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TITLE: Adopted Permanent Rules Relating to Borings and Wells

AGENCY: Department of Health

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MINNESOTA RULES: Chapter 4725

INCORPORATIONS BY REFERENCE:

Part 4725.0150, item H: NSF International, 789 Dixboro Road, P.O. Box 130140, Ann Arbor, Michigan 48113: ANSI/NSF 60, "Drinking Water Treatment Chemicals - Health Effects" is not subject to frequent change and is available for loan or inspection from the Minnesota Department of Health or through the Minitex interlibrary loan system.

Part 4725.0150, item K: International Code Council, 200 Massachusetts Ave, NW, Suite 250, Washington, DC 20001, "2024 International Mechanical Code (IMC)," chapter 12, is not subject to frequent change and is available for loan or inspection from the Minnesota Department of Health or through the Minitex interlibrary loan system.

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Adopted Permanent Rules Relating to Borings and Wells

4725.0100 DEFINITIONS.

[For text of subparts 1 to 47a, see Minnesota Rules]

Subp. 47b. **Submerged closed loop heat exchanger.** "Submerged closed loop heat exchanger" or "SCLHE" has the meaning given in Minnesota Statutes, section 103I.005, subdivision 17a, and includes a SCLHE unit and SCLHE in-well piping.

Subp. 47c. **Submerged closed loop heat exchanger unit.** "Submerged closed loop heat exchanger unit" or "SCLHE unit" means that portion of a SCLHE designed to transfer heat between the heat transfer fluid and groundwater.

Subp. 47d. **Submerged closed loop heat exchanger in-well piping.** "Submerged closed loop heat exchanger in-well piping" or "SCLHE in-well piping" means the piping and fittings of a SCLHE used to convey heat transfer fluid in the well and fittings connecting the piping in the well to the pitless unit.

Subp. 47e. **Submerged closed loop heat exchanger lateral piping.** "Submerged closed loop heat exchanger lateral piping" or "SCLHE lateral piping" means the piping and fittings of a SCLHE system used to convey heat transfer fluid between a building and the well.

Subp. 47f. **Submerged closed loop heat exchanger system.** "Submerged closed loop heat exchanger system" or "SCLHE system" means one or more SCLHE connected by SCLHE lateral piping to a building or a network of buildings exchanging thermal energy.

Subp. 47g. **Submerged closed loop heat exchanger system owner.** "Submerged closed loop heat exchanger system owner" or "system owner" means a person who owns and is responsible for overseeing the operation of the SCLHE system.

[For text of subparts 48 to 50, see Minnesota Rules]

Subp. 50a. **Water-supply well.** "Water-supply well" has the meaning given in Minnesota Statutes, section 103I.005, subdivision 20a.

[For text of subpart 50b, see Minnesota Rules]

Subp. 51. **Well.** "Well" has the meaning given in Minnesota Statutes, section 103I.005, subdivision 21.

[For text of subparts 51a to 54, see Minnesota Rules]

4725.0150 INCORPORATIONS BY REFERENCE AND ABBREVIATIONS.

This part indicates documents, specifications, and standards that are incorporated by reference in this chapter. This material is not subject to frequent change and is available from the source listed, for loan or inspection from the Minnesota Department of Health, or through the Minitex interlibrary loan system. To borrow or inspect a reference, email the Minnesota Department of Health Well Management section at health.wells@state.mn.us, or go to Search Minnesota Department of Health Library and Beyond (www.minnesotadepartmentofhealthlibrary.on.worldcat.org/discovery). The abbreviations listed in parenthesis after the source name are used in this chapter.

[For text of items A to G, see Minnesota Rules]

H. NSF International, 789 Dixboro Road, P.O. Box 130140, Ann Arbor, Michigan 48113.

[For text of subitem (1), see Minnesota Rules]

(2) ANSI/NSF 60, "Drinking Water Treatment Chemicals - Health Effects."

[For text of subitems (3) and (4), see Minnesota Rules]

[For text of items I and J, see Minnesota Rules]

K. International Code Council, 200 Massachusetts Ave, NW, Suite 250, Washington, DC 20001, "2024 International Mechanical Code (IMC)," chapter 12.

