

Plastic Constructions & Installations

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Building

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Belgium

3M Belgium - Zwijndrecht
Agfa Gevaert- Mortsel
Ajinomoto Omnicem - Gent
AMI Semiconductor - Oudenaarde
Amoco - Feluy
BASF - Antwerp
Caterpillar Belgium - Gosselies
Cockerill Sambre - Seraing
Comet - Mechelen
Duroc NV - Wilrijk
Janssen Pharmaceutica - Beerse
Mervers - Antwerp
Monroe - Sint Truiden
Philips Innovative Applications - Turnhout
Photogravure De Schutter - Antwerp
Prayon Rupel - Engis
R.U.C.A. - Antwerp
Ramakers - Hoboken
Robert Bosch - Tienen
Sidmar - Gent
Ugine & ALZ - Genk
Umicore - Olen

France

Eurotainer - Paris

The Netherlands

ASE - Druten
3P - Tilburg

smart lining

plastic lining

The lining of steel apparatus, vessels and pipes with high-quality thermoplastic materials has become a firm part of surface protection.

When there is a need for a combination of increased mechanical strength and a high chemical resistance to corrosion, lining your tank or vessel can be a consideration. It may offer you a low-cost solution, especially in situations where "exotic" materials are required.

Prefabricated semi-finished materials in form of sheets in thicknesses of approximately 1 to 4 mms are used for this purpose.

These linings differ substantially from coatings which are applied as cold or warm ardening liquid coating or as powder melting coating and which rarely exceed a thickness of 1000 μm .

The basic principle of lining is rather simple: a plastic sheet backed by glass fibre or synthetic fabric is bonded to the substrate.

Under vacuum, the thermoplastic material is glued to the whole area of the steel carrier - joints are then welded.

Putting this simple principle into practice requires skilled and experienced personnel, who can guarantee the impermeability and lifelong adhesion of the lining.

Plastic Constructies R. Teblick can offer you the whole package: from pressure vessel design, via high-quality lining, to the installation of the vessel on site - the proof of our 35 years of experience in all branches of industry lies with our more than 500 (very) satisfied customers!

Although this technique offers a lot of major benefits, due to large differences between the thermal expansion coefficients of the thermoplastic lining and the metallic or concrete structure, this technique finds its natural limits in dimension and temperature.

We do linings in PP, PVC, PVDF, PFA, ETFE, PTFE ECTFE,.... We will be pleased to advise you on this matter.

Polypropylene (PP) is the least expensive of all our liner systems. It has proven chemical resistance in a wide variety of applications and because it's a copolymer can be used from -30°C to 100°C . Mechanical properties are good and tensile strength is generally in the 4000 to 4500 PSI range.

Polyvinylidene Fluoride (PVDF) has excellent mechanical properties and is resistant to most chemicals. It's temperature range is -30°C to 135°C . Tensile strength is 4500 to 5000 PSI.

EthyleneChlorotrifluoroEthylene (ECTFE) is a fluoropolymer with exceptional properties. It has by far the best combination of chemical resistance and toughness of any lining we offer. It's superior where temperature cycling, mechanical stress, abrasion, or permeation are a problem. Temperature range -30°C to 150°C . Tensile strength is typically in the 6000 to 7000 PSI range.

Ethylenetetrafluoroethylene (ETFE) is a fluoropolymer with superior physical properties and chemical resistance approaching that of PTFE. Its excellent where high pressure, vacuum, or cold flow is a problem. Temperature range -30°C to 150°C . Tensile strength is approximately 6700 PSI.

Polytetrafluoroethylene (PTFE) is virtually inert to all chemicals except elemental fluorine and molten alkali metals. Over 300°F (149°C) there is no other liner choice. PTFE is softer and has less strength for a given thickness than our other liners so it requires special design considerations. PTFE because of its microporosity, has a higher gas permeation rate which can be improved by increasing the liner thickness, which also helps its overall strength. Special attention to piping alignment and torquing of flange bolts will keep creep or cold flow to a minimum. Temperature range -30°C to 230°C . Tensile strength approximately 3000 PSI.

Polyfluoroalkoxy (MPFA or PFA) has the same corrosion resistance but is tougher mechanically and does not creep or cold flow like PTFE. Temperature from -30°C to 260°C . Tensile strength is 4000 to 4500 PSI.

lining

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