

Technical Data Sheet

Lupolen 4552D BLACK

High Density Polyethylene



Product Description

Lupolen 4552D black is a UV and thermal stabilised high-density polyethylene with a multimodal molecular weight distribution designed for extrusion. *Lupolen* 4552D black is produced with the advanced Hostalen technology which provides the material with excellent mechanical and physical properties. The excellent dispersion of the fine particle sized carbon black ensures the material has excellent weathering resistance. *Lupolen* 4552D black fulfils the requirements of DIN 30670, NFA 49710, CAN, CSA-Z245.21-M98 and prEN 10285 when used in combination with the maleic-anhydrided grafted adhesives Lucalen. G3710E P and a compatible fusion-bonded epoxy powder.

Lupolen 4552D black is recommended as the topcoat layer in 3LPE pipe coating applications and is suitable for severe laying conditions even at elevated temperatures. *Lupolen* 4552D black can be used up to 85°C service temperature of the pipeline when used in combination with the maleic-anhydride grafted adhesives Lucalen G3710E or *Lucalen* G3710E P and a compatible fusion-bonded epoxy powder.

This grade is available in black, in pellet form.

| | |
|--------------------------|---|
| Application | Pipe Coating |
| Market | Industrial, Building & Construction; Pipe |
| Processing Method | Extrusion Coating |
| Attribute | Bacteria Resistant; Fungus Resistant; Good Chemical Resistance; Good Creep Resistance; Good Impact Resistance; Good UV Resistance; Good Weather Resistance; High Density; High ESCR (Environmental Stress Cracking Resistance); Low to No Water Absorption; Ozone Resistant |

| Typical Properties | Nominal Value | Units | Test Method |
|---------------------------------------|---------------|-------------------|---------------|
| Physical | | | |
| Melt Flow Rate | | | |
| (190 °C/2.16 kg) | 0.42 | g/10 min | ISO 1133-1 |
| (190 °C/5.0 kg) | 1.7 | g/10 min | ISO 1133-1 |
| Density | 0.956 | g/cm ³ | ISO 1183-1/A |
| Bulk Density, (23 °C) | > 0.5 | g/cm ³ | ISO 60 |
| Mechanical | | | |
| Tensile Modulus | 900 | MPa | ISO 527-1, -2 |
| Tensile Stress at Yield | 23.0 | MPa | ISO 527-1, -2 |
| Tensile Strain at Break | 700 | % | ISO 527-1, -2 |
| Environmental Stress Crack Resistance | > 2000 | hr | ASTM D1693 |
| Film | | | |
| Water Content | <= 0.1 | % | ISO 15512 |



| | | | |
|--|-------|--------|-------------|
| Impact | | | |
| Notched Izod Impact Strength, (-20 °C) | >= 3 | kJ/m² | ISO 180 |
| Hardness | | | |
| Shore Hardness, (Shore D) | 60 | | ISO 868 |
| Thermal | | | |
| Vicat Softening Point | 124 | °C | ISO 306 |
| Oxidation Induction Time, (210 °C) | >= 30 | min | ISO 11357-6 |
| Peak Melting Point | 130 | °C | ISO 11357-3 |
| Electrical | | | |
| Volume Resistivity | 10E16 | ohm*cm | ASTM D257 |
| Additive | | | |
| Carbon Black Content | 2.20 | % | ISO 6964 |

Notes

These are typical property values not to be construed as specification limits.

