

**4725.3150 CASING CONNECTIONS AND CAPS.**

Subpart 1. **Casing connections and caps 12 inches above ground.** A connection or fitting 12 inches or more above the established ground surface into the top or side of a casing must be constructed to be weatherproof and insect proof. The connection, including a cap, cover, electrical connection, water treatment connection, discharge piping, vent, access pipe, or other connection to the casing must consist of:

- A. a threaded connection;
- B. a welded or solvent welded connection;
- C. a rubber expansion sealer;
- D. a bolted flange with rubber gasket;
- E. an overlapping cap or cover with compression gasket;
- F. an extension of the casing at least one inch into the base of a pump; or

G. a sanitary well seal with a one-piece top plate, compression gasket, and noncorrodible draw bolts. The cap or seal must be equivalent to the casing in weight and strength. If the well or boring is in a building that meets the requirements in part 4725.2175, a two-piece top plate, compression gasket, and noncorrodible draw bolts may be used.

Subp. 2. **Casing connections less than 12 inches above ground.** A connection to, or a fitting on a casing made less than 12 inches above the established ground surface must be constructed to be watertight, vermin-proof, and provide complete clearance within the internal diameter of the casing. The connection must not be submerged in water at the time of installation. The connection must be made at or above the frost line. The connection or fitting must consist of a:

A. threaded connection equivalent to the material and threading standards of ASTM A53/A53M-04a, ASTM A589-96 (2001), API Standard 5L-04, ASTM A312/A312M-04b, or ASTM F480-02;

B. welded connection for steel or stainless steel casing where:

(1) the welded fitting must:

- (a) be made of forged or machined metal; a cast-iron fitting is not allowed;
- (b) be certified for use with pressure-rated vessels or piping;
- (c) be marked with the design pressure rating and manufacturer;
- (d) be made of metal compatible with the casing material;
- (e) have a design pressure rating equal to or greater than the casing;

(f) fully integrate branch reinforcement and maintain full casing strength by providing casing reinforcement, with reinforcement tapering at the sides of the fitting;

(g) have a contour matching the curvature of the casing; and

(h) be self-aligning;

(2) the installer of a welded fitting must:

(a) complete the weld free of slag, inclusions, bubbles, voids, or other imperfections;

(b) use a guide or template for cutting the hole in the casing, or use a properly sized drilled hole;

(c) install the welded fitting in accordance with the manufacturers recommendations; and

(d) field-weld the fitting by holding the welding rod in a vertical or horizontal position, or bench-weld the fitting before field installation, with a welding rod as corrosion-resistant as the casing;

C. solvent welded connection for plastic casing equivalent to the standards of ASTM F480-02, or part 4725.2550;

D. bolted sleeve-type coupling meeting ANSI/AWWA Standard C219-01 where:

(1) the bolted sleeve-type coupling must:

(a) have a working pressure rating of at least 150 pounds per square inch;

(b) have an interior coating that complies with ANSI/NSF Standard 61-2003e if the coupling has an interior coating in contact with water; and

(c) provide for the casing or pipe to extend at least 2.5 inches into the coupling;

(2) the installer of a bolted sleeve-type coupling must:

(a) install the coupling in accordance with ANSI/AWWA Standard C219-01; and

(b) insert the casing or pipe ends at least 2.5 inches into the coupling; or

E. pitless adapter or pitless unit meeting the requirements of part 4725.4850, subpart 1. A welded, solvent welded, or threaded coupling, adapter, or swaged fitting meeting the material standards of part 4725.2350, 4725.2550, or 4725.6650 may be used to connect a casing to a pitless adapter or unit.

Subp. 3. **Electrical connections.** Electrical wire must enter a casing, cap, cover, or pump base a minimum of 12 inches above the established ground surface except for a well or boring completed at-grade in accordance with part 4725.6850. Electrical wires above the ground surface must be contained within a conduit or the casing. The electrical wire connection through the casing, cap, cover, or pump base must be made watertight and vermin-proof with a compression fitting, gasket, or electrical conduit installed according to Minnesota Statutes, section 326B.35, or caulk meeting the standards of ANSI/NSF Standard 14-2003 or 61-2003e.

**Statutory Authority:** *MS s 103I.101; 103I.111; 103I.205; 103I.221; 103I.301; 103I.401; 103I.451; 103I.501; 103I.525; 103I.531; 103I.535; 103I.541; 103I.621; 144.05; 144.12; 144.383; 157.04; 157.08; 157.09; 157.13*

**History:** *17 SR 2773; L 2007 c 140 art 5 s 32; art 13 s 4; 33 SR 211*

**Published Electronically:** *September 2, 2008*