

# Insulation and sheath materials

## General information about the material ETFE, FEP, PFA

### ETFE - ethylene tetrafluorethylene

ETFE has got excellent mechanical characteristics, an elevated hardness and tensile strength are combined with chemical resistance and electric and thermal characteristics of other fluoro-plastics with especially high demands as for example on

- ⦿ high chemical and solvent resistance
- ⦿ elevated tensile strength and pressure resistance
- ⦿ cold and heat resistance
- ⦿ operating temperature from approx. -90 °C up to +135 °C
- ⦿ good electric insulation characteristics with low dielectric values almost independent on frequency

### FEP - fluorinated ethylene-propylene copolymer

This material belongs to the fusible fluoroplastics and can be extruded. It has got a bigger friction coefficient and a lower permanent operating temperature than PTFE. FEP offers the following characteristics

- ⦿ excellent temperature resistance
- ⦿ deep temperature flexibility
- ⦿ very good resistance against oils and chemicals
- ⦿ operating temperature from approx. -90 °C up to +180 °C
- ⦿ good electric insulation characteristics with low dielectric values almost independent on frequency

### PFA - perfluoroalkoxy copolymer

This fluoroplastic material has got a good chemical resistance, a broad application temperature range as well as a very good resistance against ageing and weather conditions. Furthermore, it shows a low friction resistance and a good electrical insulation with especially high demands as for example on

- ⦿ high demands on chemical and solvent resistance
- ⦿ high degree of resistance
- ⦿ excellent temperature resistance and deep temperature flexibility
- ⦿ operating temperature from approx. -90°C up to +250°C (short time use +260°C)
- ⦿ good electric insulation characteristics with low dielectric values almost independent on frequency

### Exemplary application fields of ETFE, FEP and PFA cables

⦿ **ETFE:** For high frequency, broadband and telecommunication technique, coaxial and micro wave technology. High data speed together with exact information transmission, chemical industry, furnace construction, brick works, heating devices, ...

⦿ **FEP:** For ship building for example in machine rooms on ships or as connection cable for engine control, high frequency and broadband technique as well as telecommunication technique, coaxial and micro wave technology. High data speed together with exact information transmission, chemical industry, furnace construction, brick works, heating devices, ...

⦿ **PFA:** For high frequency, broadband and telecommunication technique, coaxial and micro wave technology. High data speed together with exact information transmission, chemical industry, furnace construction, brick works, heating devices, ...