

SECTION 15131

PIPING SPECIALTIES **(Contractor Furnished)**

PART 1: GENERAL

1.01 SCOPE

This Specification Section covers the furnishing and installation of miscellaneous piping specialties as shown on the Drawings or as required to fulfill the intent of the project.

PART 2: PRODUCTS

2.01 POLYETHYLENE ENCASEMENT

- A. Polyethylene encasement shall conform to AWWA Standard C105. The polyethylene film supplied shall be clear in color (V-Bio Enhanced Polyethylene encasement shall be white in color and V-Bio is Optional as directed by the Engineer) and distinctly marked (at minimum 2 foot intervals) with the following information:
 - 1. manufacturer's name (or trademark),
 - 2. year manufactured,
 - 3. minimum film thickness and material type (LLDPE or HDCLPE),
 - 4. range of nominal pipe diameter size
 - 5. ANSI/AWWA C105/A21.5 (compliance)
 - 6. A warning "WARNING-CORROSION PROTECTION-REPAIR ANY DAMAGE
 - 7. labeled "WATER" (Not on V-Bio)
- B. Tape shall be polyethylene compatible adhesive and a minimum of 1.5" wide. Shall be Scotchwrap #50 or Sigma #355.
- C. Store all polyethylene encasement out of the sunlight. Exposure of wrapped pipe should be kept to a minimum.
- D. Polywrap shall be clear in color and be 12 mils thick. (V-bio shall be white in color and 8 mils thick).
- E. Approved Manufacturers
 - AA Thread Seal Tape, Inc.
1275 Kyle Court
Wauconda, IL 60084
 - SIGMA Corporation
700 Goldman Drive
Cream Ridge, NJ 08514
 - Peistrup Paper Products
1185 Research Blvd
St. Louis, MO 63132

V-Bio

Balcan Plastic LTD –First Film Extruding
9340 meaux Street
Saint Leonard, QC HIR 3H2

Crayex Corporation
1747 Commerce Drive 455 Highway 155 South
Piqua, OH 45356 McDonough, GA 30253

2.02 VALVE BOXES

- A. All valves shall be provided with valve boxes of a design approved by the Engineer. Valve boxes shall be of the standard, adjustable, cast iron extension type, multiple piece, 5-1/4-inch shaft, screw type, and of such length as necessary to extend from the valve to finished grade. The valve box shall be hot coated inside and out with asphaltic compound.
- B. Valve boxes shall be manufactured by one of the following “approved manufacturers: Bingham & Taylor, Mueller, Handley Industries, A.Y. McDonald, Quality Water Products, or Clay and Bailey.
- C. Valve box bases shall conform to the following:

<u>Valve Size</u>	<u>Base</u>
4" and smaller	round, 8" in height, 10-7/8" diameter at bottom
6" and 8"	round, 11" in height, 14-3/8" diameter at bottom
10" and larger	oval, 11" in height, 15" x 11-1/8" diameter at bottom

2.03 RODS, BOLTS, LUGS AND BRACKETS

- A. All steel bolts including the nuts, washers, lugs, clamps, and brackets used for bolt accessories shall conform to AWWA C111 standards and shall be factory coated with an approved PTFE Fluoropolymer coating. Threaded rod including the nuts and standard washers used for threaded rod accessories shall meet ASTM F1554 Grade 55 or Grade 105 with Heavy Hex DH nuts and shall be coated with PTFE Fluoropolymer coating. Threaded rod shall meet the quantity and diameter requirements for Trumbull Part numbers 364-4104 thru 364-4114 flange lugs. Approved PTFE Fluoropolymer coating products include Fluorokote #1 TM, or XylanTM Series 1420, 1421, 1424, or approved equal. PTFE Fluoropolymer coatings shall be baked on or thermally set by the coating manufacture. The PTFE coating requirement is available yet it is new to some

manufactures and the CONTRACTOR shall adjust scheduling to accommodate any extra time needed to special order these products.

