



POLIDAN[®] EC/MD

Medium density polyethylene based compound, crosslinkable by exposure to moisture for power and signal cable insulation

description medium density PE based compound crosslikable by moisture, consisting of a silane pregrafted base compound to be used with a catalyst masterbatch (Sioplas method)

standard complying IEC 60502 XLPE, IEC 60092/351, CEI 18-16/351, BS 7655 GP8, VDE 0276 2X11, HD 604 2X11

physical properties

	typical value	test method
density @23°C (g/cm ³):	0.934	ASTM D 792
M.F.I. @190°C/5.0 kg (g/10')	0.44	Padanaplast
unaged mechanical properties - tensile strength (N/mm ²): - elongation at break (%):	21.5 420	IEC 60811
mechanical properties after ageing in air oven, 168 hours @135°C - variation on tensile strength (%): - variation on elongation at break (%):	+16 0	
mechanical properties after ageing in air oven, 240 hours @150°C on untinned copper - bending test:	no cracks	
hot set test @200°C, 20 N/cm ² - elongation under load (%): - permanent elongation after cooling (%):	50 0	
water absorption, 24 hours @100°C (mg/cm ²):	0.3	
water absorption, 336 hours @85°C (mg/cm ²):	0.3	

electrical properties

		typical value	test method
volume resistivity (Ω x cm):	@20°C:	4.1 x 10 ¹⁵	IEC 60502
	@90°C:	1.4 x 10 ¹⁵	
insulation constant (MΩ x km):	@20°C:	15000	
	@90°C:	5000	

tests made on pressed or extruded specimens, added with 3% of Catalyst CT/1 and crosslinked in hot water

processing POLIDAN® EC/MD pregrafted base must be added with Catalyst CT/1 masterbatch to promote curing. Catalyst dosage is 3% by weight and blending must be done just before using (2-3 hours max.), preferably in the extruder hopper. Catalyst doesn't need any predrying

The pregrafted base compound is sensible to moisture; open bags must be used within few hours.

extrusion equipment Standard PVC extruders and single or double flight screw, having a L/D ratio of 20+30 and an adequate barrel thermoregulation; longer screws may require a reduced dosage of Catalyst. Screw cooling not required. Filter net: 80-160 mesh/cm². Compression tools suggested.

temperature setting

	zone 1	zone 2	zone 3	zone 4	collar	head	die
max (°C)	160	170	180	190	190	190	220
min (°C)	140	150	160	170	170	170	180

curing

- by immersion in hot water at 60-70°C
- by exposure to low pressure steam (about 0.15 bar)
- by exposure in ambient at 10-30°C for some days

In all cases curing time depends on insulation thickness; for 0.7-1.2 mm wall thickness 2-4 hours are generally necessary in case of forced curing in hot water and 8-12 hours in case of curing in steam room; in case of self curing, time depends also on the specific ambient conditions.

colouring PE based masterbatches added at 0.6-1% (approx.) by weight; predrying of colour masterbatch is suggested if moisture absorption occurred during storage (4-6 hours at 70-80°C).

storage The product should be stored under the following conditions:

- closed and unbroken bags
- ambient temperature not exceeding 30°C
- avoid direct exposure to sunlight and weathering

Product alterations could occur due to extended period of storage. Its use within six months from the production date is suggested.

Solvay Padanaplast S.p.A. accepts no liability of any kind in case the above mentioned conditions are not fulfilled.

packaging 25 kg moisture-resistant bags on 1375 kg pallet.

contact Solvay Padanaplast S.p.A. - Via Paganina 3 - 43010 Roccabianca (Parma) - ITALY
phone: +39-0521-5291
fax: +39-0521-870427
e-mail: info.padanaplast@solvay.com
http: www.padanaplast.com

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