



Polyethylene Visico™ LE0542

Silane Crosslinkable Semiconductive Compound

Description

Visico LE0542 is a silane crosslinkable black polyethylene compound, specially designed for semiconductive conductor screen and bonded insulation screen of power cables.

It is used for co-extrusion with LDPE silane crosslinkable insulation materials.

Applications

Visico LE0542 is intended for semiconductive screen in silane crosslinkable medium voltage (MV) AC cables with rated voltages up to 36 kV ($U_m = 42$ kV). It can be used as conductor and insulation screen for bonded cable constructions and as conductor screen for strippable cable constructions.

The values are voltages between phases as defined in IEC 60183.

Specifications

Visico LE0542 is expected to meet the applicable requirements included in the below mentioned standards provided it is processed using sound material handling, extrusion and crosslinking practices as well as appropriate testing procedures. This applies up to the maximum recommended voltage level indicated in "Applications" section above since some standards cover wider voltage ranges.

IEC 60502-2

Cenelec HD 620 S2 (Part 1)

Special Features

Visico LE0542 is a ready-to-use semiconductive compound, which requires no further addition of a catalyst masterbatch. Visico LE0542 crosslinks via the migration of catalyst from its co-extrusion with silane insulation layer.

The excellent distribution of carbon black and additives in Visico LE0542 would result in a smooth semiconductive screen.

Physical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Density	1125 kg/m ³	ISO 1183
Tensile Strain at Break (25 mm/min) ¹	> 150 %	ISO 527
Tensile Strength (25 mm/min) ¹	> 10 MPa	ISO 527
Strain at Break After Ageing (168 h, 135 °C) ¹	> 100 %	IEC 60811-401
Moisture	200 ppm	ISO 15512

¹ Measured on crosslinked specimens

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Electrical Properties

Property	Typical Value <small>Data should not be used for specification work</small>	Test Method
DC Volume Resistivity (23 °C)	< 100 Ωcm	ISO 3915

Processing Techniques

Visico LE0542 provides excellent surface finish and minimal risk for scorch when processing conditions are optimal. The actual conditions will depend on the type of equipment used. To produce a good and reliable cable, it is essential to ensure careful and very clean handling of the insulation material. Hence all material handling should preferably be conducted in closed systems and in clean room conditions. Practical advice is given in a separate brochure. Please contact your Borealis representative for more details.

Extrusion

A screen-pack on the extruder is recommended for improved melt homogenisation.

Crosslinking

Visico LE0542 in combination with Visico LE4422M/Visico LE4431M shall be crosslinked by immersion in hot water or exposed to low pressure steam at a temperature in typical circumstances of 70-80 °C. The time period needed for crosslinking will depend on e.g. the thickness of insulation or reel size. It is good practice to purge stranded aluminium conductors with air or nitrogen during crosslinking to prevent conductor corrosion.

Packaging

Package: Smallbins

Storage

Visico LE0542 has a shelf life of 18 months from production date if stored in unopened original packages, under dry and clean conditions at temperatures between 10 - 30 °C (50 - 85 °F). Material shelf life is affected by the storage conditions and extreme conditions influence the general material quality and performance.

It is also recommended to ensure proper stock rotation by First In – First Out principle.

More information on storage is found in the Safety data sheet (SDS) / Product safety information sheet (PSIS) for this product.

 **Polyethylene**
Visico LE0542**Safety**

Please see the Safety data sheet (SDS) / Product safety information sheet (PSIS) for details on various aspects of safety, recovery and disposal of the products. For more information, contact your Borealis representative.

Issuer:

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