

ISO 4437:1997(E)

Table 1: Characteristics of the PE compound¹

Characteristics	Units	Requirements	Test parameters	Test method
Conventional density	kg/m ³	≥ 930 (base polymer)	23 °C	ISO 1183 ISO 1872/1
Melt mass-flow rate		± 20 % of value nominated by compound producer	190 °C	ISO 1133
Thermal stability	min	>20	200 °C	ISO/TR 10837
Volatile content at extrusion	mg/kg	≤350		Annex A
Water content ²⁾		≤300		ASTMD4019
Carbon black content	% (m/m)	2,0% < ... < 2,5%		ISO 6964
Carbon black dispersion ³⁾	grade	<3		ISO 11420
Pigment dispersion ⁴⁾	grade	S3		ISO 13949
Resistance to gas constituents	h	≥ 20	80 °C 2 MPa	Annex B
Resistance to rapid crack propagation (RCP)				
Full scale (FS) test: or	d_n 2250 mm	MPa	The critical pressure in the FS test shall be greater than or equal to the value of the MOP of the system multiplied by 1,5.	0 °C ISO 13478
S4 test:	Shall be performed on pipe with a wall thickness of 215 mm	MPa	The critical pressure in the S4 test shall be equal to or greater than the value of the MOP of the system divided by 2,4 ⁵⁾	0 °C ISO 13477

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Table 1: Characteristics of the PE compound (concluded)

Characteristics	Units	Requirements	Test parameters	Test method
Resistance to slow crack growth $e_n > 5\text{mm}$	h	165	80 °C, 0,8 MPa ⁶⁾ 80 °C, 0,92 MPa ⁷⁾	ISO 13479

¹⁾ Non-black compounds shall conform to the weathering requirements given in table 6.

²⁾ Only applicable if the compound does not conform to the requirement for volatile content. In case of dispute the requirement for water content shall be acceptable.

³⁾ Carbon black dispersion for black compounds only.

⁴⁾ Pigment dispersion method for non-black compounds only.

⁵⁾ This factor 2,4 is still under study and may be subject to change. If the requirement is not met, then retesting by using the full scale (FS) test will be performed.

⁶⁾ Test parameter for PE 80, SDR 11.

⁷⁾ Test parameter for PE 100, SDR 11.