



PROTANBLOCK

MONOLITHIC JOINTS

Positive, leak-proof, long-lasting block against the flow of electric current in piping systems.

ProtanBlock Monolithic Joints are used for permanently controlling the flow of electrical currents or electrically isolating pipe sections in pipes and piping systems. Effective management of cathodic protection programs results from the use of these highly reliable substitutes for flanged insulating systems.

Manufactured in accordance with ISO 9001 standards.



Practical application

1. On existing facilities and during installation of new ones,
2. On gas distribution pipelines, water lines and liquid fuel lines,
3. Before and after gas distribution stations,
4. In systems storerooms in oil and gas mines,
5. On gasholders and liquid fuel tanks,
6. On Underground facilities near water and above ground facilities.

Mechanical properties

- The bodies of the monolithic insulating joints are made from a structure of welded steel plates (from construction carbon steel or low-alloy steel),
- All the results of tests and quality control procedures are contained on the documentation enclosed to our products.



Electrical properties

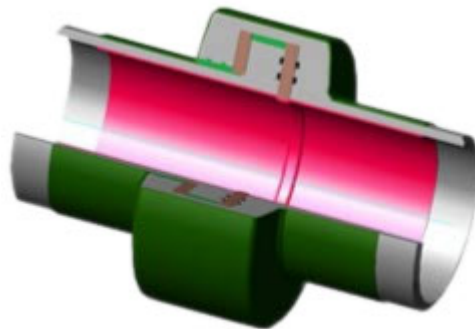
- The use of high class insulating materials guarantee a high quality of our Monolithic insulating Joints,
- Exchangeable spark gaps can be used on the manufacturing of the Monolithic insulating Joints,
- During the electrical tests with 5KV (50 Hz) for 1 minute there is no sparking and breakdowns. Tests are made before and after the hydrostatic test.
- Under a voltage of 1 kV in dry condition, the Monolithic Insulating joint's resistance is above 5MOhms
- At voltage between 15 to 25 kV during control of leak tightness the Monolithic insulating Joint´s external coating shows no sparking.

Calculations

1. Calculations are carried out according to WUDT-UC-WO-0 and PN-EN 13480-3,
2. Additional parameters as value of bending moment and tensile forces might be requested by the customer,
3. For additional calculations the operating pressure is needed.

Materials

- According to PN-EN 10208, DIN 1626, API Spec 5L, ASTM A53 and others,
- The steel elements (rings) are performed from metal plate and die forging according to PN-EN 10028,
- Long lasting and aging resistance Nitril, fluoride or silicone rubber, O-ring seals are used to ensure the hermetic sealing.
- Epoxi Laminated plates are used according to PN-EN 60893 and DIN 7735.





Welding and non-destructive tests

1. All steel elements of insulating joint are welded according to by MIG-welding processes approved by specialized independent certification organisation,
2. All weld seams are inspected and tested through non-destructive methods: VT (visual test), PT (dye penetration test) and UT (ultrasonic test). All tests and inspections are performed by specialists who have competence certificate of Welding Technology Institute.

Using external coating

- polyurethane coating according to PN-EN 10290,
- heat-shrinkable coating according to PN-EN 12068,
- paint coating (epoxies) according to PN-EN 12944.

Using internal coating (lining)

- paint coating (epoxies) according to PN-EN 12944, PN-EN 10301

Tests

- Construction, dimensions, materials,
- Hydrostatic strength test for 1,5xMOP pressure (maximum operating pressure),
- Pneumatic leak proof test for pressure of 6 bar,
- Electrical test at alternating voltage of 5kV / 50 Hz during 1 minute with no sparking.
- Electrical resistance above 5M Ω at a constant voltage of 1 kV.

The range of construction

- All parameters of insulating joints that are shown in our tables, apply to standard products.
- Is possible to manufacture insulating joints with increasing working parameters, which means:
working pressure up to 420 bar (ANSI 2500), working temperatures above 160°C,
- Additional carrying out with internal spark gap or adaptation for external spark gap.