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H 1 – PIPE ADAPTERS, NON-PRESSURE:

SPECIFICATION/ MATERIAL:

Non-pressure pipe adapters shall meet or exceed the performance specifications proscribed in:

- ASTM Standards D 5926 standard specification for Poly Vinyl Chloride (PVC) or manufactured with synthetic rubbers and ASTM Standards C 425 standard specification for watertight compression sealed joints of vitrified clay pipe and ASTM Standards C1173 standard specification for flexible transition couplings for underground piping systems.
- The connector shall be molded or extruded and vulcanized from materials whose physical/chemical properties meet or exceed the physical/chemical resistant properties outline in ASTM C 5926.
- The material shall resist ozone, weathering, aging, and chemicals, including acids, alkalis, animal and vegetable fats, oils and petroleum products.
- Bands and screw assembly shall be manufactured from totally non-magnetic series 300 stainless steel.
- The size and application colophons must be embossed on each adapter.

MANUFACTURER:

- FERNCO INC.
- INDIANA SEAL-GPK
- MISSION RUBBER

RESTRICTIONS:

- For repairs and connections to existing vitrified clay pipe (VCP) facilities.
- For repairs and connections to other pipe materials for resistance to heavy earth loads and improved alignment use.
## H 1.2 – PIPE ADAPTERS, CONCRETE MANHOLE CONNECTION BOOTS:

### SPECIFICATION:
Concrete manhole pipe adapters shall meet or exceed the performance specifications in:

- ASTM Standards C 923, Resilient connectors between reinforced concrete manhole structures, pipes and laterals.
- Manhole adapters shall create a watertight flexible seal around pipes entering sanitary manhole walls.
- The material shall resistant to ozone, weathering, aging, and chemicals, including acids, alkalis, animal and vegetable fats, oils and petroleum products.
- Shall be made of elastomeric Poly Vinyl Chloride (PVC), ethylene propylene (EPDM) or polyisoprene rubber.
- The size and application colophons must be cast on each adapter.
- Bands and screw assembly shall be manufactured from totally non-magnetic series 300 stainless steel.

### REQUIREMENT:
- Shall be used for connections to existing and new pre-cast manhole and structures.

### MANUFACTURER:
- A-Lok Products
- Kor-N-Seal (NPS)
- OPEN

### RESTRICTIONS:
**SPECIFICATION:**
Leak repair clamps shall meet or exceed the performance specifications of:

- ASTM Standards A536 ductile iron.
- 18-8 type 304 stainless steel.
- Gasket shall be securely glued or imbedded in the band of the clamp to ensure a positive seal against the pipe.
- Gaskets shall have ribbed surface.

**MATERIAL:**
- **Lugs:** Ductile iron per ASTM Standards A536
- **Band:** Stainless steel, 18-8 type 304.
- **Bolts, Nuts & Washers:** 316 stainless steel.
- **Gasket:** EPDM (ethylene propylene).
- Nitrile Buna-N (Acrylonitrile butadiene (NBR)).
- Viton; Fluorel (FKM)
- **Coating:** Ductile iron: shop coat.
- Stainless steel: none.

**DESIGN:**
For patching holes in iron pipe size O.D. pipe.

**WIDTH OF CLAMP/ NUMBER OF BOLTS:**
- 3": One (1) bolt
- 6": Two (2) bolts

**MANUFACTURER:**
- CASCADE CFC SERIES
- DRESSER STYLE 118
- FORD FSC SERIES
- JCM 110 SERIES
- MUELLER 212 SERIES
- TOTAL PIPING SOLUTIONS 4100 SERIES
- POWER SEAL 3151 SERIES
- ROMAC SC SERIES
- SMITH-BLAIR 245 SERIES

**RESTRICTIONS:**
- For repairs to existing, in-service pipelines by CFPUA personnel only.
H 3 – REPAIR CLAMPS/ ALL STAINLESS STEEL (PIPE SAVERS):

SPECIFICATION:
Leak repair clamps shall meet or exceed the Performance specifications of:

- 18-8 type 304 stainless steel.
- Type 304 cast stainless steel per ASTM Standards A743.
- Gasket shall be securely glued or imbedded in the band of the clamp to ensure a positive seal against the pipe.
- Lubricant treated nuts to prevent galling.
- Gaskets shall have ribbed surface.

