

SECTION 33 11 00.14**HIGH DENSITY POLYETHYLENE (HDPE) CONNECTION RESTRAINT****PART 1: GENERAL**

1.01 SECTION INCLUDES

Furnishing and installing restrained couplings, wall anchors, and concrete anchors to restrain HDPE connections to existing pipelines of differing materials.

1.02 PERFORMANCE REQUIREMENTS

- A. Minimum Working Pressure for domestic water piping: 125 psig, unless otherwise indicated.

1.03 SUBMITTALS

- A. Submit manufacturer's product data, installation instructions, and certification for all materials to be furnished in accordance with Section - Submittals.
- B. Submit field quality-control test reports.

1.04 QUALITY ASSURANCE

- A. NSF Compliance
 - 1. Comply with NSF 14, "Plastics Piping Components and Related Materials," for plastic domestic water piping components.
 - 2. Comply with NSF 61, "Drinking Water System Components - Health Effects; Sections 1 through 9."

PART 2: PRODUCTS

2.01 RESTRAINED MJ ANCHORING COUPLING

- A. Butt fused HDPE x MJ Transition Adaptor must be used in conjunction with MJ Solid Sleeves or MJ Fitting Connections.

Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Independent Pipe Products, Inc.
- b. EBAA Iron Inc.
- c. Romac Industries, Inc.
- d. Smith-Blair
- e. Approved Equal

Standard: ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53
Body: Ductile Iron
Gland Ring: Heavy Body Ductile Iron Gland Ring
Accessories: Standard MJ Gasket, Solid sleeve and extra length T-Bolts.
Pressure Rated: DR 11

- B. Butt fused HDPE x DI Transition Adaptor must be used for plain end PVC or DIP connections.

Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Independent Pipe Products, Inc.
- b. EBAA Iron Inc.
- c. Romac Industries, Inc.
- d. Smith-Blair
- e. Approved Equal

Standard: ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53
Body: Ductile Iron
Gland Ring: Heavy Body Ductile Iron Gland Ring
Accessories: Ductile Iron, Standard MJ Gasket, and extra length T-Bolts.
Pressure Rated: DR 11

2.02 WALL ANCHOR

- A. Polyethylene Wall Anchor

Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Independent Pipe Products, Inc.
- b. Performance Pipe
- c. ISCO Industries, LLC
- d. Approved Equal

Standard: AWWA C906
Body: HDPE
Pressure Rated: DR 11
Size: Same as HDPE Pipe

- B. Electrofusion Flex Restraint

Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Georg Fischer Central Plastics
- b. Integrity Fusion Products, Inc.
- c. Approved Equal

Standard: PE 3408, ASTM S1248, and ASTM D3350
Body: HDPE
Pressure Rated: DR 11
Size: Same as HDPE Pipe

2.03 CONCRETE ANCHOR

- A. Refer to Division 3, Section 03 33 00, "Cast-In-Place Concrete" for concrete anchor.

PART 3: EXECUTION

3.01 INSTALLATION

- A. Install mechanical restraint and couplings in accordance with the device manufacturer's recommendations and instructions.
- B. Contractor shall wait 3 days after pouring concrete anchor and obtain a test result demonstrating a compressive strength of 3000 PSI before pressure testing the waterline.
- C. HDPE pipe shall be installed in the trench and shielded from direct sunlight to prevent heating up the HDPE pipe prior to pouring the concrete anchor.
- D. Pipe shall be joined by the butt fusion procedure.
- E. The heat fusion equipment and the joining procedures shall meet all conditions recommended by the pipe manufacturer.
- F. The contractor shall furnish evidence that thermal fusion be conducted by personnel that have received proper training in the use of fusion equipment according to the recommendations of the pipe supplier and fusion equipment supplier.
- G. Before joining, surfaces must be clean and dry.
- H. Handsaws or unlubricated chain saws shall accomplish pipe cutting.
- I. Butting ends of pipe shall be milled square prior to fusing and have the same DR ratio.
- J. Installation or butt-fused pipe shall not commence until fusion has passed the bent strap test. Test shall be performed by the contractor according to the manufacturer's recommendation and witnessed by the inspector or AWE.
- K. The inspector or AWE shall visually inspect each fusion joint and shall conduct random non-destructive inspections as appropriate.

- L. HDPE pipe shall be restrained to all non-polyethylene mechanical connections with a concrete wall anchor and an in-line joint restraint.
- M. Concrete anchor shall be poured against firm natural ground.
- N. Concrete anchor shall be poured with Class "A" concrete.

END OF SECTION 33 11 00.14