



AMERICAN DUCTILE IRON PIPE

AMERICAN Ductile Iron Flex-Ring® Joint Pipe Field Flex-Ring® 6-inch, 8-inch and 12-inch



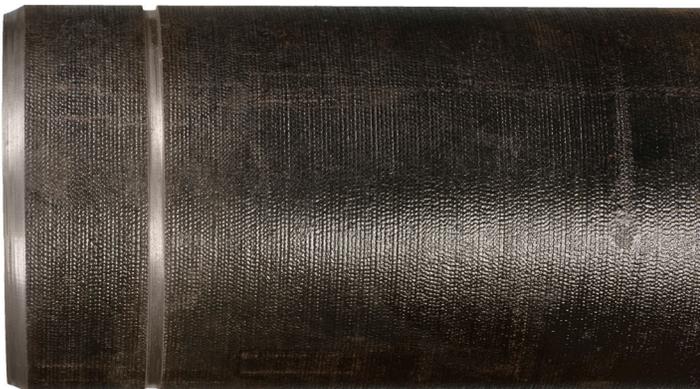
The AMERICAN Field Flex-Ring is a field adaptable restrained joint utilizing a grooved fabricated end in conjunction with a corrosion-resistant, high-strength, low-alloy (HSLA) steel Field Ring. AMERICAN Field Flex-Ring® Restrained Joint Ductile Iron Pipe, utilizing the sealing features of the time-proven Fastite® Joint and a one-bolt restrained connection, provides flexible, easily assembled and positive restraint against endwise separation due to thrust.

The AMERICAN Field Flex-Ring is an integral part of the AMERICAN Flex-Ring Joint restraint system on 6-, 8- and 12-inch ductile iron Flex-Ring Pipe and fittings as an easy, one-bolt field adaptable way of restraining field connections, which also does not require a factory or field weldment. Where field cuts are anticipated, the AMERICAN Field Flex-Ring may be used to restrain joints with any suitable ductile iron plain end or cut pipe for water service in lieu of a standard Flex-Ring Joint spigot with a factory welded-on ring.

The AMERICAN Field Flex-Ring is designed to restrain joints using the Flex-Ring sockets with the same allowable working pressures and deflection capabilities

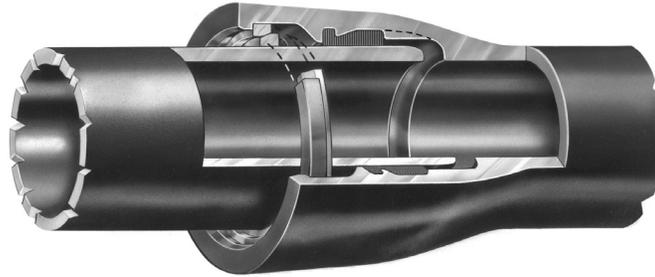
as the standard Flex-Ring Joint. (See Table 9-1.) Field Flex-Rings may be used with a minimum 53 thickness class ductile iron pipe with a maximum working pressure of 350 psi. Restrained joints using the AMERICAN Field Flex-Ring have been thoroughly factory tested to withstand dead end thrust resulting from more than twice the rated working pressure.

For the 6-, 8- and 12-inch sizes, the restraint is provided by wedging action between the beveled corrosion-resistant, high-strength, low-alloy (HSLA) steel Field Ring and a yellow painted ductile iron split Flex-Ring assembled behind the retainer ring. Once the grooved fabricated end is created and the Field Ring is installed, the Field-Flex Ring spigot end behaves identically to the Flex-Ring spigot end. After the spigot end of the Field Flex-Ring pipe is assembled into the Flex-Ring bell, the split Flex-Ring is inserted and springs into the socket locking groove. The Flex-Ring is securely positioned behind the bolt-on retainer ring and in the socket locking groove on the inside of the pipe bell, providing the flexible restraint.





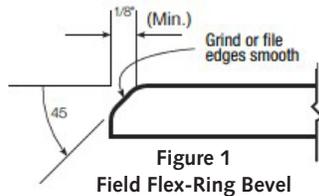
**AMERICAN Ductile Iron Flex-Ring® Joint Pipe
Field Flex-Ring®
6-inch, 8-inch and 12-inch
Assembly Instructions**



AMERICAN Field FLEX-RING® Spigot Rings are intended for use with AMERICAN Flex-Ring® Ductile Iron Pipe, 6-, 8- and 12-inch, for thickness classes 53 through 56 per ANSI/AWWA C151/A21.51 having a pressure rating of 350 psi.

Field-Cut Joint

Measure the pipe diameter at the desired cut distance to ensure it meets the ANSI/AWWA C111/A21.11 tolerances. Cutting the pipe can be performed using abrasive wheels, torch or milling cutter. When the cut end is to be assembled in a Flex-Ring® bell, an adequately smooth (without sharp edges) bevel should be ground or filed on the cut edge to prevent damage to or dislodgement of the gasket during assembly (Figure 1). If desired, a thin field assembly line may be drawn in marker or paint, with the line located from the spigot end the same distance as the far edge of factory-applied assembly stripe.



Installing Field Flex-Ring

Once a proper AWWA C606 groove has been created at the specified distance from the spigot end, an asphaltic coating approximately 1 mil thick should be applied to the grooved section of the ductile iron pipe, unless otherwise specified (Figure 3). The primary purpose of the asphaltic coating is to minimize atmospheric oxidation for aesthetic reasons. Once the coating is dry to the touch install the Field Flex-Ring into the groove with the square side of the ring facing the spigot end, ensuring proper placement around the pipe (Figure 4). Using a 3/16-inch Allen wrench, tighten the bolt until the ring is pulled snugly down onto the pipe, making sure that the cleat on the ID of the spigot ring stays aligned with the groove on the pipe (Figure 5). The ring is sufficiently tight when the gap between the ends of the ring has almost completely closed and when it requires tapping on the ring with a hammer to make it move back and forth in the groove. Once sufficiently installed proceed with 4- to 12-inch Flex-Ring installation instructions.



Figure 2



Figure 3



Figure 4



Figure 5

Groove Pipe

Several types of grooving machines are available that operate hydraulically, pneumatically, electrically, or are self-powered by a gasoline engine. The grooving machine will normally cut pipe from 4- to 64-inch diameter. The set-up time for this cutter is usually less than ten minutes; it requires a minimum clearance of 12 inches and has a cutting speed of approximately one minute per inch of pipe diameter. The grooving machine should be installed to provide the cut edge at the designated distance from the spigot end as shown in Table 1. The groove should be cut as a standard AWWA C606 groove as seen in Figure 2.

Table 1. Field Groove Location	
Size	Groove Location From Spigot Face
6-inch	4.06 inches
8-inch	4.18 inches
12-inch	4.75 inches