MATERIAL:
Lugs:
- Type 304 cast stainless steel.
Band:
- Stainless steel, 18-8 type 304.
Bolts, Nuts & Washers:
- 316 stainless steel with lubricant treated nuts to prevent galling.
Gasket:
- EPDM (ethylene propylene).
- Nitrile Buna-N (Acrylonitrile butadiene (NBR)).
- Viton; Fluorel (FKM)
Coating:
- Stainless steel: none.

DESIGN:
- For patching holes in iron pipe size O.D. pipe.
- Only cast lug design will be accepted.

WIDTH OF CLAMP/ NUMBER OF BOLTS
- 3": One (1) bolt
- 6": Two (2) bolts

MANUFACTURER:
- FORD FLSC
- SMITH-BLAIR 248
- ROMAC SCS

RESTRICTIONS:
- For repairs to existing, in-service pipelines by CFPUA personnel only.
H 4 – FULL SEAL CLAMPS:

SPECIFICATION:
Full circle leak repair clamps shall meet or exceed the performance specifications of:

- ASTM Standards A536 ductile iron.
- 18-8 type 304 stainless steel.
- Gasket shall be securely glued or imbedded in the band of the clamp to ensure a positive seal against the pipe.
- Gaskets shall have ribbed surface.

MATERIAL:
Lugs:  
- Ductile iron per ASTM Standards A536

Band:  
- Stainless steel, 18-8 type 304.

Bolts, Nuts & Washers:  
- Low alloy steel per AWWA C 111.

Gasket:  
- EPDM (ethylene propylene).
- Nitrile Buna-N (Acrylonitrile butadiene (NBR)).
- Viton; Fluorel (FKM)

Coating:  
- Ductile iron: shop coat.
- Stainless steel: none.

DESIGN:  
- For patching full circle holes in cast iron pipe size O.D. pipe.

ADDITIONAL REQUIREMENTS:  
- Spring washers may be required for use on HDPE pipe (consult manufactures documentation).

MANUFACTURER:  
- CASCADE CDR1
- DRESSER STYLE 360
- FORD F1 SERIES
- JCM 101 SERIES
- MUELLER 500 SERIES
- POWER SEAL 3121 SERIES
- ROMAC CL1 SERIES
- SMITH-BLAIR 226 SERIES

RESTRICTIONS:  
- For repairs to existing, in-service pipelines only.
### H 5 – BELL JOINT LEAK CLAMP:

**SPECIFICATION:**
Leak repair clamps shall meet or exceed the Performance specifications of:

- ASTM Standards A536 ductile iron.
- Low alloy steel per AWWA C111.
- ASTM Standards D2000 gasket seals.

**MATERIAL:**
- **Bell and Spigot Rings:**
  - Ductile iron per ASTM Standards A536.
- **Bolts, Nuts & Washers:**
  - 316 stainless steel.
- **Gasket:**
  - EPDM (ethylene propylene).
  - SBR (styrene butadiene)
  - Nitrile Buna-N (Acrylonitrile butadiene (NBR)).
  - Viton; Fluorel (FKM)
- **Coating:**
  - Ductile iron: fusion bonded epoxy.

**DESIGN:**
- For leak repairs in bell joints on cast iron, ductile iron and C-900 PVC pipe.

**MANUFACTURER:**
- FORD FBC SERIES
- MUELLER PIPE JOINT REPAIR CLAMP
- POWER SEAL 3232 SERIES
- ROMAC STYLE 516

**RESTRICTIONS:**
- For repairs to existing, in-service pipelines only.
### H 6 – REPAIR COUPLING/ RESTRAINED/ DI, CI, PVC, & HDPE, (4” THRU 12”):

**SPECIFICATION:**
Restraining repair sleeves or couplings shall meet or exceed the performance specifications of:

- Shall connect and restrain two plain end pipes of the same or dissimilar materials.
- Shall provide axial restraint by use of multiple gripping wedges incorporated into the follower glands coupled together with threaded rods.
- ASTM Standards A536 ductile iron.
- Low alloy steel per AWWA C111 (ANSI - A21.11) or latest revision thereof.
- ASTM Standards D2000 gasket seals.
- Shall posses a minimum rating of twice (2:1) the pressure rating of the pipe.
- Material supplied must have ISO 9001 or later certification, or poured in a foundry located in the U.S.A.
- Affidavit of compliance to this specification shall be available upon request.

