.

   1211.1.1 Pressure independent control valves: Systems which include pressure independent control valves shall have the terminal unit flows verified to be within +/- 10% of design flow with the control valve at its maximum controlled open position.

   1211.1.2 Systems balancing reports. Systems balancing reports shall verify system performance. Systems balancing reports shall be submitted to the building official upon request.

4. Will this proposed code change impact other sections of a model code book or an amendment in Minnesota Rule? If so, please list the affected sections or rule parts.
   No

Need and Reason

1. Why is the proposed code change needed? Please provide a general explanation as well as a specific explanation for any changes to numerical values (heights, area, etc.)

   It clarifies balancing requirements. The 20924 IMC does not include any hydronic balancing requirements.

2. Why is the proposed code change a reasonable solution?

   It provides clearity to the requirements and foloows what is common practice in the industry.

3. What other factors should the TAG consider?
   None

Cost/Benefit Analysis

1. Will the proposed code change increase or decrease costs? Please explain and provide estimates if possible.

   No changes – clarifies what is already required.

2. If there is an increased cost, will this cost be offset by a safety or other benefit? Please explain. If the benefit is quantifiable (for example energy savings), provide an estimate if possible.

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.

4. Are there any enforcement or compliance cost increases or decreases with the proposed code change? Please explain.

   No changes.

5. Will the cost of complying with the proposed code change in the first year after the rule takes effect exceed $25,000 for any one small business or small city (Minn. Stat. § 14.127)? A small business is any business that has less than 50 full-time employees. A small city is any statutory or home rule charter city that has less than ten full-time employees. Please explain.

Regulatory Analysis

1. What parties or segments of industry are affected by this proposed code change?

   Design engineers, contractors, code officials, building owners.

2. Can you think of other means or methods to achieve the purpose of the proposed code change? What might someone opposed to this code change suggest instead? Please explain what the alternatives are and why your proposed change is the preferred method or means to achieve the desired result.

   No

3. What are the probable costs or consequences of not adopting the code change, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals?

   Systems may not be properly balanced, resulting in occupant complaints and/or increased system operating costs.

4. Are you aware of any federal or state regulation or requirement related to this proposed code change? If so, please list the federal or state regulation or requirement and your assessment of any differences between the proposed code change and the federal regulation or requirement.

   No

***Note: Incomplete forms may be returned to the submitter with instruction to complete the form. Only completed forms can considered by the TAG.