

Section H: Repair Sleeves, Couplings, Clamps & Non-Pressure AdaptersEffective Date: 01-01-20
Revision #: 2

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H 1 – PIPE ADAPTERS, NON-PRESSURE:

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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 resistant to 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:

Effective Date: 01-01-20
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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:

H 2 – REPAIR CLAMPS/ DUCTILE IRON LUGS (PIPE SAVERS):

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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):		Effective Date: <u>01-01-20</u> Revision #: <u>2</u>
<p><u>SPECIFICATION:</u> Leak repair clamps shall meet or exceed the Performance specifications of:</p> <ul style="list-style-type: none"> • 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. <p><u>MATERIAL:</u> Lugs:</p> <ul style="list-style-type: none"> • Type 304 cast stainless steel. <p>Band:</p> <ul style="list-style-type: none"> • Stainless steel, 18-8 type 304. <p>Bolts, Nuts & Washers:</p> <ul style="list-style-type: none"> • 316 stainless steel with lubricant treated nuts to prevent galling. <p>Gasket:</p> <ul style="list-style-type: none"> • EPDM (ethylene propylene). • Nitrile Buna-N (Acrylonitrile butadiene (NBR)). • Viton; Fluorel (FKM) <p>Coating:</p> <ul style="list-style-type: none"> • Stainless steel: none. <p><u>DESIGN:</u></p> <ul style="list-style-type: none"> • For patching holes in iron pipe size O.D. pipe. • Only cast lug design will be accepted. <p><u>WIDTH OF CLAMP/ NUMBER OF BOLTS</u></p> <ul style="list-style-type: none"> • 3": One (1) bolt • 6": Two (2) bolts 		
<p><u>RESTRICTIONS:</u></p> <ul style="list-style-type: none"> • For repairs to existing, in-service pipelines by CFPUA personnel only. 	<p><u>MANUFACTURER:</u></p> <ul style="list-style-type: none"> • FORD FLSC • SMITH-BLAIR 248 • ROMAC SCS 	

H 4 – FULL SEAL CLAMPS:

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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).

RESTRICTIONS:

- For repairs to existing, in-service pipelines only.



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

H 5 – BELL JOINT LEAK CLAMP:

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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:

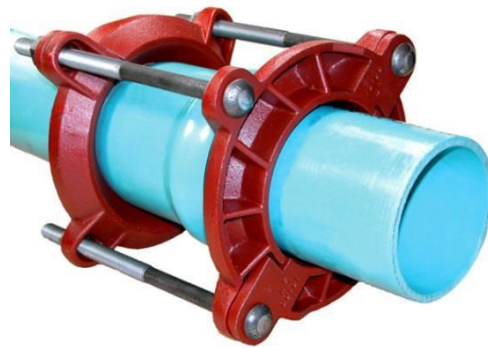
- EPDM (ethylene propylene).
- SBR (styrene butadiene)
- Nitrile Buna-N (Acrylonitrile butadiene (NBR)).
- Viton; Fluorel (FKM)

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”):	Effective Date: <u>01-01-20</u> Revision #: <u>2</u>
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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 possess 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.

RESTRICTIONS:

- For repairs to existing, in-service pipelines only.
- Insert stiffener is required on HDPE pipe.



MANUFACTURER:

- EBBA IRON – 3800 SERIES

H 6.1 – REPAIR COUPLING/ NON-RESTRAINED/ TRANSITION (2” THRU 12”):		Effective Date: <u>01-01-20</u> Revision #: <u>2</u>
<p>SPECIFICATION: Non-restraining transmission repair sleeves or couplings shall meet or exceed the performance specifications of:</p> <ul style="list-style-type: none"> • Shall connect two plain end pipes of dissimilar or similar diameters. • Shall join pipes with diameter differences as listed in “Minimum Required Coupling Size Range” in a single coupling kit. • 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. • NSF-61 for gaskets and coatings. • Shall be pressure rated for a minimum working pressure of 150psi. • 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. <p>MATERIAL: End Ring & Sleeve Body:</p> <ul style="list-style-type: none"> • Carbon Steel. • Ductile Iron. <p>Bolts, Nuts:</p> <ul style="list-style-type: none"> • 304 stainless steel with no-gall coating. <p>Gasket:</p> <ul style="list-style-type: none"> • EPDM (ethylene propylene). • SBR (styrene butadiene). • Nitrile Buna-N (Acrylonitrile butadiene (NBR)). • Viton; Fluorel (FKM). <p>Coating:</p> <ul style="list-style-type: none"> • Coupling Body & end rings: NSF-61 fusion bonded epoxy. 	<p>APPLICATION:</p> <ul style="list-style-type: none"> • 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. <p>MINIMUM REQUIRED COUPLING SIZE RANGE:</p> <ul style="list-style-type: none"> • 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) <div style="text-align: center;">  </div>	
<p>RESTRICTIONS:</p> <ul style="list-style-type: none"> • For repairs to existing, in-service pipelines only. • Shall not be used where joint restraint is required. 	<p>MANUFACTURER:</p> <ul style="list-style-type: none"> • CASCADE WATERWORK MFG.- OMEGA CR CER • FORD FC2W • HYMAX • ROMAC MACRO 	