

NEWPORT WATER DISTRICT

Material Specifications

The Newport Water District reserves the right to accept or reject materials when in the best interests of the District.

NOTE: Any reference to a particular standard shall mean the latest revision.

ONLY "LEAD FREE" PRODUCTS MEETING: NSF/ANSI 372, NSF/ANSI 61-G & NSF/ANSI 61 Section 9-G ARE ACCEPTABLE.

1. BLANK FLANGES

250 lbs. Class 125-bolt hole (C115/A21.15)

2. BRASS FITTING FOR TYPE "K" COPPER TUBING

3/4-inch through 2-inch brass fittings conforming to ANSI/AWWA C800 for type "K" soft copper shall be 110 compression fitting on the copper end manufactured by Mueller or approved equal by the Newport Water District.

A. BRASS MISCELLANEOUS

Shall be 125 lbs., red brass with iron pipe threads (National Pipe Thread) when used for connecting water services. Items included are bushings, couplings, elbows, nipples, plugs, and tees.

B. CORPORATION STOPS

3/4-inch and 1-inch shall be brass, ball valve type construction with inlet AWWA CC thread and compression pack joint on the outlet, heavy patterns, and conforming to AWWA/ANSI C800.

1 1/2-inch and 2-inch shall be brass with inlet AWWA CC tapered thread and compression pack joint with internal grip ring on the outlet, heavy patterns, and conforming to AWWA/ANSI C800. Manufactured by Mueller or approved equal by Newport Water District.

C. CURB STOPS Shall be brass, ball valve type, or approved equal with compression pack joints on either end. Open left.

No drain, heavy patterns, and conforming to AWWA/ANSI C800. Manufactured by Mueller or approved equal by Newport Water District.

3. COPPER TUBING

Shall be type "K" soft copper (ASTM B88). * The district's typical residential service standard is 1-inch diameter.

Copper tubing size (CTS) high density polyethylene tubing

Shall have a working pressure rating of 200 P.S.I. and shall conform to AWWA C901, ASTM D3350 and ASTM D2737.

Note: Stainless steel inserts are required when CTS is used with compression fittings.

4. COPPER METER SETTERS/YOKES

Meter setters for, 5/8 x 3/4-inch, 3/4-inch and 1-inch meters shall be Mueller B-2448-2A (with angular ball valve and approved dual check). Setter shall have male iron pipe thread (NPTM) for the inlet and outlet. The setter/yoke shall be installed with Mueller 110 compression by female iron pipe (NPTF) adapters (or approved equal by Newport Water District). Two meter gaskets shall be supplied with each setter. Meters larger than 1-inch shall be flanged mount.

Note: Newport Water District's Cross Connection Control Program may require a testable backflow device. Please consult with the water district to confirm cross connection control requirement.

5. **DUC LUGS AND TIE BOLTS**

Duc lug bolts shall be Star Supply Corp. or approved equal by Newport Water District.

Mechanical joint nuts and bolts will be Corten or Ductile Iron and shall conform to AWWAC-111, 11,-7.7 and ANSIA21.11 for high strength low alloy steel with a minimum yield strength of 45,000 psi and an elongation in 2" increments of 20%..

6. **FLANGED ADAPTERS**

Flanged adapter couplings shall have either a ductile iron ASTM A536 or gray iron ASTM A126 body. Bolt circle, bolt size, and spacing shall conform to ANSI 150 lbs. flange drilling. Grade 30 gasket with either a malleable iron ASTM A47 or ductile iron ASTM A536 follower. Anchor studs shall be installed for a minimum working pressure of 125 psi. Bolts and nuts shall be ductile iron ASTM A536, Smith-Blair, or approved equal by Newport Water District.

7. **HYDRANTS**

Shall be compression type conforming to AWWA/ANSI C502. Hydrants approved are Mueller Centurion 250, American Flow Control Waterous Pacer WB-67-250 and U.S. Pipe Metropolitan 250- Model 94, with the following requirements:

1. Break flange construction
2. 5 1/4 inch main valve or larger
3. **Non self-draining** – (drain hole plugged)
4. Two 2 1/2 inch hose nozzles (National Standard Thread)
5. One 4 1/2 inch pumper nozzle (National Standard Thread)
6. Inlet connection – mechanical joint
7. Inlet connection size – six inch
8. **Direction of opening – Left (open counter clockwise)**
9. Operating nut – 1 1/2 inch pentagon pattern (National Standard)
10. Trench depth /bury depth– as specified
11. Hydrant color – Red
12. Packing – “O” ring
13. Nozzle cap chains required
14. Stainless steel nuts and bolts
15. Supplied with mechanical joint restraint accessories, high strength low alloy steel bolts and heavy hexagon nuts conforming to ANSI/AWWA C111/A 21.11.

