

TECHNICAL DATA SHEET

(Rev. No. 01, Date: 01.02.2025)

BLS HD 5505

BLACK HIGH DENSITY POLYETHYLENE COMPOUND FOR POWER CABLES

DESCRIPTION

BLS Polymers Ltd. introduces a sophisticated compound for jacketing of MV, HV, EHV Power Cables – **BLS HD 5505**, a bimodal HDPE based Compound totally protected against Ultraviolet degradation and thermal degradation.

This compound is manufactured from HDPE resin, UV stabilizer and RoHS compliant that provides a balance of toughness, low shrinkage, high moisture barrier, high abrasion resistance, excellent weathering resistance, excellent chemical resistance, high ESCR, heat deformation resistance, low friction for easy pulling during installation, easy processability than conventional compounds. This compound meets the stringent quality requirements for Power Cables.

SPECIFICATIONS COMPLYING –

BLS HD 5505 meets the requirements of raw material for manufacturing of Cables as per-
 ASTM D 1248 Type III, Class C, Category 4, Grade E9, E8, J4 ISO 1872-PE, KCHL, 40 D-006, EN 50290-2-24 BS 6234: Type H03, TS2, IEC 60502, Type ST3, ST7, IEC 60840, Type ST3, ST7.

TYPICAL PROPERTIES

PROPERTY	TEST METHOD	UNIT	TYPICAL VALUE
Density	ASTM D 792	gm / cc	0.955±0.003
Melt Flow Index (190°C, 2.16 Kg Load)	ASTM D 1238	gm / 10 min	0.5±0.1
Tensile Strength at Break (50mm/min)	ASTM D 638	Kg / cm ²	300
Elongation at Break (50mm/min)	ASTM D 638	%	900
Oven Ageing at 110°C/ 10 days			
Elongation at Break	ASTM D 638	%	>300
Thermal Stress Cracking Resistance	ASTM D 2951	Hours	>96
Oxidative-induction time (OIT)	ASTM D 3895	Minutes	>70
ESCR (50°C, 10% Igepal, F0, 1000 hrs.)	ASTM D-1693	-	No Cracks observed
Moisture Content	ASTM D-817	%	0.02
Carbon Black Content	ASTM D 1603	%	2.5
Carbon black dispersion, Grading	ISO18553	-	2
Dissipation factor tan δ	ASTM D 150	-	0.0004
Di-electric Constant	ASTM D 150	-	2.35
Volume Resistivity	ASTM D 257	ohm-cm	1.5 X 10 ¹⁶
Dielectric Strength	ASTM D 149	kV/mm	>30
Hardness (1 sec)	ASTM D 2240	Shore D	61±1
Pressure Test at High temperature (115°C, 6h)	IEC 60811-3-1	%	<10
Brittleness temperature (<-76°C)	ASTM D 746	-	Passes
Absorption Coefficient (at 375 nm)	ASTM D 3349	-	>400

The typical values reported in the above table have been obtained from measurements made on extruded samples or pressed plates.

- Termite repellent and Rodent repellent version is also available on request

PROCESSING GUIDELINES

Recommended Processing Condition **BLS HD 5505** provides excellent surface finish and high output rates

TECHNICAL DATA SHEET

(Rev. No. 01, Date: 01.02.2025)

over a broad range of conditions. For extrusion standard PE-screws are recommended, but screws designed for PVC also can be used with good result.

We recommend that material is pre-dried at $85\pm 5^{\circ}\text{C}$ for 2-3 hours for best performance.

Temperature profile

Zone 1	Zone 2	Zone 3	Zone 4	Flange	Head	Die
170 ± 10	180 ± 10	180 ± 10	200 ± 10	210 ± 10	210 ± 10	210 ± 10

To minimize shrink back hot cooling water, min 60°C in the first cooling trough is strongly recommended. BLS HD 5505 can be processed using either tube or pressure tooling. With tube tooling, a drawdown ratio of at least 3:1 to 4:1 is recommended. Higher drawdown ratios will increase jacket tightness. However, actual temperature profile will depend upon the screw compression ratio, L/D ratio, type of extrusion sleeve or pressure.

PACKING

BLS HD 5505 is available in 25 kg bags, 700 kg Jumbo bags in pallet, 25 kg bags collated in a wooden pallet and stretch wrapped, 700 kg Octabin.

STORAGE & SELF LIFE

BLS HD 5505 must be stored in ambient temperature (not exceeding 50°C) in a shaded area in sealed and intact bags to avoid exposure to sunlight and moisture. Long storing may affect the property of the compound and for this reason should be used within 12 months from the compounding date. It is better to measure the moisture and dry the material using dehumidifier dryer before use after long storage.

SAFETY

The product is not classified as a hazardous preparation. Dust and fines from the product carry a risk of dust explosion. All equipment should be properly earthed. Inhalation of dust should be avoided as it may cause irritation of the respiratory system. Small amounts of fumes are generated during processing of the product. Proper ventilation is therefore required.

Please refer to our MSDS for details on various aspects of safety, recovery, disposal and handling of the product.

RECYCLING

The product is suitable for recycling using various methods of shredding and cleaning in-house production waste should be kept clean to facilitate direct recycling.

Disclaimer:

The information contained herein may include typical properties and processing parameters of the grade or its typical performances when used in respective applications. The values given above are based on analysis of representative samples and not the actual product supplied. It is the customer's responsibility to inspect and test our grades in order to satisfy itself as to the suitability of the products for the customer's particular application. The customer is solely responsible for all determinations regarding any use of material or product and any process in its area of interest. BLS assumes no obligation or liability for any loss, damage or injury directly or indirectly suffered or incurred as a result of using any of the information or product given in this document. The information and data presented herein is true and accurate to the best of our knowledge. No warranty and/or guarantee expressed or implied, is made regarding performance or otherwise. This information and data may not be considered as a suggestion to use our products without taking into account existing patents, or legal provisions or regulations, whether national or international. The user of any information and/or data is advised to obtain the latest details from any of the offices of the company or its authorized agents, as the information and/or data is subject to change based on the research and development work undertaken by the company.