

SHEATH

The **internal and external sheath** of the cables is made of extruded material which can be of a different nature depending on the application.

The **internal sheath** called filler has the purpose of protecting the conductors from any armor or shielding in braid or bundle of wires, especially when the cable has an insulation degree of 0.6/1Kv.

The **outer sheath** has the task of protecting the cable mechanically and from humidity and water, oils and hydrocarbons and UV rays. In the case of **metal sheathed cables** the sheath must protect the iron or copper from oxidation.

To ensure that the protective function of the sheath is correct and lasts over time, it is important to choose the **type of material according to the application.**

PVC

Extruded polyvinyl chloride is a widely used and versatile material due to its adaptability as it can be modified by adding additives to obtain the different required properties. The characteristics of the basic PVC are rather poor in all respects including the cost, however by adding it in the required way it is possible to obtain the necessary system characteristics, such as operating temperatures up to -50°C or $+105^{\circ}\text{C}$, resistance to oils and hydrocarbons, surprising mechanical resistance, resistance to UV rays and excellent flame retardant properties, the only flaw is that it contains Chlorine so it cannot be LSZH.

PE

Extruded polyethylene is a material particularly suitable for use in damp and wet environments, it has good mechanical strength and moderate resistance to oils and chemical agents. It usually has little use (only if buried) as it is not self-extinguishing and once triggered it tends to drip and burn without a flame.

LSZH SHF1

Polyolefin usually called M1, M16 extruded. This is a thermoplastic that is increasingly being used as it is non-toxic and in the event of fire it does not emit corrosive chemical substances and has limited fume emissions. SHF1 is also a versatile material due to its adaptability as it can be modified with the addition of additives obtaining the different required properties such as operating temperatures up to -50°C or $+90^{\circ}\text{C}$, resistance to oils, hydrocarbons, chemical agents in type, resistance to UV rays and excellent flame retardant properties, the only flaw is that it is more fragile to cutting than PVC even if it has good mechanical resistance.



GENERAL PROPERTIES SHEATH COMPOUND

CHEMICAL SUBSTANCES RESISTANCE

EXCELLENT ☆☆☆☆
 GOOD ☆☆☆
 DISCRETE ☆☆☆
 BAD ☆

	STD. PVC	SPECIAL ARTIC PVC	SPECIAL PVC	PE	STD. LSZH M1-SHF1	SPECIAL LSZH M16-SHF1	LSZH ARTIC M1-SHF1	LSZH M1-SHF1 CRACK RES.	LSZH M2-SHF2 MUD RESISTANT
WATER RESISTANT	☆☆	☆☆☆	☆☆☆	☆☆☆☆	☆☆☆	☆☆☆	☆☆☆	☆☆☆	☆☆☆☆
WATER IMMERSION	☆	☆☆	☆☆	☆☆☆	☆	☆	☆	☆	☆☆☆
FLAME RETARDANT IEC60332.1	☆☆☆	☆☆☆☆	☆☆☆☆	☆	☆☆☆	☆☆☆☆	☆☆☆	☆☆☆	☆☆☆
FLAME RETARDANT IEC60332.3	☆☆	☆☆☆	☆☆☆☆	☆	☆	☆☆☆☆	☆☆	☆☆☆	☆☆☆
LOW SMOKE & FUME - LSF	☆	☆☆☆	☆☆☆☆	☆☆☆☆	☆☆☆☆	☆☆☆☆	☆☆☆☆	☆☆☆☆	☆☆☆☆
LOW SMOKE ZERO HALOGEN CONTENT - LSZH	☆	☆	☆	☆☆☆	☆☆☆☆	☆☆☆☆	☆☆☆☆	☆☆☆☆	☆☆☆
FLEXIBILITY	☆☆☆☆	☆☆☆	☆☆☆	☆	☆☆☆	☆	☆	☆☆	☆
CRACK RESISTANT	☆☆☆	☆☆☆☆	☆☆☆☆	☆☆☆	☆	☆	☆	☆☆☆	☆☆☆
HYDROCARBON	☆	☆☆☆	☆☆☆☆		☆☆☆	☆☆☆☆	☆☆☆	☆☆☆☆	☆☆☆☆
BENZENE/HEPTANE	☆	☆☆☆	☆☆☆☆		☆☆☆	☆☆☆☆	☆☆	☆☆☆☆	☆☆☆☆
MINERAL OIL	☆	☆☆☆	☆☆☆☆		☆☆☆	☆☆☆☆	☆☆☆	☆☆☆☆	☆☆☆☆
METHYL ALCOHOL	☆	☆☆☆	☆☆☆☆	☆☆☆	☆☆☆	☆☆☆☆	☆☆☆	☆☆☆☆	☆☆☆☆
BUTTER	☆☆☆	☆☆☆	☆☆☆☆	☆☆☆	☆☆☆	☆☆☆☆	☆☆☆	☆☆☆☆	☆☆☆☆
UV	☆	☆☆☆	☆☆☆	☆☆	☆	☆☆☆	☆☆☆	☆☆☆	☆☆☆
PETROL MUD	☆	☆	☆	☆	☆	☆	☆	☆	☆☆☆

