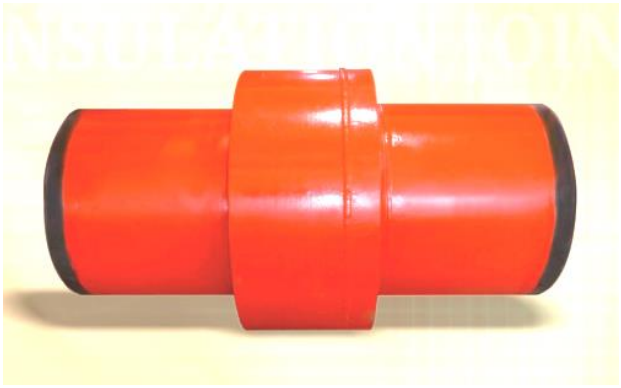
KLINGER Australia

Monolithic Isolation Joints



trusted. worldwide.

Monolithic Isolation Joints:

The Klinger distributed and IGP manufactured Monolithic Isolation Joints are boltless structures that provides electrical resistance between the pipeline sections and adjoining structures, thus providing the effectiveness of the Cathodic Protection System (CP systems).
Suitable for underground and above ground installations
The isolation joints are superior to insulation kit gasket assemblies.
Are of proven design and successfully installed worldwide as per pipeline specifications & requirements.
Maintenance free fit & forget
These joints are preassembled at the factory and are ready to be welded into the pipe line at site

Benefits:

Eliminates electrical short circuits and stops stray current in pipeline systems.
Most economical and reliable method that can be used for cathodic protection in all applications of the pipeline systems.
Eliminates field assembly of bulky installations of Flanges, Gasket Kits with bolt & fasteners.

Installations • Aboveground *I* Underground

Mechanical Properties:

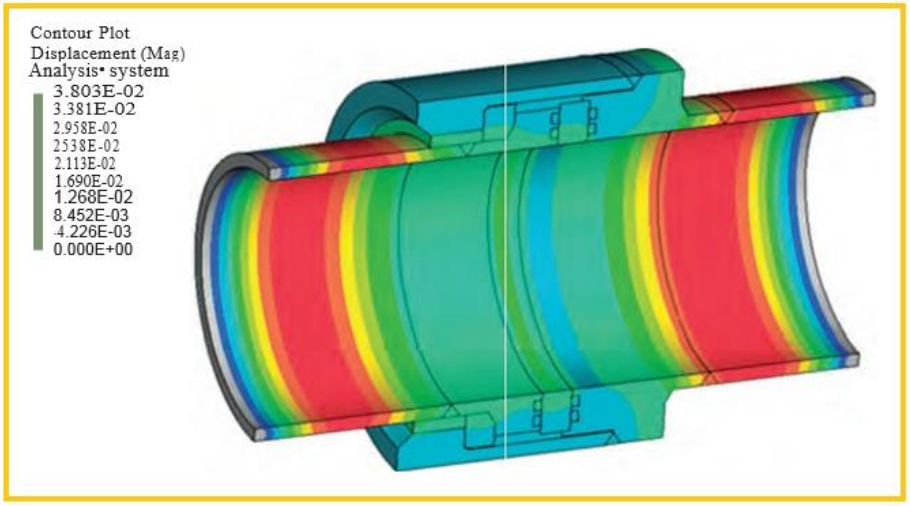
Excellent mechanical properties are achieved by a rigid design and using a thermo-setting plastic that does not cold flow as the insulating material.
The welded unit provides a safe and reliable connection even over extremely long periods of operations without the risk of the seals unloading or separating.
At our works the joints are subjected to a variety of pressure tests to meet the requirements of the pipeline design by adhering to both international standards & testing requirements or customer specific requirements.

Electrical Properties:

The arrangement of the insulating sections within the overall design, in addition to technical production factors and the use of insulation materials of a suitable quality, result in the required overall electrical insulating behavior of the joints, even over large external insulating lengths, thus eliminating the possibility of spark over.
These joints have very good dielectric strength, substantially greater than conventional insulating flanges.

Design & calculations:

Computerized calculation programmes are used for the verification of the mechanical strength of the joints in compliance with ASME Section VIII Div.1, App.2 applicable codes ASME B 31.3 (process piping line), ASME B31.4 (liquid transmission) & ASME B31.8 (gas transmission) or in accordance with customer requirements.
Additional forces such as bending moments and tensile forces etc. must be specified by the customer.
All forces and force values that the Isolation Joint will experience can be taken into consideration during the design calculations.
All mechanical analysis is done by using a Finite Element method verification programme and will be submitted on request.



