

HIGH DENSITY POLYETHYLENE

PE 100 - BIMODAL

GRADE: PE2NT11-9

Typical applications

Bimodal HDPE composition PE100 Grade PE2NT11-9 is intended for production of pipes and fittings o gas distribution networks as well as pressure pipes and fittings to domestic water supply systems

TECHNICAL CHARACTERISTICS

	Parameter	Standard
1.	Density, kg/m ³ at 23°C at 20°C	Minimum 930 956 - 962
2.	Thermal stability (oxidation induction time) ¹ at 200°C ² ,min, minimum	20
3.	Melt flow index (MFI) at 190°C, g/10 min a) at load of 212 N (2,16kgf) b) at load of 49 N (5kgf), minimum	6 - 8 0,12
4.	Melt flow index spread (MFI 5) within a batch, %	±20
5.	Weight content of volatile substances ³ , mg/kg	≤ 350
6.	Water content ⁴ , mg/kg	≤ 300
7.	Weight content of carbon black, %, within limits	2.0 - 2.5
8.	Carbon black distribution ⁵	Class ≤ 3, Type A.1, A.2, A.3 or B
9.	Gas condensate (gas components) resistance ⁶) (at 80 °C and circular stress 2.0 MPa (on pipes d32 mm SDR 11), test duration of 20 h	Without destruction
10.	Resistance to rapid crack propagation (critical pressure pc, MPa) (e ≥ 20mm (dn: 225 mm SDR 11) for C=2 (strength factor)	MOP/2.4 - 0.072
11.	Resistance to slow crack propagation (dn:110 mm SDR 11) ⁷ , test duration of 500 hours	Without destruction in the course of testing
12.	Tensile resistance of butt welded joint at 23 °C (dn:110 mm with SDR 11), failure mode	Ductile - compliant brittle-non-compliant
13.	Durability at constant internal pressure (confirmation of classification) at 20 °C on pipes d32 mm with SDR 11 at initial stress, h, minimum 12.0 MPa 11.1 MPa	100 2500
14.	Classification (lower confidence limit of long-term durability), σ LCL, MPa	≥10

Notes:

1) Test atmosphere – oxygen, sample weight – (15 ± 2) mg.

2) it is permissible to carry out testing at 210 °C or 220 °C . In the event of disagreement, tests shall be carries out at 200 °C.

3) Test result is not a rejecting one.

4) Water content shall be determined if weight content of volatile substances exceeds the set standard.

At that, the difference between the obtained value of weight content of volatile substances and that of weight content of water shall not exceed 350 mg/kg. Requirement to water content in the composition is applied to the manufacturer at production stage, to the consumer – at processing stage (if water content exceeds the limiting value, then the material has to be dried prior to use).

5) In the event of disagreement, test samples shall be manufactured by pressing method.

6) 50% n-decane (98%) and 50% 1,3,5-trimethylbenzene by weight.

7) Internal pressure – 9.2 bar, test medium – water in water.

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