POLYETHYLENE
Borstar® ME3440
Black Medium Density Polyethylene for Pressure Pipe

DESCRIPTION
Borstar ME3440 is a black, bimodal medium density polyethylene classified as a MRS 8.0 material (PE80), with an optimum balance between flexibility and strength, produced with the advanced Borstar technology. Well dispersed carbon black gives outstanding UV resistance. Long-term stability is ensured by an optimised stabilisation system.

Borstar ME3440 is now registered with the international Traceability coding (Traccoding), under the code **R03**, in support of ISO12176-4 (2003).

APPLICATIONS
Borstar ME3440 is recommended for pressure pipe systems in the applications field of drinking water, natural gas, pressure sewerage, relining, sea outfall and industrial, where flexibility and coilability is of importance. It also shows excellent resistance to rapid crack propagation and slow crack growth. Thanks to the structure, it gives outstanding extrudability, compared to conventional PE80 products.

PHYSICAL PROPERTIES

		Typical Value*	Unit	Test Method
Density	(Base resin)	940	kg/m^3	ISO 1183
Density	(Compound)	951	kg/m^3	ISO 1183
Melt Flow Rate	(190°C/2.16 kg)	0.2	g/10 min	ISO 1133
Melt Flow Rate	(190°C/5.0 kg)	0.85	g/10 min	ISO 1133
Tensile Stress at Yield	(50 mm/min)	19	MPa	ISO 527-2
Tensile Modulus	(50 mm/min)	800	MPa	ISO 527-2
Elongation at Yield		10	%	ISO 527-2
Elongation at Break		>600	%	ISO 527-2
Charpy Impact Strength, v-notched	(0°C)	20	kJ/m^2	ISO 179/1eA
Carbon Black content		≥2	%	ASTM D 1603
Brittleness Temperature		<-70	°C	ASTM D 746
ESCR	(10% Igepal), F_{50}	>5000	h	ASTM D 1693-A
Thermal Stability	(210°C)	>15	min	EN 728

* Data should not be used for specification work.

PROCESSING GUIDELINES
The actual extrusion conditions will depend on the type of equipment used and the size and wall thickness of the pipe required. The following conditions may be used as a guide when starting up the extruder:

Cylinder	180 – 210°C
Head	200 – 210°C
Die	200 – 210°C
Melt temperature	200 – 220°C

Borstar® ME3440

Black Medium Density Polyethylene for Pressure Pipe

For normal extrusion conditions and applications we suggest preheating and drying with a maximum preheating temperature of 90°C.

Specific recommendations for processing conditions can be determined only when the application and type of equipment are known. Please contact your local Borouge representative for such particulars.

STORAGE AND HANDLING

Borstar ME3440 should be stored in dry conditions at temperatures below 50°C and protected from UV-light.

Improper storage can initiate degradation, which results in odour generation and can have negative effects on the physical properties of the product.

SAFETY

Borstar ME3440 is not classified as dangerous 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.

RECYCLING

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

A Safety Data Sheet is available on request. Please contact your Borouge representative for more details on various aspects of safety, recovery and disposal of the product.

RELATED DOCUMENTS

The following related documents are available on request, and represent various aspects on the usability, safety, recovery and disposal of the product:

Recovery and disposal of Polyolefins
Information on Emissions from Processing and Fires
Safety Data Sheet, SDS
Environment Fact Sheet

Liability statements on:

- Compliance to Regulations for Drinking Water Pipes