

Weather-resistant L²dpe Sheathing Compound



DESCRIPTION

L²dpe is a polymer based on polyethylene resin pellets, antioxidants, stabilizers, lubricants, antifade pigments and other smaller components, processed by mixing and extruding to the shape of small pellets, and used for **LanPro** to build jackets for outdoor cables (fiber, coax, copper).

FEATURES

L²dpe has the following features:

- Specially designed for electrical environments.
- Ideal processing properties (specially for $\Phi 150$ and $\Phi 200$ extruding machine).
- Good ESCR characteristics.
- Excellent abrasion-resistant properties.
- High dielectric constant (High breakdown Voltage).
- Highly resistant to water intrusion.

Main properties are shown in **Table 1**.

PROCESSING TECHNIQUES

L²dpe polymer can be processed on the common cable fabrication equipment furnished with PVC or PE screw types. A single flight metering screw with feed, transition and metering sections is recommended according to the practical situation. Based on tests data from processing on $\Phi 150$ mm Extruder, screw of length-diameter ratio of 25:1, the following typical conditions are recommended as a starting point. However, it may be necessary to optimize conditions based on different extruder, screw and tooling.

Temperature profile

Zone	Feeder	I	II	III	IV	Head (Die)
Temp.°C	160±10	160±10	175±10	205±10	180±10	175±10

PACKAGING & STORAGE OF L²dpe POLYMER supplied in pellet form, 25 Kg or 500 Kg aluminum/plastic laminated film packing. We recommend good housekeeping throughout your facility.



Table 1.

Properties	Units	L ² dpe	
		Standards	Typical values
MFR (Melt Flow Rate) (190°×2.16kg)	g/10min	≤2.0	0.48
Density	g/cm ³	≤0.940	0.938
Tensile strength	MPa	≥14.0	25.9
Elongation at break	%	≥600	770
Low temperature brittleness test	°C	-76°C Passed	Passed
Environmental stress cracking resistance	h	≥500	>500
200°C Oxidation induction time (OIT)	min	≥30	>30
After ageing in air oven (100°C×240h)			
– Tensile strength	MPa	≥13.0	21.8
–Elongation at break	%	≥500	710
Volume resistivity at 20°C	Ω.m	≥1.0×10 ¹⁴	2.3×10 ¹⁴
Break down voltage	MV/m	≥25	32
Dielectric constant	--	≤2.75	2.35
Dielectric loss angle tangent		≤0.005	0.003
Artificial weathering aging			
Aging time: 0-1008h			
–Maximum variation for tensile strength	%	≤±25	4.4
–Maximum variation for elongation at break	%	≤±25	9.8
Aging time: 504-1008h			
–Maximum variation for tensile strength	%	≤±15	-12.5
–Maximum variation for elongation at break	%	≤±15	-4.9

L²dpe polymer used in all our PE Outdoor Jackets and special Outdoor cables. L²dpe polymer is formulated and used exclusively on Lanpro's special cables.