

Polymer solutions – coating, foil, lining and lower parts

Description

A broad selection of polymer solutions is available in the category coating, sheet or lining. All with their own purpose and restrictions. The coating and sheet solutions are not for a full corrosion protection, but are applied as anti-stick purposes, where a lining has a corrosion resistance because of a thickness of 1mm.

Coating

PTFE

Polytetrafluoroethylene, shortly PTFE, coating has a non-stick function. The standard (S) coating has a thickness of +/- 30µm. optionally (T) 80µm is possible but will influence the accuracy with low span measurements. For special material applications and for BRF seals a special version is available with a standard thickness. The Low Cure (LC) option takes care of the heat influences caused during the application of the coating.



Type	Thickness	Min OT	Max OT	Color
S	± 30µm	-200°C	+280°C	Grey/black
T	± 80µm	-200°C	+280°C	Grey/black
LC	± 30µm	-200°C	+200°C	Grey/black

PFA

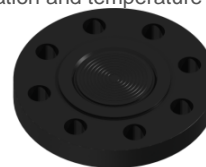
Perfluoroalkoxy, shortly PFA coating has predominantly a non-stick function. The corrosion resistance is generally better than PTFE, as its structure is less permeable. Optionally (T) 80µm is available, but this will influence the accuracy. The PFA enhanced (E) version has special fillers to enhance the corrosion resistance.



Type	Thickness	Min OT	Max OT	Color
S	± 30-40 µm	-200°C	+260°C	black metallic
T	± 80-100µm	-200°C	+260°C	black metallic
E	± 60-80 µm	-200°C	+260°C	Red

PVDF

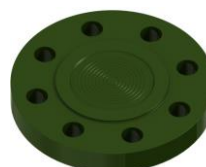
Polyvinylidene fluoride, shortly PVDF, has chemical resistance, but depends on concentration and temperature of the medium.



Thickness	Minimum temperature	Maximum temperature	Color
100 µm	-55°C	+120°C	Dark grey

ECTFE

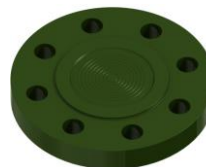
ethylene chlorotrifluoroethylene, shortly ECTFE has chemical resistance, but depends on concentration and temperature of the medium.



Thickness	Minimum temperature	Maximum temperature	Color
± 600µm	-55°C	+120°C	Green

FEP

Fluorinated ethylene propylene, shortly FEP coating has a non-stick function.



Thickness	Minimum temperature	Maximum temperature	Color
± 30-40µm	-200°C	+205°C	Green

PTFE foil

Badotherm offers two types of PTFE sheet. The sheets are a plain virgin PTFE sheet and adhesive sheet. The virgin PTFE sheet is mostly used at US, USL and USM type of seals as the sheet should be clamped. The sheet is applied together with fluorinated oil to keep the foil in its place in case of disassembly. The sheet is for anti-stick because of the limited thickness of 0.1mm. The foil is in accordance with FDA 21 CFR 177.1550. Virgin PTFE foil cannot be used on vacuum applications.

Thickness	Minimum temperature	Maximum temperature	Color
0.1mm (100µm)	-150°C	+260°C	white

The PTFE fiberglass has a self-adhesive layer that can be used to fix the sheet to the diaphragm. The adhesive is on a silicone basis so cannot be used for oxygen application. The sheet is for anti-stick because of its limited thickness of 0.1mm.

Thickness	Minimum temperature	Maximum temperature	Color
0.1mm (100µm)	-180°C	+260°C	brown

PTFE lining

The virgin PTFE lining is a common used protection against aggressive media such as chloride. The lining is a chemical resistant solution because of its thickness of 1mm. The lining is shaped into a solid stainless steel part that can be fixed to the process band give the strength up to higher pressure ratings.

Thickness	Minimum temperature	Maximum temperature	Color
1mm	-150°C	+260°C	white

Lower part

Several polymers are suitable to be used as lower parts or flush parts. Materials Badotherm has experience with are PTFE, PVDF, and PVC lower parts, flush rings or isolation rings. This solution can only be use in low pressure applications.