

## Section 15155

## COUPLINGS AND COUPLING ADAPTERS

## PART 1 GENERAL

## 1.01 SUMMARY

This Section covers couplings and coupling adapters for ductile iron and steel pipe.

## 1.02 MEASUREMENT AND PAYMENT

- A. No separate payment for Work performed under this Section. Include cost of same in Contract price bid for Work of which this is a component part.
- B. Refer to Section 01270 – "Measurement and Payment" for unit price procedures.

## 1.03 REFERENCES

This specification references the following publications in their current editions. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

- A. ASME B1.1: Unified Inch Screw Threads (UN and UNR Thread Form)
- B. ASME B18.2.2: Nuts for General Applications: Machine Screw Nuts, Hex, Square, Hex Flange, and Coupling Nuts (Inch Series)
- C. ASTM A36/A36M: Standard Specification for Carbon Structural Steel
- D. ASTM A307: Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60000 PSI Tensile Strength
- E. ASTM F3125/F3125M: Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
- F. AWWA C200: Steel Water Pipe, 6 in. and Larger
- G. AWWA C606: Grooved and Shouldered Joints
- H. AWWA M11: Steel Pipe – A Guide for Design and Installation
- I. AWWA C219: Bolted, Sleeve-Type Couplings for Plain-End Pipe

## 1.04 SUBMITTALS

- A. Submit the following under the provisions of Section 01330 – "Submittals Procedures."
  - 1. Completed manufacturer's data sheets, cut sheets, and catalog data.

2. Manufacturer's written and illustrated instructions for the construction and installation method.
3. Instruction for handling and storage.
4. Dimensions and weight.

#### 1.05 RELATED REQUIREMENTS

- A. Section 01270 – "Measurement and Payment"
- B. Section 01330 – "Submittal Procedures"
- C. Section 02501 – "Ductile Iron Pipe and Fittings"
- D. Section 02502 – "Steel Pipe and Fittings"
- E. Section 09902 – "Painting and Protective Coating"

1.06 – 1.13 (NOT USED)

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURER(S)

- A. Sleeve Type Coupling
  1. Dresser Style 38
  2. Baker Series 200
  3. Viking Johnson Large Diameter Couplings
  4. ROMAC Style 400
  5. Or approved equal
- B. Flanged Coupling Adapters
  1. Dresser Style 128
  2. Baker Style 602
  3. Viking Johnson Large Diameter Flange Adaptors
  4. ROMAC Style FC400
  5. Or approved equal
- C. Dismantling Joints (restrained with tie rods)

1. Dresser Style 131
  2. Baker Dismantling Joint
  3. ROMAC Style DJ400
  4. Or approved equal
- D. Restrained Couplings for Ductile Iron Pipe
1. EBAA Series 3800
  2. ROMAC Style 400RG
  3. Smith-Blair Series 470
  4. Or approved equal
- E. Restrained Flanged Coupling Adapters for Ductile Iron Pipe
1. Smith-Blair Series 911
  2. ROMAC RFCA
  3. Or approved equal
- 2.02 MATERIALS AND/OR EQUIPMENT
- A. Steel Couplings
1. Bolted Split Sleeve Coupling
    - a. Joints for lined piping:
      - i. Provide bolted split sleeve couplings only, welding is not permitted with epoxy lined piping.
      - ii. Provide in accordance with Section 02501 – “Ductile Iron Pipe and Fittings.”
  2. Sleeve Type Coupling
    - a. Joints for lined piping:
      - i. Provide sleeve couplings only, welding is not permitted with epoxy lined pipe.
    - b. Outside diameter and out-of-round tolerances to be within limits specified by coupling manufacturer.