**MATERIAL:**

**End Ring & Sleeve Body:**
- Ductile iron per ASTM Standards A536, minimum 65-45-12.

**Bolts, Nuts & Rods:**
- Low alloy steel per ANSI/ AWWA C111/ A21.11.

**Gasket:**
- EPDM (ethylene propylene).
- SBR (styrene butadiene).
- Nitrile Buna-N (Acrylonitrile butadiene (NBR)).
- Viton; Fluorel (FKM).

**Coating:**
- Coupling Body: fusion bonded epoxy.

**APPLICATION:**
- For leak repairs to join two plain end pipes of the same or dissimilar material.
- For use on cast iron, ductile iron, HDPE, and C-900 PVC pipe.

**MANUFACTURER:**
- EBBA IRON – 3800 SERIES

**RESTRICTIONS:**
- For repairs to existing, in-service pipelines only.
- Insert stiffener is required on HDPE pipe.
## H 6.1 – REPAIR COUPLING/ NON-RESTRAINED/ TRANSITION (2” THRU 12“):

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<td>Non-restraining transmission repair sleeves or couplings shall meet or exceed the performance specifications of:</td>
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<tr>
<td>• Shall connect two plain end pipes of dissimilar or similar diameters.</td>
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<td>• Shall join pipes with diameter differences as listed in “Minimum Required Coupling Size Range” in a single coupling kit.</td>
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<tr>
<td>• Shall have a two layer gasket, with a removable layer to allow for pipe diameter range expansion OR have separate gaskets included in a boxed kit to cover the required size range.</td>
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<tr>
<td>• NSF-61 for gaskets and coatings.</td>
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<td>• Shall be pressure rated for a minimum working pressure of 150psi.</td>
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<tr>
<td>• Material supplied must have ISO 9001 or later certification, or poured in a foundry located in the U.S.A.</td>
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<tr>
<td>• Affidavit of compliance to this specification shall be available upon request.</td>
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| MATERIAL: | |
| End Ring & Sleeve Body: | |
| • Carbon Steel. | |
| • Ductile Iron. | |
| Bolts, Nuts: | |
| • 304 stainless steel with no-gall coating. | |
| Gasket: | |
| • EPDM (ethylene propylene). | |
| • SBR (styrene butadiene). | |
| • Nitrile Buna-N (Acrylonitrile butadiene (NBR)). | |
| • Viton; Fluorel (FKM). | |
| Coating: | |
| • Coupling Body & end rings: NSF-61 fusion bonded epoxy. | |

| APPLICATION: | |
| • For leak repairs to join two plain end pipes of dissimilar or similar diameters. | |
| • For use on cast iron, ductile iron, AC, and PVC pipe. | |

| MINIMUM REQUIRED COUPLING SIZE RANGE: | |
| 2"- (2.375” to 2.50”)-(IPS thru CIP) | |
| 3"- (3.50” to 4.13”)-(IPS thru AC 200) | |
| 4"- (4.50” to 5.35")-(IPS thru AC 200) | |
| 6"- (6.625” to 7.56")-(IPS thru AC 200) | |
| 8"- (8.625” to 9.74")- (IPS thru AC 200) | |
| 10"- (10.75” to 11.95")-(IPS thru AC 150) | |
| 12"- (12.75” to 13.20")-(IPS thru DIP) | |
| 12"- (13.20” to 14.38")-(DIP thru AC 350) | |

| MANUFACTURER: | |
| CASCADE WATERWORK MFG.- OMEGA CRCER | |
| FORD FC2W | |
| HYMAX | |
| ROMAC MACRO | |

| RESTRICTIONS: | |
| • For repairs to existing, in-service pipelines only. | |
| • Shall not be used where joint restraint is required. | |