- B. Duc Lugs, Flange Lugs, and Socket Clamps shall be manufactured by one of the following approved manufactures;

Trumbull Industries, Inc.
1040 N. Meridian Rd.
PO Box 1556 Youngstown, Ohio 44501 (for use with Ductile Iron Pipe only).

Star Pipe Products, Inc.
4018 Westhollow Parkway
Houston, TX 77082 (Duc Lugs for use with Ductile Iron Pipe only).

- C. After field installation, all steel surfaces shall receive a petrolatum wax tape coating in accordance with AWWA Standard C217. Approved wax tape products are Tapecoat®, Envirotape®, Denso Densyl Tape, or approved equal. Surface preparation and tape installation shall be in accordance with ASTM C217 and the manufacturer's recommendations. Subject to approval by the ENGINEER, an alternative corrosion protection for exposed buried metal is an aerosol applied rubberized coating. The material shall be rapid dry and specifically designed for corrosion protection. 3M Rubberized Underseal Undercoating 08883 or any equivalent rubberized-bitumen based spray-on undercoating may be used. Follow manufacturer's recommendations for storage and application.

2.04 RESTRAINT PRODUCTS

A. Specialty Retaining Glands

- i. All retaining glands shall be ductile iron with ductile iron set screws or ductile iron gripping wedges and conform to AWWA C111 standards and ASTM F1674 for use on AWWA C900 PVC pipe. Pressure ratings shall meet the pressure rating of the pipe in accordance to AWWA C111 joint accessories. Retainer Glands shall be coated with an electrostatically applied baked on polyurethane coating or approved equal. Locking wedges, bolts, and set screws shall be PTFE Fluoropolymer coated with Xylan™ Series 1420, 1421, 1424, or Fluorokote #1™ or approved equal.
- ii. Retaining glands shall be installed in accordance to manufacture recommendations and shall be manufactured by one of the following approved manufacturers:

EBBA Iron, Inc.
PO Box 857
Eastland Texas 76448.
For use with Ductile Iron pipe and AWWA C900 PVC pipe

Star Pipe Products, Inc.
4018 Westhollow Parkway
Houston, TX 77082 (Stargrip 3000 only).
(for use with Ductile Iron pipe only).

ROMAC Industries, Inc.
21919 20th Ave SE Suite 100
Bothell, WA 98021 (**ROMAC GRIPRING** only).
For use with Ductile Iron pipe and AWWA C900 PVC pipe

B. Specialty Restraint Couplings

- i. Restraint couplings are for use in the transition of two different pipe materials and shall meet the pressure rating of the pipe material with the lower pressure rating. Protective coatings and accessories shall meet Section 15131.204.A.i or approved equal.
- ii. Restraint couplings shall be installed in accordance to manufacture recommendations and shall be manufactured by one of the following approved manufacturers:

ROMAC Industries, Inc.
21919 20th Ave SE Suite 100
Bothell, WA 98021 (ROMAC **Alpha** Restrained Joint couplings for use with all ductile and plastic pipe, including HDPE).

Krausz Industries Krausz USA
331 SW 57th Ave
Ocala, FL 34474 (HYMAX GRIP 250 psi working pressure fittings only. The standard pressure fitting is not permitted. For use on all metal and plastic pipe).

Infact Corporation
1283 Gateway Drive
Gallatin, TN 37066 (**Foster Adaptor** and **FLEX ADAPTOR** only). All bolts and hardware shall be factory coated with PTFE or Fluorokote #1 coatings.
For use with Ductile Iron pipe only.

