

Couplers for Extending Casing

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Ohio Department of Health
Bureau of Environmental Health
Residential Water Program

History and Background on Use of Couplers in Ohio

- In 1981 buried well seals were banned on new construction and pitless adaptors were required to be installed for a below the frost line connection to the distribution line into the house or building.
- A variety of couplers and clamps have been used to extend casing from a buried well seal or well pit above grade for many years. The only requirement between 1981 and 1999 was that the coupling device had to provide a water tight connection.

- In 2000 the Private Water System Rules were changed and casing could only be connected by methods described in Rule OAC 3701-28-111. For steel casing it was welding, or threaded and coupled. For plastic the methods for joining casing are gluing, threading, or spline locks.
- The primary goal for the specificity of casing joining methods was to eliminate the use of flexible couplers such as the Fernco and the Mission for extending casing above grade. These types of couplers may have provided initial water tightness, but did not provide the strength or rigidity needed to protect the integrity of the casing from incidental collisions.

Fernco or Mission Type Couplers are Not Acceptable

Fernco



Mission



Because...



- After the 2000 Private Water System Rules (OAC Chapter 3701-28) became effective, it became apparent that there was still a need for the use of couplers for joining existing casing of dissimilar size and materials. However, the rules provided limited guidance on the use of couplers other than each installation where couplers were used required that a **variance** be obtained through the local health department, and that connections must be structurally sound and watertight.

- In 2003, ODH wrote a series of letters to local health departments that had requested guidance concerning the use of couplers. The letter written in February 2003 to the Stark County Health Department became the informed standard for making recommendations on coupler use. It indicated that certain models of Dresser and JCM couplers were reviewed by the Ohio Department of Health and were considered acceptable for use with a variance from the local health department. The letter also indicated the use of certain types of restrainers on specific couplers. ODH was later informed by the same companies that some restrainers could damage plastic casing. Also coupler models previously considered acceptable such as the Dresser 711 are now not recommended for plastic casing. The 2003 letters are outdated and should not be used as a reference.

Recommendations on Coupler Design and Use

JCM 201

- In order to provide some guidance for the use of couplers for extending water well casing ODH has come up with a set of minimum criteria that the coupler must meet before it would be considered acceptable. Any coupler used to extend water well casing must meet the following criteria:

- 1) - have a ramped compression gasket seal
- 2) - be designed for a vertical application
- 3) -It must have sufficient length to grip the casing in order to provide strength, rigidity, and water tightness.
- 4) -have a 2 piece construction with at least 4 bolts (no wrap around clamps)
- 5) -should not damage casing

Dresser Style 38



These criteria were adopted into the rules that became effective April 1, 2011.

- Ohio Administrative Code 3701-28-09
- OAC 3701-28-09
- (D) Couplings used to join well casing of dissimilar materials or sizes shall conform to the following criteria:
- (1) Have the same or better strength and rigidity of the well casings being joined together.
- (2) Be composed of a cast steel unit joined by a minimum of four steel bolts spaced uniformly around the circumference of the coupling.
- (3) Use a ramped compression gasket seal that fits between the upper and lower portions of the coupling to ensure a watertight seal.
- (4) Ensure that a minimum of two inch length of the top and bottom casing end is contained within both the top and bottom pieces of the coupling.
- (5) Ensure that the coupling is centered over the joint.
- (6) Other products that may be approved by the director.

Couplers - Manufacturers and Models

- ODH has consulted with Dresser and JCM for updated information on couplers that meet the criteria listed above. The following is a list of compression couplers that the manufacturers consider acceptable for the application of extending casing:
- 1. Dresser Style 38, Style 253
http://www.dressercouplings.com/internet/businessunits/flowcontrol/subunits/pipingspecialties/water_cat/water.cfm?numPageID=1035
- 2. JCM 201, 210
http://www.jcmindustries.us/product_comparison_chart.html

The following compression coupler models were referenced at the JCM web-site as equivalent to the models listed above.

3. Mueller MAXI

<http://www.muellercompany.com/files/Vol%207%20Issue%201.pdf>

4. Romac 400

<http://www.romacindustries.com/FlangedCouplings.html>

Other Examples of Acceptable Couplers

Mueller MAXIE



Romac FC 400



- The following compression coupler models were also referenced at the JCM web-site as equivalent to the models listed above but URL information could not be obtained at this time.
- 5. Cascade 400, 501
- 6. Ford FC₁, FC 3-7
- 7. Power 3503
- 8. Smith 411

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- The above list comprises devices currently considered acceptable by the Ohio Department of Health for extending casing but is **not all inclusive**.
 - Be aware that some distributors may use different number or model designations for the above listed couplers. In these cases, the local health department will need to verify with the distributor and the manufacturer that the coupling devices are the same or similar models.

After a review of the Maas Midwest Dickens SA-4-5 coupler is now currently considered ***acceptable*** for extending 4 inch well casing to 5 inch well casing.



Clamps are **not** acceptable

- Many of the fitting manufacturing companies produce similar connection fittings designated as clamps. ODH does not recommend the use of fittings or devices designated as clamps to extend water well casing.

JCM Clamp



Variations

- Prior to the rule change on April 1, 2011 a variance was required for each individual job which involved the use of a coupler to extend casing. A variance is *no longer required* from the local health department for using couplers to extend casing.
- *Note that when casing is extended the well must also be brought into compliance with other aspects of the current rules, unless the well conditions fall within the exceptions noted in OAC 3701-28-02 (E)(F) and (G),
- or a variance considered for non-compliant aspects of the well.
- The local health department retains the ability to accept or deny any variance request.

Pitless Units

- A pitless unit, which is a casing device with a factory installed pitless adaptor, can also be installed on existing casing in order to extend a casing above grade and does not require the acquisition of a variance from the local health department. There are coupling devices available from several pitless unit manufacturers that have a weld-on end that can fit to the original casing and a threaded end to fit the new pitless unit. See the Water Systems Council web site at <http://www.watersystemscouncil.org/standards/listing.cfm?std=PAS97> for information on pitless units.

Pitless units



OEPA

- Finally, it should be noted that the OEPA reviewed the use of couplers for public wells or other wells within their jurisdiction (see OAC 3745-09) and may **not** permit their use. For more information contact the Ohio EPA, Division of Drinking and Groundwater, Public Water Supply Unit at (614) 644-2752.

Questions

- Questions regarding the use of couplers for private water systems should be addressed to the Residential Water and Sewage Program at (614) 466-1390 or BEH@odh.ohio.gov.