4725.0200 APPLICATION TO ALL WELLS AND BORINGS.

Subpart 1. **Applicability.** This chapter applies to all groundwater thermal exchange devices, SCLHE systems, and wells and borings except exploratory borings regulated under chapter 4727 and those wells and borings specifically exempted by Minnesota Statutes, chapter 103I.

Subp. 2. **Owner responsibility.** The owner of a well, boring, groundwater thermal exchange device, or SCLHE system is bound by the location, construction, installation, maintenance, and sealing provisions of this chapter.

[For text of subpart 3, see Minnesota Rules]

Subp. 4. **Access to information and property.** Upon presentation of credentials, the commissioner or an employee or agent authorized by the commissioner, may examine records or data related to matters governed by Minnesota Statutes, chapter 103I, and section 144.99, of any person subject to regulation under Minnesota Statutes, chapter 103I, and, for the purpose of taking an action authorized under statute or rule, or otherwise identified in Minnesota Statutes, section 144.99, subdivision 1, relating to the enforcement of this chapter, may:

[For text of items A and B, see Minnesota Rules]

C. obtain and analyze water, air, and waste drill cuttings;

D. inspect drill holes and drilled, sealed, or repaired wells and borings; and

E. inspect groundwater thermal exchange devices and SCLHE systems.

This authority must be exercised during regular working hours of Department of Health inspectors with respect to inspections of bored geothermal heat exchangers, groundwater thermal exchange devices, and SCLHE systems, and at reasonable times in all other cases.

[For text of subpart 5, see Minnesota Rules]

4725.0350 FEES APPLICABLE TO THIS CHAPTER.

[For text of subparts 1 to 5, see Minnesota Rules]

Subp. 6. **Permit fees.** A nonrefundable permit fee as specified in Minnesota Statutes, chapter 103I, must be paid by a property owner or owner's agent:

[For text of items A to D, see Minnesota Rules]

E. for installation and injection of water by a groundwater thermal exchange device in addition to the notification fee specified in subpart 5;

F. for construction of a bored geothermal heat exchanger;

G. annually for a dewatering well that is unsealed and under a maintenance permit except that a dewatering project comprising more than five wells shall be issued a single permit for wells recorded on the permit;

H. for construction of a boring to install an elevator hydraulic cylinder; and

I. for installation of a SCLHE system, in addition to the notification fee specified in subpart 5.

[For text of subparts 7 to 11, see Minnesota Rules]

4725.0475 ACTIVITIES REQUIRING LICENSURE OR REGISTRATION.

Subpart 1. **Activity requiring licensure or registration.** Except for those persons exempted under Minnesota Statutes, section 103I.205, subdivision 4, paragraph (e), a person must hold a license or registration issued by the commissioner to:

[For text of item A, see Minnesota Rules]

B. construct or seal a bored geothermal heat exchanger;

C. install or remove a groundwater thermal exchange device or SCLHE;

D. construct, repair, or seal an elevator boring;

E. install or remove a well pump or pumping equipment;

F. install, modify, or remove a screen, pitless unit, or pitless adapter; or

G. modify or materially affect the yield, water quality, diameter, depth, or casing of a well or boring including:

(1) attachment of water conditioning or other devices to the casing of the well or boring;

(2) chemical treatment of the well or boring with acid or other chemicals;

(3) development or stimulation of a well or boring including the use of explosives or hydrofracturing; or

(4) termination of a monitoring well, environmental bore hole, remedial well, or dewatering well casing at-grade, including installation or modification of the protective manhole or vault as required in part 4725.6850.

Subp. 3. **Well contractor license.** A person must be licensed as a well contractor to:

[For text of item A, see Minnesota Rules]

B. install or remove a pump or pumping equipment;

C. any of the activities in subpart 1, item G; and

D. install or remove a SCLHE or groundwater thermal exchange device.

Subp. 4. **Limited well/boring contractor licenses.** A person performing any of the activities in items A to F must have either a well contractor's license or have a separate limited well/boring contractor license for each of the limited licensure areas listed in items A to F:

A. limited licensure to construct, repair, modify as specified in subpart 1, item G, or seal a dug well or drive-point well;

[For text of item B, see Minnesota Rules]

C. limited licensure to install a well pump or pumping equipment, or any of the activities in subpart 1, item G, subitems (1) and (2);

[For text of item D, see Minnesota Rules]

E. limited licensure to construct, repair, seal, or modify as specified in subpart 1, item G, a dewatering well; or

F. limited licensure to construct, repair, seal, or modify as specified in subpart 1, item G, a bored geothermal heat exchanger.

