



**Approved Materials List
for Water Distribution Reclaimed System**

Materials Testing and Inclusion Procedures

Manufacturers who would like materials considered for the approved materials list shall:

1. Comply with all the design criteria set forth for the approved materials.
2. Supply, at the manufacturer's expense, the materials to be tested. (Quantity to be determined by the City of Goodyear Environmental Services Division)

Once the materials have been received, the Environmental Services Division will visually inspect materials for defects and compliance with all City standards. The Environmental Services Division will install or oversee the installation of all materials in the distribution system or other test sites as determined to be in the best interest of the City. Materials will be tested and evaluated for a minimum of one year, commencing on the date of installation. Evaluations will include but are not limited to:

1. Ease of installation.
2. Availability of parts.
3. Operational issues.
4. Quality of manufactured materials.
5. Number of moving parts.
6. Reliability of service.

If the materials supplied, at any time in the one year testing period fail, the testing will be concluded immediately. If the materials successfully complete the testing period, Environmental Services Division will recommend the product to be included in the City of Goodyear Approved Materials List.

The Approved Materials List will be updated annually at the first of each year. New Manufactures and Models that have been approved by the City for inclusion on the list will be added at that time.

A maximum number of manufacturers will be approved for each category. Once a category has been satisfied, manufacturers successfully completing the test requirements will be added to a Pending Approved Materials list. Pending materials will be listed sequentially according to successful completion of testing. Materials presently on the Approved Materials List may be omitted from the list due to:

1. *a change in service/availability.*
 2. *a change in product design.*
 3. *bankruptcy.*
 4. *consistent product failure.*
 5. *any reasons deemed appropriate by the Environmental Services Division Staff.*
- If an approved material is taken off the list for any of the above reasons, the first pending material will be added to the list.*

Water Distribution Materials

Hydrants (3 Manufacturers)

Requirements

- Preference will be given to hydrants manufactured and assembled in the United States
- Meet AWWA Standard C502 and C550
- Dry barrel hydrant
- Method of lubrication shall be food grade oil or grease
- Operating nut shall be 1-1/2 inches pentagon (standard)
- Direction of opening shall be counterclockwise (left)
- Hose and pumper threads (male) shall be brass and field replaceable
- Threads shall be "National Standard"
- 2 hose nozzles (2-1/2 inches) and 1 pumper nozzle (4-1/2 inches)
- Inlet connection shall be mechanical joint
- Shall include "traffic flange" with stainless steel coupling
- Size of hydrant valve opening shall be 5-1/4 inches
- Operating stem shall be 304 stainless steel
- 304 stainless steel bolts and nuts below grade line
- Paint color shall be reclaimed purple from the manufacturer

<u>Manufacturer</u>	<u>Model</u>
Clow	Medallion
Kennedy	Guardian K-81D
Mueller	Super Centurion

Hydrant Grade Adjustments (1 Manufacturer)

Requirements

- Extensions shall **not** be used to reach finish grade for **new** hydrant installations.
- Where the finish grade around an existing hydrant is changed, an extension kit, installed per the manufacturer's specifications, may be used.
- Only one extension may be used per hydrant. The extension kit must be manufactured by the original hydrant manufacturer. No after market parts will be allowed.

<u>Manufacturer</u>	<u>Model</u>
Assured Flow Sales	Grade Loc

Hydrant Locks (0 Manufacturers)

Requirements

- must prevent unauthorized opening of hydrants
- readily attaches to all hydrant makes and models
- must be strong enough to withstand vandalism and weather extremes
- hydrant must be operated without removal of lock utilizing magnetic type wrench only

<u>Manufacturer</u>	<u>Model</u>
Under Review	To be determined

Gate Valves (5 Manufacturers)

Requirements

- Preference will be given to gate valves manufactured and assembled in the United States
- Meet AWWA Standards C515 and C550
- Valves body shall be ductile iron and meet or exceed reduced wall standards
- Valve wedge shall be fully encapsulated with nitrile rubber
- Valves shall be epoxy-coated inside and out
- Stem o-rings shall be replaceable with the valve fully open at rated working pressure
- Direction of open shall be counterclockwise (left)
- All fasteners shall be stainless steel

Manufacturer	Model
American Flow Control	AFC 2500-1
Clow	Style 2638 or 2639
M&H	Style 7000
Kennedy	Style 7000
Mueller	Series 2361 or 2362

Insertion Valves (1 Manufacturer)

Manufacturer	Model
Romac	QuikValve Valve #361 Sleeve #310

Butterfly Valves (4 Manufacturers)

Requirements

- Butterfly valves are required on distribution mains larger than 16 inches.
- Preference will be given to butterfly valves manufactured and assembled in the United States
- Meet applicable AWWA Standards
- The valve disc shall be fully encapsulated in nitrile rubber
- Valves shall be epoxy coated inside and out
- All fasteners shall be stainless steel
- Direction of open shall be counterclockwise (left)

Manufacturer	Model
Clow	Series 4500 or 1450
Mueller	Lineseal III
Kennedy	Series 4500 or 1450
M&H	Series 4500 or 1450

Air/Vacuum Release Valves (1 Manufacturer)

Manufacturer	Model
ARI	D-025 W/Threaded Inlet and 1.5" X 2" ARI Bug Screen (Non-Potable Water Use)
ARI	D-020 W/Flanged Inlet and 1.5" X 2" ARI Bug Screen (Non-Potable Water Use)

Valve Boxes

Requirements

- 8" purple PVC C-900 Riser Material
- Installed per M.A.G. Detail 391-1 Type A with cast iron frame and cover with concrete collar

Water Meters (1 Manufacturer)

Requirements

- Appropriate make, model, and manufacturer is to be determined by the Water Resources Department. All meters are supplied by Water Resources.

