



# Ddev Plastiks Industries Limited

An ISO 9001:2015 company  
TECHNICAL DATA

Silane Grafted XLPE Compound :

KI – XL – 03HS & KI – XL – 04FX

## DESCRIPTION :

A Low Density Cross Linkable Polyethylene Compound where silane is incorporated to PE through grafting; This product is suitable for Low Voltage Power Cables (LT applications). This grade is suitable for thin wall and very high speed application.

The above product consists of 2 Components i.e. Grafted Polymer – Grade KI-XL-03HS & Catalyst Master Batch Grade KI-XL-04FX to be premixed prior to use at a ratio of 95:05. (Do not use the catalyst MB < 5% as it will affect the final properties).

KI-XL-03HS is to be used in conjunction with KI-XL-04FX , which contains a catalyst activator to enhance the process of cross-linking in open environment, (no needs of sauna, CV tube or steam bath).

## SPECIFICATIONS :

KI-XL-03HS & XL-04FX meets requirements as applicable under following standards, when processed using sound extrusion practice and testing procedure;

- IS 10810
- BS 5467, 5468, 6724, 7655
- IEC 60502

## TYPICAL PROPERTIES :

### A) XL-03HS

Property	Unit	Typical Value	Test Method
Density	gm / cm <sup>3</sup>	0.922 – 0.925	ASTM-D-792
Melt Flow Index (190°C, 2.16 Kg)	gms / 10 Min	0.6 – 1.5	IS-10810 (Part-23) / ASTM-D-1238
Contamination (Visual)	No./Kg	< 5	KIL

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## B) XL-03HS / XL-04FX Combination

Mixed at 130°C at 95:5 ratio for 3 minutes. Compression moulded to a sheet of 1.5 mm thickness. Cured by immersion in water at 85°C for 3 hours. Conditioning for 3 hours.

Property	Unit	Typical Value	Test Method
Tensile Strength	MPa	16 - 19	IS-10810 (Part-7) / ASTM-D-638
Elongation at break	%	500 – 600	IS-10810 (Part-7) / ASTM-D-638
Hot set at 200 °C a) Hot Elongation after 15 min. b) Permanent Set after after 5 min	% %	60 – 90 ± 5	IS-10810 Part-30 / IEC 60811-507
Oven ageing at 135 °C, 168 hours a) Variation in Tensile Strength b) Variation in Elongation at Break	% %	± 15 ± 15	IS-10810 Part-11 / IEC 60811-401
Volume Resistivity @ 25°C	Ohm.cm	1 X 10 <sup>16</sup>	ASTM D 257
Dissipation factor @ 1kHz, 25°C	-	0.0004	ASTM-D-150
Dielectric Constant @ 1kHz, 25°C	-	2.30	ASTM-D-150

### PROCESSING GUIDELINES :

It is recommended to dry the Catalyst Master batch and colour Master batch (if any) at 60°C in air oven in 4-6 cm layers for 8-12 hours. The Grafted Polymer should never be pre-heated.

The Grafted Polymer and Catalyst Master batch should be properly mixed at a ratio 95:5 at room temperature without shearing, just before consumption. Mixing in large quantities should be avoided, since such leftover premix cannot be stored.

It is important that extruder should not be kept idle for more that 10 minutes when filled with XL-03HS / XL-04FX premix. It should be kept running at a low RPM if it is needed for changeover of size etc.

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During extrusion, following temperature profile is suggested:

<b>Position</b>	<b>Temperature (°C)</b>
Barrel	150 - 170
Head	175 - 180
Die	190 - 200

To get maximum output (line speed), some adjustment in temperature profile and tooling size selection to be arrived by trial, depending on size and type of extruder and cable.

The time of cross-linking of the insulation usually dependent on the temperature and Humidity. The actual time taken should be ascertain by actual trial before bulk production.

**PACKAGING :**

- Moisture Barrier Multilayer Bags of 25 kg.
- 20' FCL will take palletized 11 MT & 40' will take 24.75 MT.

**STORAGE & SHELF LIFE :**

The shelf life of the product is 180 days from the date of production subject to following conditions:

- Storage temperature not generally exceeding 25°C.
- Away from direct sunlight and weathering.
- Closed and unbroken bags.
- Use of compound within 3-4 hours after bags are open.

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*The information given in the document is believed to be reliable and is given in the good faith but without warranty. The user should test the product to ascertain the suitability for the intended use. Product specification or the whole document is subject to change without any prior notice.*

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