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|--------------------------------------------|-----------------------------------------------------------------------------|---------------------------|
| METROPOLITAN UTILITIES DISTRICT | Construction Standard | No: 8.2.1 |
| | Installation of a Single Insulating Washer Flange Insulating Set | Page: 1 of 2 |
| Prepared by: Rich Baird | | <u>Supersedes:</u> 2-6-25 |
| Approved by: James Bartels | | Effective: 7-29-25 |

The latest revisions can be found at the end of this document

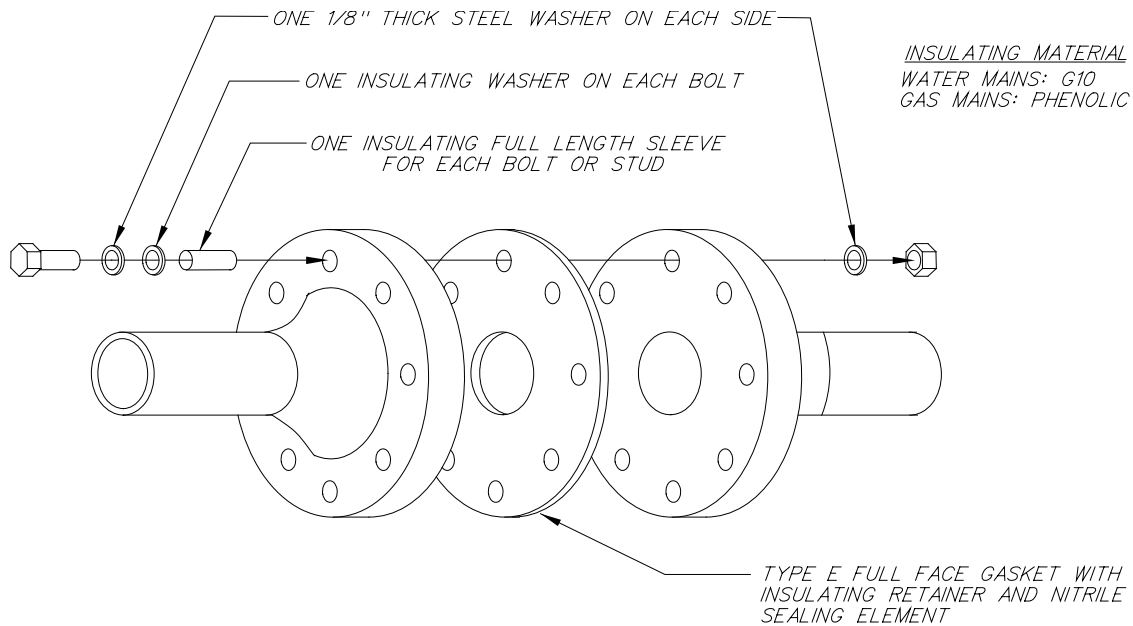


FIG 1

FLANGE INSULATION WITH SINGLE INSULATING WASHER (Fig. 1)

USE:

Flange insulating sets shall only be installed at locations specified by the District's Engineering Department.

INSTALLATION:

1. Clean and inspect pipe flange faces and gasket.
2. Install the gasket and align the flanges and gasket so the bolts or studs will be centered.
3. Slip the insulating sleeve over the bolt or stud. Slide the steel and fiber washer over the sleeve up against the head of the bolt.
4. Tighten the bolts or studs alternately around the flange by holding the shank steady and tightening the nut to the necessary torque.
5. The bolt or stud shall be of sufficient length to extend through the nut a minimum of one full thread but not more than 1/2 inch.
6. Electrical insulation shall be verified as directed by Corrosion Section employees.

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|----------------------------------------|-------------------------------------------------------------------------|--------------------|--------------|
| METROPOLITAN UTILITIES DISTRICT | Construction Standard | No: | 8.2.1 |
| | Installation of a Single Insulating Washer Flange Insulating Set | Page: | 2 of 2 |
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7. Attach test wire to steel pipe per C.S. [8.3.2](#) (gas) or C.S. [8.3.3](#) (water). If ductile iron pipe is involved and trace wire is available with existing ductile iron pipe, attach trace wire to existing trace wire per C.S. [11.2.2](#) (gas) or C.S. [1.14.1](#) (water). Install either a roadway box, CC box or test marker. Bring wire(s) up alongside or inside roadway box, CC box or test marker per C.S. [8.3.1](#). See [Fig 2](#).

