

PVC, PUR & TPE cable jacket comparisons

There are many different types of cable jackets and each jacket works well in a specific application. The three main sensor cable jackets are PVC (Polyvinyl Chloride), PUR (polyurethane) and TPE (thermoplastic elastomer). Each jacket type has different benefits like washdown, abrasion resistant or high flexing applications. Finding the correct jacket type for your application can extend the life of the cable.

PVC is a general purpose cable and is widely available. It is a common cable, and typically has the best price point. PVC has a high moisture resistance, which makes it a good choice for wash-down applications.

PUR is found mostly in Asia and Europe. This cable jacket type has good resistance against abrasion, oil and ozone. PUR is known for being Halogen free, not containing: chlorine, iodine, fluorine, bromine or astatine. This jacket type does have limited temperature range compared to the other jacket types, -40...80°C.

TPE is flexible, recyclable and has excellent cold temperature characteristics, -50...125°C. This cable is resistant against aging in the sunlight, UV and ozone. TPE has a high-flex rating, typically 10 million.

The table below details the resistance to different conditions. Note that these relative ratings are based on average performance. Special selective compounding of the jacket can improve performance.



Resistance to:	PVC	PUR	TPE
Oxidation	Excellent	Excellent	Outstanding
Heat	Good - Excellent	Excellent	Outstanding
Oil	Fair	Outstanding	Outstanding
Low Temperature Flexibility	Poor - Good	Excellent	Outstanding
Weather, Sun	Good - Excellent	Excellent	Outstanding
Ozone	Excellent	Excellent	Excellent
Abrasion	Fair - Good	Excellent	Excellent
Electrical Properties	Fair - Good	Excellent	Excellent
Flame	Excellent	Excellent	Outstanding
Nuclear Radiation	Fair	Excellent	Poor
Water	Good - Excellent	Good - Excellent	Excellent
Acid	Good - Excellent	Excellent	Excellent
Alkali	Good - Excellent	Excellent	Excellent
Gasoline	Poor	Excellent	Excellent
Benzol	Poor - Fair	Excellent	Excellent
Degreaser Solvents	Poor - Fair	Excellent	Excellent
Alcohol	Good - Excellent	Excellent	Excellent
Weld Slag	Fair	Excellent	Excellent

Choosing the right jacket type can help reduce failures in the field, reducing downtime and costs. Please contact sales@thompsongws.com for more information.