2.05 TEST /TRACER BOXES

- A. All test/tracer boxes shall be 18" plastic box flared and squared at base and have a 4" I.D. with a 1 ½" cast iron flange. Lid shall be a one piece locking lid with "Test Station" marked on lid and shall contain 5 screw-type brass terminals on a non conductive terminal board.
- B. Test/tracer boxes shall be manufactured by one of the following "approved manufacturers":

Handley Industries, Inc.
2101 Brooklyn Rd.
Jackson, MI 49203
Model T-45

2.06 MARKING POSTS

- A. All marking posts shall be Rhino FiberCurve™ with PolyTechCoating or equivalent fiber-composite marking posts. The color shall be standard blue for water and the length shall be a minimum 66-inches. The decals be UV stable all weather type with a no dig symbol and white and contrasting white and blue vertical lettering: Butterfly and Gate Valves decals (Rhino GD-5226C) Blow-Offs decals (Rhino GD-5411C) Pipeline decals (Rhino GD-1333C).
- B. Marking Posts shall be manufactured by one of the following "approved manufacturers":

Rhino
280 University Drive Southwest
Waseca, MN 56093
1-800-522-4343

Carsonite International
605 Bob Gifford Boulevard
Early Branch, SC 29916
1-800-648-7916

PART 3: EXECUTION

3.01 INSTALLATION

Install "piping specialties" in accordance with the general provisions provided in Specification Section 15000 and the following:

A. Clear Polyethylene Encasement

1. Encase piping in polyethylene to prevent contact with surrounding backfill and bedding material in all areas shown on the plans or designated by the Engineer. Polyethylene shall be 12 mils.
2. Install the polyethylene material in accordance with the DIPRA Field Polyethylene Installation Guide and AWWA Standard C105. Polyethylene shall fit snugly and not tightly stretched. All holes or tears shall be repaired with tape. Large holes or tears shall be repaired by taping another piece of polyethylene over the hole. Tape or plastic tie straps at joint overlaps and at every 3 foot interval.

3. Dig bell holes and slide polywrap over the adjacent pipe and provide a minimum of 1 foot of overlap. Tightly secure bottom of polywrap using two to three passes of polyethylene tape on the pipe to polywrap connection and the overlap polywrap to polywrap connection.
4. Where polyethylene wrapped pipe being installed connects to a pipe that is not wrapped (including existing pipe), extend the wrap a minimum of 3 feet onto the previously uncovered pipe. This includes service lines which may be wrapped in polyethylene or dielectric tape.
5. Exposure of wrapped pipe to sunlight should be kept to a minimum. Pipe can be stored with the polywrap on for a maximum of 14 days.
6. At no time shall the polywrapped pipe be subjected to a point load during handling, temporary storage, or installation. The polywrap must be moved away from the timbers or hoisting device while on the pipe to prevent point loads and resulting pin holes.
7. Direct service taps for polyethylene encased pipe shall follow the procedure described in AWWA Standard C600. Access to the main for tapping through polyethylene is accomplished by making two to three passes of polyethylene tape around the pipe and over the polywrap. The tap is to be made directly through the tape and polywrap.
8. Tape shall be polyethylene compatible adhesive and a minimum of 1.5" wide. Shall be Scotchwrap #50, Fulton #355, or Polyken #900.

V-Bio Enhanced Polyethylene Encasement

9. When using V-Bio Enhanced Polyethylene Encasement installation shall meet the installation recommendations of AWWA C105 and also meet the DIPRA Modified Method A V-Bio Enhanced Polyethylene Encasement Installation Video.

<https://www.dipra.org/ductile-iron-pipe-resources/videos-webinars/v-bio-enhanced-polyethylene-encasement-installation-video>

B. Valve Boxes

Valve boxes shall be supported so that no load can be transmitted from the valve box to the valve. See Detail Drawing 0201-0601-SD59. Make sure that the bottom of the box is centered over the operating nut and runs perpendicular to the horizontal.

C. Air Release Valve Assemblies

See Detail Drawings for a typical air release valve assembly.

D. Air Blow-off

See Detail Drawings for air blow-off details.

E. Corporations and Curb Stops

Service line piping shall be compatible with corporation and curbs stops provided with appropriate protection between dissimilar materials and a minimum of interconnecting fittings

F. Test/Tracer Wire Boxes

Boxes shall placed at areas designated in the plans and shall be flush with existing grade unless otherwise noted.

G. Marker Posts

Install Marker Posts using equipment designed for its installation per manufacturer guidelines and place at locations noted in the drawings or as approved by Engineer.

END OF SECTION