Applications:

Suitable for flow media such as natural gas, crude oil, kerosene, gasoline, propane, butane, coal gas, ethylene, nitrogen, methane, LPG, CNG Slurry pipeline and drinking water. Media such as sour gas and oxygen require special material like Stainless Steel & Duplex.
Temperature ranging from - 50 Deg C to 170 Deg C.

Material:

Pipe materials used are in accordance with API 5L / ISO 3183, ASTM/ASME or DIN standards.
Seamless rings made of forged quality as per ASTM A694 - F42, F46, F-48, F52, F56, F60, F65, F70, F80, ASTM A105, ASTM A350 - LF1, LF2, LF3, ASTM A182, ASTM depending upon customer requirements and design calculations.
Sealing materials are selected based on the flow media / application of pipelines e.g. FKM (Viton), NBR, EPDM and other materials according to ASTM D2000.
Insulating materials according to ASTM D709 standard.

Quality Assurance:

The quality assurance programmes are in compliance with 1S0·9001·2015 & IS0·14001·2015. in our facilities to ensure the quality is controlled at every stage of fabrication of Insulation joints.

Standards:

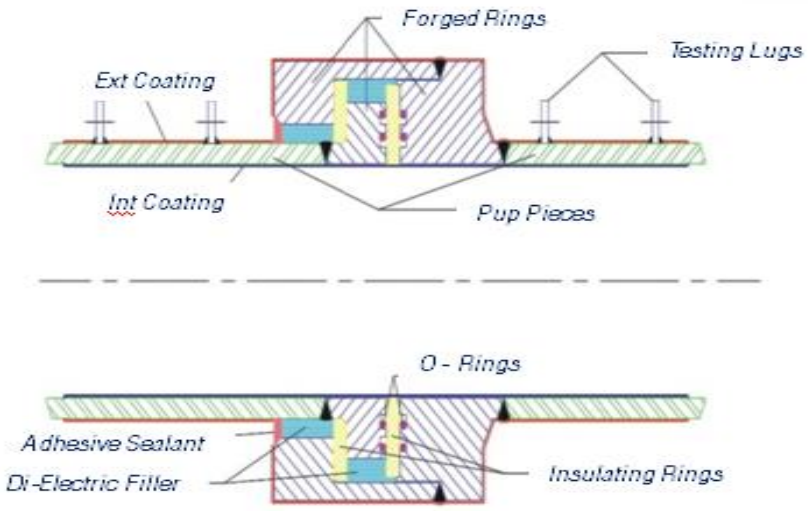
Butt weld ends as per ASME B16.25
Welding procedures (WPS & PQR) as per ASME Section IX & ASME Boiler & Pressure Vessel Code
NDT Examinations (RT, UT, MPT, DPT) as per ASME Section V & API 1104 & ASME Section VIII Div.1
Chemical & Mechanical testing as per ASTM A370
Resinous material as per ISO 12058, ISO 1675
Paint & shot blasting as per ISO 8501
ADHESIVE testing as per ASTM D3359 / ISO 2409
HOLIDAY testing as per ASTM D5162-08
Helium testing as per ASTM E499 / E499M·11

Internal Coating:

High solid glass flake epoxy.
Glass flake Bisphenol A or vinyl ester
FBE Coating on special request

External Coating:

Two layers of Epoxy Zinc Rich as primer
Two layers Aliphatic Polyurethane
Customer specific requirements like 3 LPE coating can also be accommodated.



Cross – Section of Isolation Joints

Testing

Hydro Test: 1.5 times the design pressure

Pneumatic Test

Fatigue Test

Combined Cycle Test

Bend Test

Torsion Test

NaCl Immersion Test

Insulation Resistance Test @1000 Volt DC

Dielectric Strength Test : 1.5 to 5 KV @ 1 minute AC 50 Hz (Special15 KV @ 1 minute AC 50Hz)

Adhesion and Holiday Test for painting as per standards & customer requirements.

Special tests on request
Helium leak test.
Humidity test.

Testing and Inspection agencies:

PDO, BVIS, LRIS, DNV, EIL, CEIL,TUV(NOD &SUD), GLIS, SGS, VELOSI,ICS, Mecon, LRIS

Special Features:

Non Standard Wall Thickness can be manufactured as per the customer's requirements.

Certification:

EN 10204- 3.1 (EN 10204 • 3.2 if required)

IGP Factory manufacturing approvals:

1. Engineers India Ltd
2. GSPL
3. British Gas
4. PDO (Petroleum Development of Oman)
5. ONGC
6. IOCL
7. JP Kenny
8. Tracteble Engineering
9. Valdel Engineers & Constructure.
10. L &: T
11. MOTT Macdonald
12. Worley Parsons
13. Cairn India Ltd
14. Saipem
15. GS E&C – Korea
16. OOCEP- Orpic
17. TCC- China
18. Reliance
19. Mecon
20. GAIL
21. HPCL
22. BPCL
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