[For text of subparts 5 to 7, see Minnesota Rules]

4725.1834 SUBMERGED CLOSED LOOP HEAT EXCHANGER SYSTEM PERMIT.

Subpart 1. **General requirements.** A person must not install or operate a SCLHE system until the commissioner issues a permit to the well contractor installing the SCLHE system, the system owner, and the property owner where a SCLHE is located, if different than the system owner.

A. An applicant must submit a new SCLHE system permit application to the commissioner, according to subpart 2, if a well contractor installing the SCLHE system is not the well contractor listed on the SCLHE system permit.

B. A system owner must provide the commissioner with Minnesota unique well numbers for proposed wells on a SCLHE system permit before construction of the wells.

C. A well contractor must construct all wells used for a SCLHE system within 18 months of the original SCLHE system permit approval.

D. A person must not use the wells in a SCLHE system to provide potable water while the SCLHE system is installed.

Subp. 2. **Permit application.**

A. The property owner, or the property owner's agent, where a SCLHE system is proposed to be installed must submit to the commissioner:

(1) a complete and legible SCLHE system permit application on a form, or in a format, provided by the commissioner; and

(2) the nonrefundable permit fee specified in Minnesota Statutes, section 103I.208.

B. A SCLHE system permit application must include:

(1) the name, address, and signature of:

(a) the well contractor installing the SCLHE system;

(b) the system owner; and

(c) the property owner, if not the system owner;

(2) the license number of the well contractor installing the SCLHE system;

(3) the location of the proposed SCLHE system, including:

(a) the township number, range number, section number, and one quartile; and

(b) the street address, if assigned;

(4) the construction record for each existing well proposed for use in the SCLHE system;

(5) a description of each proposed well for use in the SCLHE system, including the proposed:

(a) aquifer the well will be completed within;

(b) total well depth;

(c) bore hole diameter;

(d) casing diameter;

(e) casing depth;

(f) grouting material; and

(g) pitless unit make and model;

(6) proposed SCLHE system specifications, including:

(a) heat transfer fluid additives, including:

i. product names and manufacturers; and

ii. maximum concentrations of products proposed for use;

(b) SCLHE in-well piping and SCLHE lateral piping specifications, including:

i. diameters;

ii. material types and corresponding standards;

iii. wall thicknesses; and

iv. pressure ratings;

(c) SCLHE unit specifications, including:

i. diameter;

ii. material types and corresponding standards; and

iii. pressure rating;

(d) maximum SCLHE system design operating pressure;

(e) submersible pump maximum design flow rate; and

(f) types of seals or packers to be installed in a well;

(7) a plan describing how the proposed SCLHE system will be monitored for potential leaks and mitigation strategies for any leaks that may occur. The plan must include:

(a) design documents with locations of monitoring and mitigation devices;

(b) proposed monitoring parameters and frequency;

(c) a description of conditions that trigger a system alert or shut-off;

(d) a description of alert or shut-off response activities, including a list of the entities and roles of persons involved; and

(e) a description of mitigation activities to implement in the event of a leak, including a list of the entities and the roles of the persons involved;

(8) a plan diagram of the proposed SCLHE system, including:

(a) all existing and proposed well locations where SCLHE will be installed; and

(b) distances of proposed and existing wells to:

i. property lines;

ii. structures;

iii. utilities listed in part 4725.2150;

iv. water bodies listed in part 4725.4350, subpart 1;

v. all other wells on the property, if applicable; and

vi. contamination sources listed in part 4725.4450;

(9) a cross-sectional diagram of each well in a proposed SCLHE system. One diagram may be submitted if well construction, SCLHE in-well piping, SCLHE lateral piping, and SCLHE unit installation is the same. A diagram must include:

(a) the existing or anticipated geology at the well location, including depth intervals and description of materials or formations;

(b) existing or proposed well construction information, including:

i. total well depth;

ii. casing depth;

iii. bore hole diameter;

iv. casing diameter;

v. grouting materials and intervals;

vi. gravel packed interval and screened interval, if applicable; and

vii. pitless unit depth and diameter;

