

CODE CHANGE PROPOSAL FORM

(Must be submitted electronically)

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Date: **January 28, 2025**

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Model Code: **2024 IRC**

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Code or Rule Section: **Figures R403.5(1); 403.5(2); 403.5(3)**

Firm/Association affiliation, if any: **Braun Intertec Corp.** Topic of proposal: **Crushed Stone Footing Depth**

Code or rule section to be changed: **Figures R403.5(1); 403.5(2); 403.5(3)**

Intended for Technical Advisory Group ("TAG"): **Structural**

General Information

Yes No

- | | | |
|--|-------------------------------------|-------------------------------------|
| A. Is the proposed change unique to the State of Minnesota? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| B. Is the proposed change required due to climatic conditions of Minnesota? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| C. Will the proposed change encourage more uniform enforcement? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| D. Will the proposed change remedy a problem? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| E. Does the proposal delete a current Minnesota Rule, chapter amendment? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| F. Would this proposed change be appropriate through the ICC code development process? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Proposed Language

1. The proposed code change is meant to:

change language contained the model code book? If so, list section(s).
Figures R403.5(1); 403.5(2); 403.5(3)

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 ~~striketrough~~ words proposed for deletion. Include the entire code (sub) section or rule subpart that contains your proposed changes.

Figures R403.5(1); 403.5(2); 403.5(3) are amended as follows:

~~Top of footing min. 4 in. below undisturbed ground surface~~ minimum depth at frostline specified in Table R301.2

~~12 in. min. footing depth per Section R403.2.4~~

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 detail as drawn does not address several concerns that could impact structures in northern climates. Among the concerns are:

- The crushed aggregates would fill with water in many parts of the state due to natural or manmade water sources, the most likely source being discharge from downspouts. Due to the limited soil cover, frost heave could occur below the concrete wall which would result in distress or damage to structures.
- It is a known soils will lose strength in the spring while thawing, these weakened soils would have reduced confinement of the crushed stone, resulting in subsidence which would damage the structure.
- The repeated freeze thaw cycles or fluctuations in the water table could cause soils to migrate into the voids of the crushed aggregate. This would result in subsidence of soils adjacent to the wall, adversely impacting drainage patterns and/or slab support.

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

It will mitigate most of the risk with this approach without eliminating this option. Other options to mitigate the above-mentioned risks would include the use of geotextiles and insulation at increased cost compared to the proposed approach, would require site specific design, and be more challenging to construct and inspect.

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.

This should not result in appreciable cost increase, as this is rarely used solution for structure support.

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.

Not Applicable

3. If there is a cost increase, who will bear the costs? This can include government units, businesses, and individuals.
Not Applicable
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?
Architects, Contractors, Developers, Building Owners, Contractors, Building 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.
There are options to improve the detail, however these solutions would be site and structure specific. It is likely after the additional evaluation by licensed design professionals and modifications are performed, it would be lower cost solution than what was proposed.
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?
There is an increased risk of structure movement including total and differential heave or subsidence. The cost of mitigation movement after construction would be substantial, to the point that mitigation may not be economically viable.
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: 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.