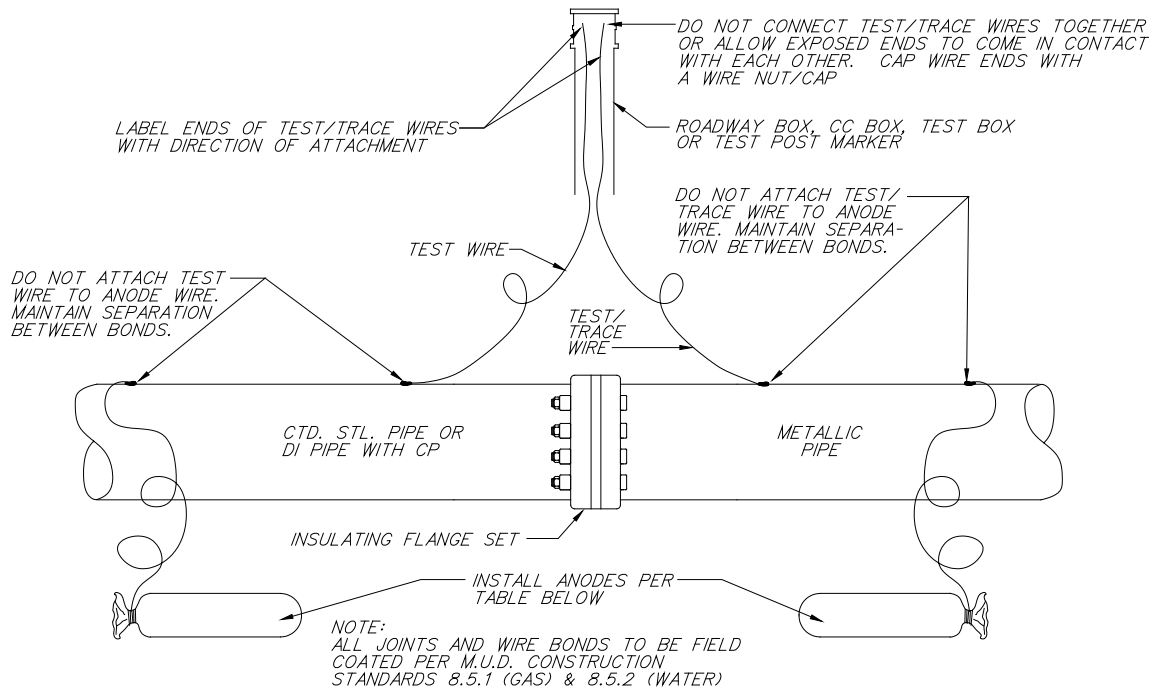


FIG 2

| ANODES REQUIRED | | |
|------------------------|------------------------------------------|------------------------------------------|
| | Gas | Water |
| Bare Steel | 32# | 32# |
| Cast Iron | N/A | 32# |
| Coated Steel | 17# if OD is ≤ 12" 32# if OD is > 12" | 17# if OD is ≤ 12" 32# if OD is > 12" |
| Ductile Iron | None | 32# if DI with Cathodic Protection |

Revision

The latest revision is detailed on the following page(s).

Pages affected: **#1 & #2** _____

| | | |
|----------------------------------------|-------------------------------------------------------------------------|------------------|
| METROPOLITAN UTILITIES DISTRICT | Construction Standard | No: 8.2.1 |
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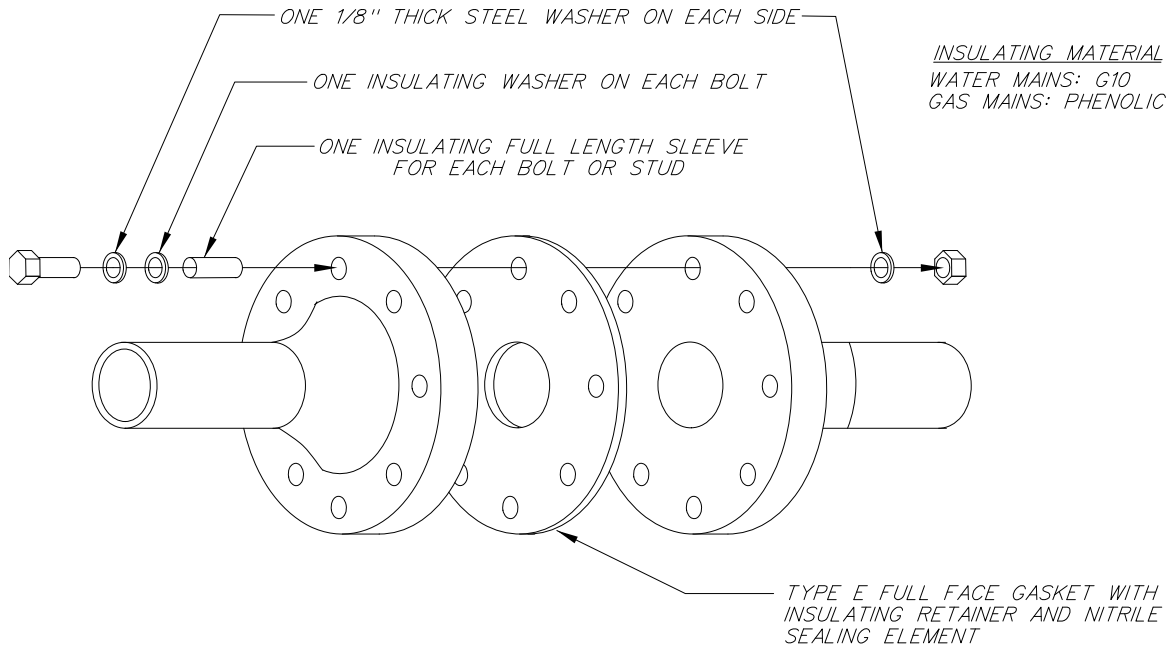


Fig. 1

FLANGE INSULATION WITH SINGLE INSULATING WASHER (Fig. 1)

USE:

Flange insulating sets shall only be installed at locations specified by ~~M.U.D.~~ the District's Engineering Department.