(c) the existing or anticipated static water level;

(d) proposed SCLHE installation information, including the depth:

i. and length of the SCLHE unit;

ii. of seals or packers installed in the well; and

iii. of the submersible pump;

(10) an inventory of known groundwater contamination sites and plumes within one-half mile of the proposed SCLHE system wells. The inventory must include:

(a) a list of mapped groundwater contamination sites and plumes generated from publicly available information on local, state, and federal websites. The list must include:

i. the special well and boring construction area name, if applicable;

ii. the site name;

iii. a description of contamination;

iv. the status of contamination; and

v. the source of information;

(b) a scaled map, including:

i. proposed SCLHE wells;

ii. a line showing the one-half mile boundary from the proposed SCLHE wells; and

iii. identified sites and plumes within the one-half mile boundary; and

(11) additional information the commissioner requires to evaluate potential harm to public health or degradation of the groundwater.

Subp. 3. **Permit application denial.** The commissioner must deny a SCLHE system permit application according to requirements in part 4725.1845 and Minnesota Statutes, section 144.99, subdivision 8.

Subp. 4. **Permit conditions.** The well contractor installing the SCLHE system, system owner, and property owner where the SCLHE system is located must comply with the permit conditions. The commissioner may require additional permit conditions to protect the public health and prevent degradation of the groundwater.

Subp. 5. **Permit modifications.** The system owner must obtain the commissioner's written approval before making changes to permitted SCLHE system specifications, including:

A. wells, including:

(1) the well casing diameters;

(2) the aquifer the wells will be completed within;

(3) the grouting materials;

(4) well completion types, such as screened or open bore hole; or

(5) wells used in the SCLHE system;

B. SCLHE in-well piping and SCLHE lateral piping specifications, including:

(1) material types and corresponding standards;

(2) wall thicknesses; or

(3) pressure ratings;

C. SCLHE unit specifications, including:

(1) diameter;

(2) material types and corresponding standards; or

(3) pressure rating;

D. the maximum SCLHE system design operating pressure;

E. a submersible pump maximum design flow rate;

F. heat transfer fluid additives;

G. heat transfer fluid additive maximum use concentrations; or

H. a plan for monitoring and mitigating leaks in the SCLHE system.

Subp. 6. **Installation record.** The system owner must submit a SCLHE system installation record to the commissioner within 60 days of the date of the first successful SCLHE system pressure test. The installation record must be legible and completed on a form provided by the commissioner.

A. The installation record for the SCLHE system must include:

(1) the SCLHE system permit number;

(2) the name, address, and signature of the:

(a) system owner; and

(b) well contractor installing the SCLHE system;

(3) the heat transfer fluid additives used, including:

(a) product names and manufacturers; and

(b) maximum concentrations of products used;

(4) the SCLHE in-well piping and SCLHE lateral piping specifications, including:

(a) diameters;

(b) material types used and corresponding standards;

(c) wall thicknesses; and

(d) pressure ratings;

(5) the SCLHE unit specifications, including:

(a) diameter;

(b) material types used and corresponding standards; and

(c) pressure rating;

(6) the maximum SCLHE system design operating pressure;

(7) the submersible pump, including:

(a) make and model; and

(b) maximum design flow rate;

(8) the types of seals or packers in the well;

(9) the pressure test record from the first successful pressure test;

(10) the pitless unit make and model; and

(11) the cross-sectional diagrams of each well in the SCLHE system.

One diagram may be submitted if the well construction, SCLHE piping, and SCLHE unit installation are the same.

B. A cross-sectional diagram must include:

(1) the Minnesota unique well number;

(2) the geology observed during well construction, including depth intervals and the description of materials or formations;

(3) well construction information, including:

(a) the total well depth;

(b) the casing depth;

(c) the borehole diameter;

(d) the casing diameter;

(e) the grouting material;

(f) the grouting intervals;

(g) the gravel packed interval and screened interval, if applicable; and

(h) the pitless unit installation depth and diameter;

(4) the static water level measured in the well; and

(5) the installation information in the well, including depth:

(a) and length of the SCLHE in-well piping;

(b) and length of the SCLHE unit;

(c) of the seals or packers; and

(d) of the submersible pump.

