



TPPL Wire & Cable Compounds

Technical Data Sheet

TPX 102 and TPX 212BK (Silane XLPE black compound for Low Voltage overhead power cable (ABC) insulation)

Description: TPX 102 is moisture curable Silane XLPE compound for low voltage crosslinked overhead (ABC) cable insulation or weather service drop cable insulation.. It is designed to be used together with our catalyst, additive & Carbon Black master batch TPX 212BK added @ 6 wt. % to impart long term thermo-oxidative and photo-oxidative degradation resistance to the finished cable and is crosslinked by exposed to low pressure steam, immersed in hot water or in ambient conditions.

Specifications

TPX 102 & TPX 212BK combination, insulated conductors will comply with the requirements of the following standard: - ICEA-S-66-524

Properties

Tests	Test Method	Unit	Typical Values
Density	ASTM D1505	g / cm ³	0.926
Combination properties: TPX 102: TPX 212 (94: 6) & cured in hot water at 90 °C for 2 hrs.			
Carbon Content	ASTM D 1603	Wt. %	2.5
Hot Elongation (200 °C under 20 N/cm ² load) ⁽¹⁾	IEC 60811-2-1	%	<100
Permanent Set ⁽¹⁾	IEC 60811-2-1	%	0
Tensile Strength ⁽¹⁾	IEC 60811-1-1	MPa	18
Elongation at break ⁽¹⁾	IEC 60811-1-1	%	600
Aged variation after aging at 135 °C for 7 days			
Tensile Strength ⁽¹⁾	IEC 60811-1-2	%	± 10
Elongation at break ⁽¹⁾	IEC 60811-1-2	%	± 10
Electrical Properties			
Dielectric Strength ⁽²⁾	IEC 60243	KV/mm	>21
DC Volume Resistivity ⁽²⁾	ASTM D 257	Ω.cm	1 x 10 ¹⁶
Dielectric constant at 23 °C at 50 HZ ⁽²⁾	ASTM D 150		2.2
Dissipation factor at 23 °C at 50 HZ ⁽²⁾	ASTM D 150		.0004

(1)Tests performed on 0.8 mm extruded tape. (2)Tests performed on 2 mm pressed sheet.

Packaging

TPX 102 pellets available in the following packages: -

* 25 kg moisture resistant heat sealed sacks and palletized, net weight 500 kg stretch wrapped for environment protection.

* 500 / 1000 kg Boxes with moisture resistant heat sealed liner, palletized boxes stretch wrapped for environment protection.

TPX 212BK Catalyst, additive & carbon black MB pellets available in the following packages: -

* 25 kg moisture resistant heat sealed sacks and palletized, net weight 500 kg stretch wrapped for environment protection.

Processing:

TPX 102 with TPX 212BK can process in wide variety of PE / PVC extruders with following guidelines.

Temperature °C

ZONE 1	2	3	4	Head	Die
165	180	190	200	215	230

These temperatures can slightly modify depending on extruder type, tool design and test results.

LD ratio	: -	24:1
Compression ratio	: -	2.1 to 2.9
Screen pack	: -	40/60/40
DDR	: -	1.5 to 2.4
Screw Cooling	: -	70 °C

Drying:

For better performance, Dry catalyst, additive & CB MB TPX 212 may be dried at 65 °C for 4 hrs. **Not recommended to dry TPX 102**

Storage & Handling

TPX 102 & 212BK must be stored unopened in a dry & stable temperature environment for optimum performance. A temperature range of 10 °C to 45 °C is recommended. The material must be used within a short time after exposure to humidity in order to minimize the risk of scorching during extrusion. **Compound** should be used directly from its packaging.

Shelf Life

Under ideal storage conditions a shelf life of more than 6 months can be expected.