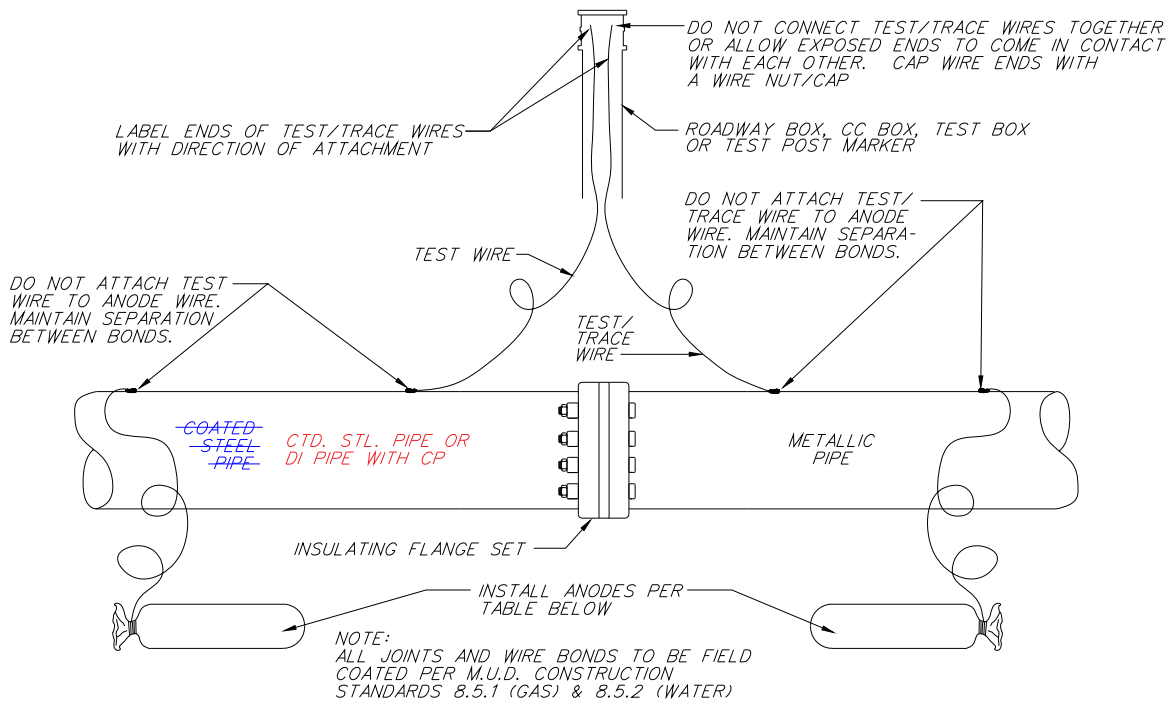
INSTALLATION:

1. Clean and inspect pipe flange faces and gasket.
2. Install the gasket and align the flanges and gasket so the bolts or studs will be centered.
3. Slip the insulating sleeve over the bolt or stud. Slide the steel and fiber washer over the sleeve up against the head of the bolt.
4. Tighten the bolts or studs alternately around the flange by holding the shank steady and tightening the nut to the necessary torque.
5. The bolt or stud shall be of sufficient length to extend through the nut a minimum of one full thread but not more than 1/2 inch.
6. Electrical insulation shall be verified as directed by ~~the~~ Corrosion Engineer Section employees.

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- Attach test wire to steel pipe per [Construction Standard C.S. 8.3.2](#) (gas) or [C.S. 8.3.3](#) (water). If ductile iron pipe is involved and trace wire is available with existing ductile iron pipe, attach trace wire to existing trace wire per [Construction Standard C.S. 11.2.2](#) (gas) or [C.S. 1.14.1](#) (water). Install either a roadway box, CC box or test marker. Bring wire(s) up alongside or inside roadway box, CC box or test marker per [Construction Standard C.S. 8.3.1](#). See [Fig. 2](#).



TEST WIRE DETAIL

NO SCALE

Fig. 2

| ANODES REQUIRED | | |
|------------------------|----------------------------------------------|----------------------------------------------|
| | Gas | Water |
| Bare Steel | 32# | 32# |
| Cast Iron | N/A | 32# w/ Cathodic Clamp on all sizes |
| Coated Steel | 17# if O.D. is ≤ 12" 32# if O.D. is > 12" | 17# if O.D. is ≤ 12" 32# if O.D. is > 12" |
| Ductile Iron | None | None 32# if DI with Cathodic Protection |