Subp. 7. **SCLHE system maintenance.**

A. A well contractor must perform any maintenance of the SCLHE unit and SCLHE in-well piping.

B. A well contractor must ensure chemicals placed in the well to clean or rehabilitate the well or SCLHE unit meet the requirements of and are used in accordance with part 4725.3725.

C. Treatment or rehabilitation chemicals must:

(1) not be circulated within the SCLHE unit and SCLHE in-well piping when installed in the well; and

(2) be removed from the SCLHE unit and SCLHE in-well piping before reinstallation in the well.

D. ANSI/NSF-60 certified treatment or rehabilitation chemicals are exempt from the requirements in item C and must be used in accordance with the certification for each chemical;

E. A well contractor must ensure the heat transfer fluid and treatment or rehabilitation chemicals are:

(1) not released into the well during the removal of the SCLHE unit and SCLHE in-well piping; and

(2) disposed of according to applicable laws and rules of this state, including local ordinances or regulations.

F. A SCLHE system must be pressure tested according to part 4725.7075, subpart 4, items A to I, when the SCLHE unit and SCLHE in-well piping is removed from the well and reinstalled or replaced.

G. The system owner must conduct leak monitoring and mitigation according to the plan approved in the SCLHE system permit.

H. The system owner must notify the commissioner electronically within 24 hours of pressure loss or leakage from the SCLHE system piping that causes an alert or shut-off.

I. The system owner must notify the Minnesota duty officer according to Minnesota Statutes, section 115.061, of a SCLHE system leak.

J. The system owner is responsible for the repair and mitigation of a leak.

Subp. 8. **SCLHE system disclosure and ownership.** A property owner must notify the commissioner electronically or in writing within 30 days of the sale or transfer of the property.

A. The property owner must submit to the commissioner the:

(1) new system owner's name and contact information; or

(2) new property owner's name and contact information.

B. A property owner must provide a copy of the SCLHE system permit to a buyer or lessee of the property prior to the transfer of sale or the term of the lease.

C. A property owner is responsible for the SCLHE system compliance with this part in the absence of a system owner.

Subp. 9. **Termination and removal.**

A. A system owner must notify the commissioner in writing within 30 days if the SCLHE system is inoperable for more than one year.

B. A well contractor must remove the SCLHE unit from the well and SCLHE in-well piping within 30 days after notifying the commissioner in writing that the SCLHE system has been inoperable for more than one year.

C. A well contractor is responsible for the handling and disposal of the heat transfer fluid according to subpart 7, item E.

D. The requirements of this chapter must be met prior to a well being put into use for another purpose. Conversion to another type of well must be in accordance with part 4725.1810, subpart 7.

4725.1845 DENIAL OF PERMIT APPLICATION.

Subpart 1. **Grounds for denial of application.** The commissioner may deny a permit application or revoke a permit for construction of a monitoring well, bored geothermal heat exchanger, or elevator boring, or installation of a groundwater thermal exchange device or SCLHE system if:

A. the person constructing the well or boring, or installing the SCLHE or groundwater thermal exchange device, is not licensed according to this chapter;

[For text of items B to G, see Minnesota Rules]

[For text of subpart 2, see Minnesota Rules]

4725.2010 APPLICABILITY.

The general construction and use requirements specified in parts 4725.2010 to 4725.3875 apply to all wells and borings except exploratory borings regulated under chapter 4727. The additional requirements or exemptions in parts:

A. 4725.4050 to 4725.6050 apply to water-supply wells;

B. 4725.6150 apply to dewatering wells;

C. 4725.6450 to 4725.6850 apply to monitoring wells and cased environmental bore holes;

D. 4725.7050 apply to bored geothermal heat exchangers;

E. 4725.7250 apply to elevator borings;

F. 4725.7450 apply to environmental bore holes; and

G. 4725.7075 apply to submerged closed loop heat exchangers systems.

4725.3725 CHEMICAL TREATMENT AND REHABILITATION.

Subpart 1. **Treatment chemicals.** Chemicals placed in a well or boring to increase the yield, remove or treat contaminants or objectionable tastes or odors, or rehabilitate the well or boring must meet the requirements of ANSI/NSF Standard 60 as determined by a person accredited by ANSI. Sodium or calcium hypochlorite may be used if registered by the United States Environmental Protection Agency according to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), section 3(c)(7)(A), as an antimicrobial pesticide for use in potable water. Treatment chemicals must be neutralized or removed from the well, boring, and any connected piping systems prior to use of the well or boring. This part does not apply to chlorine or other treatment chemicals added to a water distribution system, or to a drilling additive used according to part 4725.2950.