8. **PIPE**

Ductile Iron: (2-inch diameter and larger). Pipe shall be ductile iron centrifugally cast with Tyton push-on joints conforming to AWWA/ANSI C151/A21.51, AWWA/ANSI C111/A21.11(for push-on joints). Pipe shall be Class 52, double cement lined and bituminous coated confirming to AWWA/ANSI C104/A21.4. Ten (10) percent of the pipe shall be suitable for field cutting and marked as such.

Plastic Pipe (pvc, polyethylene, other) Requires District written approval before using....

Tracer wire is required when using plastic pipe. Tracer wire must be have blue colored insulation and be approved for direct burial. Wire must be at least 12AWG .

PVC: Pipe shall conform to AWWA C-900 and shall be UL and FM approved (4-inch to 12-inch diameter). **Requires District approval before using.** Pipe shall be Class 150 meeting the requirements of DR 18. Standard laying lengths shall be 20 feet for all sizes. At least 80 percent of the total footage of pipe of any size shall be furnished in standard lengths. The remaining 15 percent can be random lengths at least 15 feet long. All pipes shall be clearly marked with one-inch letter 'WATER' at 12-inch intervals two sides 180 degrees apart the entire length. PVC pipe larger than 12 inch diameter shall meet AWWA C 905 standards.

Polyethylene (HDPE -3408 with ductile iron outside diameter): must Polyethylene pipe shall be Blue-Strip DR-11 rated for 160 PSI and meet AWWA C906 with ductile iron O.D. made from high density, extra high molecular weight compound equaling a PE 3408 designation and shall conform to ASTM-1248 and ASTM-3350; with a cell classification of 345434C. Pipe must be manufactured in accordance with AWWA Standard ANSI/AWWA C906-90 with respect to size.

9. PIPE COUPLINGS

Sleeve shall be ductile iron ASTM A536, and shall have smooth inside taper for uniform gasket seating. Gasket shall be grade 30. Follower flanges shall be ductile cast iron ASTM A536. Bolts shall be high strength low alloy steel with heavy, semi-finished hexagon nuts to ANSI/AWWA C111/A21.11 standards. OD range shall be approved by the Newport Water District. Ford coupling, Smith-Blair coupling or approved equal by the Newport Water District.

10. PIPE FITTINGS

Ductile Iron Mechanical Joint Fittings: Pipe fittings shall be class 350 and have mechanical joint ends conforming to ANSI/AWWA A21.53/C-153 and ANSE/AWWA A21.11/C-111 for joints and ANSI/AWWA A21.4C-104 for cement lining in sizes 3" to 24". Mechanical joint nuts and bolts shall be Corten or Ductile iron , high strength, low alloy steel per ANSI/AWWA A 21.11/C-111.

Fittings shall be supplied with mechanical restraint joint accessories unless specified others, with high strength low alloy steel bolts and heavy hexagon nuts conforming to ANSI/AWWA C111,11-7.5 and ANSI A 21.11.

The mechanical joint nuts and bolts shall also have minimum yield strength of 45,000 psi and an elongation in 2" increments of 20%.

Long body fittings shall be Class 350 ductile iron confirming to ANSI/AWWA C110/A21.10.

Compact body fittings shall be Class 350 ductile iron confirming to ANSI/AWWA C153/A21.53.

Mechanical joint gaskets shall comply with AWWA C-111 and ANSI A21.11 for SBR (Styrene-Butadiene (synthetic) Rubber) gaskets.

11. REPAIR SLEEVES

Note: Ductile iron mechanical joint solid sleeves will be used unless otherwise approved by the district. In the case of repair, stainless steel wraps/clamps may be accepted by the district. Wraps shall have single band of 304 stainless steel with malleable iron ASTM A47 grade 32510 lugs, grade 30 gasket and high strength low alloy steel bolts with heavy semi-finished hexagon nuts conforming to AWWA/ANSI C111.A.21.11 or 3904 stainless steel bolts and nuts as manufactured by Smith-Blair 226 or approved equal by Newport Water District.

12. M J RESTRAINT GLANDS

Mechanical joint glands restraint shall be required unless otherwise identified in the project drawings and approved in writing by the district.

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Restraint glands shall be manufactured of high strength ductile iron conforming to the requirements of ASTM A536, Grade 65-45-12. Rated for a minimum working pressure rating as follows:

4-inch	350 psi
6-inch	350 psi
8-inch or larger	250 psi

Wedging mechanisms shall be manufactured of ductile iron, heat treated to a hardness of 370 BHN minimum. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee head bolts conforming to the requirements of ANSI/AWWA A 21.11C111 and ANSI/AWWA A21.53/C153 of latest revision. Twist-off nuts shall be incorporated in the design of the wedge activation screws to insure popper torque. The mechanical joint restraint device shall have a water working pressure rating of 350 psi minimum (in sizes 4" thru 16") with a safety factor of at least 2:1 against separation when tested in a dead-end situation.

Set screws shall be either "Cor-Ten" steel, ductile iron, or approved equal. The number of set screws shall be equal to or greater than the number or nominal diameter of the gland (i.e. four-inch, four sets of screws; six-inch, six sets of screws).