Positive Displacement Meters 3/4" - 2"

Manufacturer	Model
Neptune	T-10

Turbo Meters 1-1/2" - 8"

Manufacturer	Model
Neptune	HP-Turbine

Compound Meters 3" - 6"

Manufacturer	Model
Neptune	Tru/Flow

Meter Reading Devices (1 Manufacturer)

Manufacturer	Model
Neptune	E-coder R900i

Water Meter Boxes / Vaults

Requirements

3/4" - 2" Meter Boxes

- Pre-cast concrete meter boxes
- Steel lid with a 1-7/8" pre-drilled hole
- #2 meter box shall be used for 3/4" and 1" water meters
- #4 meter box shall be used for 1-1/2" and 2" water meters and Air Relief Valves (ARV)

3" and above Meter Vault

- Pre-cast concrete vault with aluminum lids is required per C.O.G. Standard Details

Water Service Saddles (3 Manufacturers)

Requirements

- Meet applicable AWWA Standards
- Single strap brass saddle
- Thread shall be female iron pipe

Manufacturer	Model
Ford	S912, S91
AY McDonald	3806RW
Mueller	H-13000 series

Corporation Stops (3 Manufacturers)

Requirements

- Meet applicable AWWA Standards
- Inlet threads shall be iron pipe
- Shall utilize a ball valve
- The outlet shall utilize a compression style pack joint with a set screw

Manufacturer	Model
Ford	FBRW1100-TA
AY McDonald	4104B-22RWC
Mueller	P25028-21

Water Services

Requirements

- Minimum size service line is 1"
- Services 2" and smaller require type "K" soft seamless annealed copper
- Services 4" and larger require purple C900 pvc
- Services 2" and smaller require installation in purple vinyl sleeving which meets the following specifications:
 - Tensile strength: MD-3400psi / TD-2800psi
 - Density: 924
 - Elongation: MD-300% / TD-500%
 - Thickness: 0.006" (6mil) tolerance not to exceed 10%

Meter Valves/Curb Stops (3 Manufacturers)

Requirements

- Meet applicable AWWA Standards
- Angle stop ball valve with 90 degree Tee Head rotation
- Padlock wings
- The inlet shall utilize a compression style pack joint with set screw
- 1" curb stops shall have a swivel meter coupling to allow for meter installation
- 2" curb stops shall be flanged, have elongated bolt holes allowing for either 2" and 1 1/2" meters, and allow for drop in rubber gaskets

Manufacturer	Model
Ford	BFARW43-777W, BARW43-444W
AY McDonald	4602B-22RWC
Mueller	P-24258-20, P-24276-20

Reclaimed Water Mains

Requirements

- All water mains shall be purple C900 PVC
- Meet applicable AWWA Standards
- Minimum Class 150
- Bell & Spigot type only

Tapping Sleeves (0 Manufacturers)

Requirements

- Meet applicable AWWA Standards

Manufacturer

Under Review

Model

To be determined

Full Circle Repair Clamps (3 Manufacturers)

Manufacturer

Romac
Ford (Single Band)
Smith-Blair

Model

SS1, SL1
F1
221, 226, 229, 238

Flex Couplings (3 Manufacturers)

Manufacturer

Romac
Ford
Total Piping Solutions

Model

XR-501 Extended Range
FC2W Transition Coupling
HyMax 2000 Series

Flange Coupling Adapters (3 Manufacturers)

Manufacturer

Smith-Blair
Romac
Ford

Model

912
FC400/FCA 501/RFCA
FFCA

Restrained Joints Mechanical Style (4 Manufacturers)

Manufacturer

EBBA Iron
Romac
Ford
Star Pipe Products

Model

2000PV for C900 PVC
Roma Grip for PVC #RG-PVCAP
Uni-flange 1500 Series
PVC 4000 Series

Restrained Joints Gasket Style (0 Manufacturers)

Manufacturer

Under review

Model

To be determined

Electronic Locators (1 Manufacturer)

Requirements

- Passive (non-programmable 1408-XR) locators are to be used on straight lengths of pipe only. Non-passive (programmable 1428-XR/iD) locators are to be used and programmed at any change in direction. See C.O.G. standard details.
- Self leveling
- Operate at frequency 145.7 KHz
- Operate at bury depth of at least 4 feet

<u>Manufacturer</u>	<u>Model</u>
3M	1408-XR (passive)
3M	1428-XR/iD (ID ball marker)

Debris Caps (1 Manufacturer)

Requirements

- Hollow member having a cylindrical outer surface
- Flexible skirt that provides an outward seal
- Rated to 50 pounds at a loading rate of 1 inch / minute
- Molded per General Electric ABS #HIM 4500
- Retaining prong for locating coil
- 3M locating device
- Purple handle

<u>Manufacturer</u>	<u>Model</u>
SW Services Inc.	DC825 (purple handle) w/3M EMF 1418-XR Locating Coil

Backflow and Cross-Connection Devices

Requirements

- Refer to the approved assemblies list published by the USC Foundation for Cross-Connection Control and Hydraulic Research for backflow prevention and cross-connection devices and assemblies that are approved for use in the City.