[For text of subpart 2, see Minnesota Rules]

4725.5475 HYDROFRACTURING WATER-SUPPLY WELLS.

[For text of subpart 1, see Minnesota Rules]

Subp. 2. **Injection materials, water, and proppants.**

[For text of item A, see Minnesota Rules]

B. Additives must meet the requirements of ANSI/NSF Standard 60 as determined by a person accredited by ANSI.

[For text of item C, see Minnesota Rules]

[For text of subparts 3 and 4, see Minnesota Rules]

4725.5550 WATER-SUPPLY WELL DISINFECTION.

[For text of subparts 1 to 3, see Minnesota Rules]

Subp. 4. **Disinfection materials.** Chlorine materials must meet the requirements of ANSI/NSF Standard 60 as determined by a person accredited by ANSI or be registered by

the United States Environmental Protection Agency according to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), section 3(c)(7)(A), as an antimicrobial pesticide for use in potable water. Chlorine compounds with additives such as perfumes or algaecides must not be used for disinfection. An alternate disinfection material may be used if the material is a biocide meeting the material and use standards of this part and provides biocidal activity equivalent to the chlorine concentrations and contact times required in this part.

[For text of subparts 5 and 6, see Minnesota Rules]

Subp. 7. **SCLHE exemption.** This part does not apply to a submersible pump installed within a SCLHE system that does not discharge water to the surface or a distribution system.

4725.7050 BORED GEOTHERMAL HEAT EXCHANGERS.

Subpart 1. **Construction.** A bored geothermal heat exchanger must be constructed according to the construction standards in this part and the general construction standards in parts 4725.2010 to 4725.3875.

A. Bored geothermal heat exchanger piping must be high-density polyethylene or cross-linked polyethylene that meets the following requirements:

(1) for high-density polyethylene:

(a) pipe with a diameter of two inches or smaller, or is located more than 15 feet below ground surface, must be SDR 11 or thicker;

(b) pipe with a diameter greater than two inches, and located less than 15 feet below ground surface, must be SDR 17 or thicker;

(c) pipe must meet ASTM Standard D3035-15 or ASTM Standard F714-13;

(d) socket fusion and butt fusion connections must be made in accordance with ASTM Standard F2620-19, and electrofusion connections must be made in accordance with ASTM Standard F1055-16; and

(e) socket fittings must be manufactured in accordance with ASTM Standard D2683-14;

[For text of subitems (2) and (3), see Minnesota Rules]

[For text of items B to G, see Minnesota Rules]

[For text of subparts 2 to 10, see Minnesota Rules]

4725.7075 SUBMERGED CLOSED LOOP HEAT EXCHANGER SYSTEM INSTALLATION.

Subpart 1. **Installation.** An installed SCLHE system must meet the requirements in this part.

A. A well used for a SCLHE system must meet the requirements in this chapter and Minnesota Statutes, chapter 103I.

B. A well contractor must install or remove a SCLHE.

C. A well contractor or bonded mechanical contractor may install SCLHE lateral piping.

D. A well contractor must notify the commissioner at least 24 hours prior to the initial installation of a SCLHE. The notification must occur electronically during business hours.

E. SCLHE system piping connections to a water-supply well or a potable water-supply system must be protected with a backflow prevention device as specified in UPC sections 602.0 to 603.5.23.4, as incorporated by reference in part 4714.0050.

F. A heat transfer fluid sampling port must be installed on a SCLHE system.

G. Buried SCLHE lateral piping must be marked by:

(1) marking tape detectable from the ground surface; or

(2) tracer wire. Tracer wire must be:

(a) electrically continuous;

(b) corrosion resistant;

(c) 14 American wire gauge or thicker;

(d) suitable for direct burial; and

(e) accessible or terminate above ground where the SCLHE lateral piping meets the building.

Subp. 2. **SCLHE unit.**

A. A SCLHE unit must have a minimum pressure rating that exceeds 1.5 times the maximum SCLHE system design operating pressure or 100 psi, whichever is greater, plus the hydrostatic pressure on the SCLHE unit when installed in the well.

