

Material Specification – 29 for MECHANICAL JOINT RESTRAINT

1. GENERAL

Mechanical joint restraints shall be manufactured of DI in accordance with ASTM A 536 with the following additional requirements or exceptions.

Mechanical joint restraints shall be incorporated into the design of a follower gland. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts in accordance with AWWA C111 and C153.

2. DESCRIPTION

The restraint mechanism shall consist of numerous individually activated gripping surfaces to maximize restraint capability. The gripping surfaces shall be wedges that are designed to spread the bearing surfaces on the pipe. Twist-off nuts, sized the same as tee-head bolts, shall be used to ensure the proper actuating of restraining devices. When the nut is sheared off, a standard hex nut shall remain.

3. PRESSURE RATING

The mechanical joint restraint device shall be as listed below:

| Type of Pipe | Sizes (Inches) | PSI | Safety Factor |
|--------------|----------------|--------------------------------------|---------------|
| DI | 3 to 16 | 350 | 2 |
| | 20 to 36 | 250 | 2 |
| PVC | Various | Equal to that of the pipe being used | 2 |

4. MATERIAL

The mechanical joint restraint gland and wedge assembly shall be manufactured from DI in accordance with ASTM A 536, Grade 65-45-12. Wedges shall be heat treated to a minimum of 370 BHN. Rubber gaskets shall be vulcanized styrene butadiene rubber (SBR) in accordance with AWWA C111. Tee-head bolts shall be manufactured from a high strength low alloy steel known in the industry as Cor-Ten, Usalloy, or Durabolt.

5. ACCEPTABLE MANUFACTURERS AND MODELS

| Mechanical Joint Restraint – PVC Pipe | | |
|---------------------------------------|-------------------------|----------------|
| Manufacturers | Models | Sizes (Inches) |
| EBAA Iron, Inc. | Megalug 2000 PV Series | 4 to 20 |
| Ford Meter Box | Uni-Flange Series 1500 | 4 to 20 |
| | Uni-Flange Series 1500R | 4 to 6 |
| Romac | RomaGrip | 4 to 20 |
| SIP Industries | EZ Grip | 4 to 20 |
| Sigma Corporation | One-Lok SLCE | 4 to 20 |

| | | |
|--------------------|------------------------|---------|
| Smith-Blair | Cam-Lock | 4 to 20 |
| Star Pipe Products | StarGrip Series 4000 | 4 to 20 |
| | StarGrip Series 4000G2 | 4 to 12 |
| Tyler Union | TufGrip | 4 to 20 |

| Mechanical Joint Restraint – DI Pipe | | |
|---|-----------------------|-----------------------|
| Manufacturers | Models | Sizes (Inches) |
| EBAA Iron, Inc. | Megalug 1100 Series | 3 to 20 |
| Romac Industries | RomaGrip | 3 to 20 |
| Ford Meter Box | Uni-Flange Series1400 | 3 to 20 |
| SIP Industries | EZ Grip | 3 to 20 |
| Sigma Corporation | One-Lok SLDE | 3 to 20 |
| Smith-Blair | Cam-Lock | 3 to 20 |
| Star Pipe Products | StarGrip 3000 Series | 3 to 20 |
| Tyler Union | TufGrip | 3 to 20 |

| Bell-Spigot Restraint – PVC Pipe | | |
|---|------------------------|-----------------------|
| Manufacturers | Models | Sizes (Inches) |
| EBAA Iron, Inc. | Series 1500 TD | 4 to 12 |
| | Series 1500 | 4 to 12 |
| Ford Meter Box | Uni-Flange Series 1390 | 4 to 20 |
| North American Specialty Products | C900 RJ | 4 to 16 |
| | C900 RJIB | 4 to 12 |
| S&B Technical Products – The Bulldog | Diamond Lok-21 | 4 to 16 |
| | Eagle Loc 900 | 4 to 16 |
| SIP Industries | EZ Grip PTP | 4 to 20 |
| Sigma Corporation | PV-Lok PWP | |
| Star Pipe Products | Series 1100 | 4 to 20 |

| Bell-Spigot Restraint – DI Pipe | | |
|--|------------------------|-----------------------|
| Manufacturers | Models | Sizes (Inches) |
| American | Fastgrip Gasket | 4 to 20 |
| EBAA Iron, Inc. | Megalug 1700 Series | 4 to 20 |
| | Series 1500 TD | 4 to 12 |
| Ford Meter Box | Uni-Flange Series 1455 | 3 to 20 |
| Sigma Corporation | One-Lok SLDEH | 3 to 20 |
| Star Pipe Products | StarGrip 3100P Series | 3 to 20 |
| U.S. Pipe and Foundry Company | Field Lok Gasket | 4 to 20 |

| Bolt-Through Mechanical Joint Restraint | | |
|--|----------------------------|-----------------------|
| Manufacturers | Models | Sizes (Inches) |
| InFact Corporation Waterworks Products | Foster Adaptor | 3 to 20 |
| Star Pipe Products | MJ x MJ Adapter Series 100 | 3 to 20 |

| Hydrants and Valve Restraint – DI Pipe |
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| Mueller Aquagrip Restraint Device |

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