- c. Provide materials in accordance with AWWA C219 or acceptable equivalent or better material.
- d. Provide hardened steel washers in accordance with ASTM F3125/F3125M.
- e. Nuts and bolts:
  - i. Provide bolts and bolt-studs in accordance with ASTM A307 and ASME B1.1 with hexagonal or square heads, coarse thread fit, threaded full length with ends chamfered or rounded.
  - ii. Project bolt ends 1/4-inch (6 mm) beyond surface of nuts.
  - iii. Provide hexagonal nuts with dimensions in accordance with ANSI B18.2.2 and coarse threads in accordance with ASME B1.1.
- f. Provide middle ring of each mechanical coupling with a thickness at least equal to that specified for size of pipe on which coupling is to be used and not less than 10 inch long for pipe 30 inch and larger and not less than 7 inch long for pipe under 30 inch in diameter.
- g. Omit pipe stop from inner surface of middle rings of couplings to permit removal of valves, flow meters, and other installed equipment.
- h. Provide pipe stops in other couplings.
- i. Provide cleaning and shop priming with manufacturer's standard rust inhibitive primer.
- j. Where noted or indicated on Plans, provide restraining harness and tie rods for coupled steel pipe joints designed according to AWWA M11. Weld harness to steel pipe prior to application of lining.
  - i. Provide harness lugs placed and provide harness bolts of length such that coupling can be slipped at least in one direction to clear joint. Provide harnesses and tie rods designed to withstand test pressure indicated in Process Pipe Schedule.
- k. Provide plain end type ends to be joined by mechanical couplings in accordance with AWWA C200.
- l. Where restrained joints for coupling Ductile Iron Pipe joints are noted or indicated on Plans, provide EBAA, Smith-Blair, or ROMAC restrained sleeve couplings or approved equal.

3. Flanged Coupling Adapters
    - a. For Ductile Iron Pipe where a restrained joint is required or designated on Plans, provide restrained flanged coupling adapters.
    - b. For Steel Pipe where a restrained joint is required or designated on Plans, provide harness and tie rods of sufficient number and strength to restrain coupling at test pressure as indicated in Process Pipe Schedule according to AWWA M11.
  4. Dismantling Joints
    - a. Provide dismantling joints with tie rods of sufficient number and strength to restrain joint at test pressure as indicated in Process Pipe Schedule.
- B. Ductile Iron Couplings
- Minimum thickness for use with grooved couplings conforming to AWWA C606:
1. Pipe for use with couplings:
    - a. Ends shall be plain.
    - b. With bolted split sleeve couplings, ends cast or machined at right angles to axis.
    - c. With grooved type coupling:
      - i. Ductile iron of thickness specified in Section 02501 – “Ductile Iron Pipe and Fittings”.
      - ii. Grooved End dimensions conforming to AWWA C606 for flexible or rigid joints to suit joint requirements.
  2. Flexible Connections
    - a. Use either groove couplings or restrained sleeve couplings as indicated on Plans.
  3. Bolted Split Sleeve Couplings
    - a. Pressure rating at least equal to that of related pipeline.
    - b. Provide with gaskets of composition designed for exposure to liquid within pipe.
    - c. Provide gaskets with copper tips for electrical continuity through joints.

4. Grooved Couplings
  - a. Conform to AWWA C606.
  - b. Minimum pipe wall thickness specified under “Pipe for use with couplings.”
  - c. Where grooved couplings are indicated to provide for expansion or flexibility, cut pipe grooves to provide necessary expansion of flexibility.
  - d. Where grooved couplings are used instead of flanged joints, joint to be of rigid type with pipe grooves cut to bring pipe ends together. Beam strength of joint shall be equal to or greater than that of flanged joint.

2.03-2.04 (NOT USED)

### PART 3 EXECUTION

3.01-3.02 (NOT USED)

#### 3.03 INSTALLATION

##### A. Installation of Flanged Coupling Adapters and Dismantling Joints

- 2.1 Install flange coupling adapters and dismantling joints in strict accordance with coupling manufacturer’s recommendations.

##### B. Grooved Couplings

- 2.1 Clean grooves and other parts.
- 2.2 Coat ends of pipe and outside of gasket with soft soap or silicone and slip gasket over one pipe end.
- 2.3 Bring pipes to correct position and center gasket over pipe ends with lips against pipe.
- 2.4 Place housing sections, insert bolts and tighten nuts until housing sections in metal-to-metal contact.
- 2.5 After assembly and inspection and before backfilling, coat exterior surfaces of buried couplings, including bolts and nuts, with heavy-bodied bituminous mastic.

#### 3.04 COATING

All couplings and coupling adapters covered by this Section shall be coated per the requirements listed in Section 02501 – “Ductile Iron Pipe and Fittings,”

NORTH HARRIS COUNTY REGIONAL WATER AUTHORITY  
STANDARD SPECIFICATION **COUPLINGS AND COUPLING ADAPTERS**

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Section 02502 – “Steel Pipe and Fittings” and Section 09902 – “Painting and Protective Coating.”

3.05-3.10 (NOT USED)

END OF SECTION