B. Materials and finishes used in a SCLHE unit must not exceed eight percent lead except that solders and flux must not contain more than 0.2 percent lead.

C. Materials must not contain constituents that would cause groundwater concentrations to exceed a regulatory or advisory action value under parts 4717.7810 to 4717.7900.

Subp. 3. **Piping and fittings.**

A. SCLHE lateral piping must comply with the:

(1) standards listed in IMC table 1210.4 for piping;

(2) standards listed in IMC table 1210.5 for fittings; and

(3) requirements of IMC section 1210.6 for joints.

B. SCLHE lateral piping must have a minimum pressure rating of 100 psi or 1.5 times the maximum SCLHE system design operating pressure, whichever is greater.

C. SCLHE in-well piping must comply with the:

(1) standards listed in IMC table 1202.4 for piping;

(2) standards listed in IMC table 1202.5 for fittings; and

(3) requirements of IMC section 1203 for joints and connections.

D. SCLHE in-well piping must have a minimum pressure rating that exceeds 1.5 times the maximum SCLHE system design operating pressure or 100 psi, whichever is greater, plus the hydrostatic pressure on the deepest pipe installed in the well.

Subp. 4. **Pressure test.**

A. A system owner is responsible for having a SCLHE system successfully pressure tested after installation and before circulation of heat transfer fluid additives, or any other fluid in the SCLHE system. Potable water without additives may be used for the pressure test and circulated to purge the SCLHE system before the pressure test.

B. All portions of the SCLHE system used to convey heat transfer fluid must be pressure tested, including the:

(1) SCLHE in-well piping;

(2) SCLHE lateral piping;

(3) SCLHE unit; and

(4) pitless unit.

C. The SCLHE system must be pressure tested:

(1) in one continuous loop from the building or buildings to all the wells; or

(2) in individual continuous loops from the building or buildings to each well.

D. A system owner must notify the commissioner at least 24 hours before the pressure test. The notification must occur electronically during business hours.

E. A system owner is exempt from item D in the event of an exceptional circumstance where inaction poses an immediate and significant loss of heating or cooling preventing prior notification. The system owner must notify the commissioner electronically within 12 hours of completing the pressure test.

F. A pressure test must:

(1) be conducted by a well contractor, bonded mechanical contractor, or licensed plumber;

(2) be witnessed by a third party who is a Department of Health inspector, licensed professional engineer, licensed plumber, or bonded mechanical contractor;

(3) use potable water;

(4) be conducted at 1.5 times the maximum SCLHE system design operating pressure or 100 psi, whichever is greater, as measured at or above the ground surface near the well; and

(5) be conducted for 30 minutes.

G. For purposes of this part, a successful pressure test is one that maintains a constant pressure without adding fluid during the duration of the pressure test.

H. The system owner is responsible for maintaining complete, successful pressure test records according to this part. Copies of pressure test records must be:

(1) made available to the commissioner upon request;

(2) legible; and

(3) provided electronically or by mail.

I. A pressure test record must include:

(1) the SCLHE system permit number;

(2) the date and time of the conducted pressure test;

(3) the duration of the conducted pressure test;

(4) the test method;

(5) the hydrostatic pressure on the SCLHE unit; and

(6) information on the person conducting and witnessing the pressure test, if applicable, includes:

(a) name and signature;

(b) company name; and

(c) license or registration number.

J. A SCLHE system must be pressure tested according to items A to I when a SCLHE unit or SCLHE in-well piping is removed from the well and reinstalled or replaced.

Subp. 5. **Heat transfer fluid.**

A. Heat transfer fluid must be sourced from a potable water supply.

B. Heat transfer fluid may be amended with additives that meet the requirements of ANSI/NSF-60 certification for each additive.

C. A system owner must attach a permanent indelible sign to all fill locations in the building. The sign must indicate that:

(1) heat transfer fluid must be only potable water; and

(2) any heat transfer fluid additive must be ANSI/NSF-60 certified.

INSTRUCTION TO REVISOR. (a) The revisor shall change the headnote in part 4725.1842 to read "APPROVAL OF PERMIT APPLICATION."

(b) The revisor shall change the headnote in part 4725.6050 to read "REMEDIAL WELLS."

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