



METALEN PE-21

Black high-density polyethylene for steel pipe insulation by extrusion

Description

METALEN PE-21 represents the nanocomposite material created using Monamet 104 nano-size active filler (in accordance with TU 2164-017-63341682-2014) introduced in a compound based on high-density polyethylene and a set of modifying additives.

METALEN PE-21 compound contains a set of stabilizers of prolonged effect, ensuring long-term oxidative degradation resistance at increase operating temperatures.

METALEN PE-21 meets the requirements for class 2-5 polyethylene compounds per STO Gazprom, 2-2.3-13-2007 "Technical requirements for factory-applied outer anti-corrosion polyethylene pipe coatings for construction, reconstruction, and overhaul of underground and offshore gas pipelines with the operating temperature of up to +80 °C" (correct. 1, 2, 3).

Application

METALEN PE-21 compound is intended to produce outer anti-corrosion protective coating for main steel pipelines. METALEN PE-21 is a versatile material characterized by adhesive and protective to coat properties at the same time.

Processing Recommendations*

METALEN PE-21 compound is extrusion-applied directly to the pipe surface coated with epoxy primer.

	Charging Zone	Extruder Barrel Zones (Screw)							Extruder Adapter	
Zone No.	1	2	3	4	5	6	7	8	9	10
t set (°C)	89	218	219	228	240	245	245	246	244	244

*The exact recommendations may be given after the material processing equipment parameters are determined

Quality Parameters

Parameter	Value	Unit	Test Method
Density	0.940-0.965	r/cm ³	GOST 15139
Melt flow rate	0.2÷0.8*	r/10 min	GOST 11645
Volatiles mass fraction	max. 0,05	%	GOST 26359
Oxidation induction time at 200 °C and 100 ml/min oxygen flow	min. 90	min	ISO 11357-6
Elongation at break at -45±3 °C	min. 100	%	GOST 11262
Tensile strength	min. 24	MPa	GOST 11262
Carbon black	min. 2	%	GOST 26311
Elongation at break	min. 600	%	GOST 11262
Water absorption after 24 hours water storage at (23±5) °C	max. 0,06	%	GOST 4650
Water absorption after 1000 hours water storage at 80 °C	max. 1,0	%	GOST 4650
Melting temperature	122-137	°C	ISO 11357-3
Thermal ageing resistance: Elongation at break after 100 days air storage: - t 100 °C - t 120 °C	min. 400	%	GOST 11262

* The correct MFR range is determined as agreed between the manufacturer and the consumer

Storage

The guaranteed shelf life is 24 months.

Store METALEN PE-21 compound on pallets in a covered storage area ensuring protection from atmospheric precipitations, exposure to direct sunlight, contaminants, in at least 1 m from heating appliances. The storage temperature shall not exceed 35 °C.

Packing

25 kg polyethylene bags.

The information contained herein is correct and accurate to the best of our knowledge. All the suggestions and recommendations are given with no guarantee, since the product use conditions in production conditions are beyond the manufacturer's control. Please, be also warned that patents may exist for some applications of the product.

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