Locking ring type GripRing, Megalugs and Foster M J Adapters are acceptable restraint, but are not a replacement for thrust blocks.

13. SERVICE BOXES, COVERS, AND RODS

Service boxes shall be Erie style with arch pattern, one-inch in diameter, constructed from SC #40 Black Steel, adjustable in length from five feet to six feet, and have 5/8 -diameter stainless steel rod 24-inches in length with heavy brass or stainless steel pins. One-inch caps shall be extra heavy with brass pentagon plug and coarse "rope" thread to fit a one-inch Erie style box. Two-inch caps shall be a #3 cover, cast iron with brass bushing and brass pentagon plug to fit a two-inch Erie style box. All caps shall have the word "WATER" clearly cast in top and be constructed of a magnetic material.

14. SERVICE BOX FOOT PIECE

Service box foot pieces shall be cast iron and fit all standard one-inch Erie style service boxes and fit over curb stops larger than one inch.

15. SERVICE SADDLES

Shall be constructed of ductile iron with nylon coating and with stainless steel double bands, nuts, and washers. Body casting shall be wrap-around design of high tensile ductile iron conforming to ASTM A536. Gasket shall be of 3 1/2-inch diameter and constructed of Buna-N, grooved to conform to pipe surface and bonded in place for easy installation. Finish shall be NCA-1477 nylon fused coat, 10-12 mils thickness, with approximate dielectric strength of 1,000V/mil or epoxy coated. Ford 202N, Smith-Blair 317 or approved equal by Newport Water District.

16. TAPPING SLEEVES

Mechanical joint tapping sleeve: shall be ductile iron construction meeting ASTM A536 Grade 65-45-12 shall have mechanical joint end seals conforming to AWWA C111, with outlet flange conforming to AWWA C207, class D with ANSI 150 lb. drilling recessed for tapping valve. Tapping sleeve shall fit AWWA standard of 1908, Class ABCD pipe diameter. Sleeve shall be coated with asphaltic varnish in compliance with NSF-61. Manufactured by Clow, Mueller, AP Smith, or approved equal. Acceptable for cast iron and ductile iron pipe.

Stainless steel tapping sleeve: shall be 304 stainless steel, outlet flange conforming to AWWA C207 Class D, ANSI 150 lb, drilling recessed for tapping valve. Bolts shall be high strength 18-8 stainless steel with heavy hexagon nuts conforming to ANSI/AWWA C111/A21.11.

Gasket material shall be grade 30 or approved equal, and shall have a smooth inside taper for uniform seating. Acceptable for ductile iron pie.

Note 2: All pipe size on- size-taps require MJ ductile iron tapping sleeves.

17. TAPPING VALVES

Tapping valves shall be epoxy coated with 200 psi working pressure, non-rising stem, “O” ring, open right flanged end conforming to AWWA C207, Class D, ANSI 150 lb. drilling, mechanical joint end conforming to AWWA C111, two-inch ductile iron operating nut with stainless steel bolt, metropolitan design conforming to AWWA C500 or resilient seated gate valve conforming to ANSI/AWWA C509, manufactured by Waterous Series 500, American Darling CRS 80, Mueller A2360, or approved equal.

Tapping valves shall be supplied with mechanical joint accessories, high strength low alloy steel bolts, and heavy hexagon nuts conforming to ANSI/AWWA C111.A21.11.

Tapping valves seal plates and bonnets shall have either all silicone bronze or 316 stainless steel bolts and nuts.

18. VALVES

All valves shall be open left unless otherwise requested. Valves shall be epoxy coated and supplied with mechanical restraint joint accessories, high strength alloy steel bolts and heavy hexagon nuts conforming to ANSI/AWWA C111.A21.11.

Valve seal plate and bonnet shall have either all silicone bronze or 316 stainless steel bolts and nuts.

Butterfly Valve: (16 inch diameter and larger). Shall be 200 psi working pressure, open right, mechanical joint ends, non-rising stem, two-inch ductile iron operating nut with stainless steel bolt, conforming to AWWA/ANSI C504. Manufactured by Allis-Chalmers, Clow, Dresser, Mueller, or Pratt.

Gate Valve: All gate valves shall meet or exceed the requirements of AWWA C-515 and will be UL and FM approved. Resilient Wedge meeting the requirements of AWWA C-153 and AWWA C-515 non-rising stem, “O” ring, open left, mechanical joint, two-inch ductile iron operating nut, resilient seated gate valve conforming to ANSI/AWWA C515, manufactured by Waterous F Series 500, American-Darling CRS 80, Mueller 2360, or approved equal by Newport Water District.

19. VALVE BOXES

Shall be cast iron, manufactured in North America, two piece, sliding type with a flange top section, no inside stops, and an outside shaft diameter of six inches. Bottom section shall be belled base. Length of top section shall be a minimum of 24-inches. Middle and bottom section length as needed to provide at least twelve inches of remaining adjustment rise after being set in place. Boxes shall have the word “WATER” clearly cast into the cover.

All Materials Shall be Manufactured in North America