

TABOCAB SXI 004



Silane cross-linkable low-density compound suitable for cable insulation

Description

TABOCAB SXI 004 is a crosslinkable insulation compound made using SIOPLAS technology, suitable for low-voltage cables. For the final curing and optimal thermal stability, **TABOCAB CM 008** shall be used for this compound.

Typical application

Cable insulation for construction applications. Primarily used for signal, control and power cables up to 1 kV. The properties of this compound comply with the requirements of **IEC 60502 XLPE**; IEC 60092/351; VDE 0276 2X11; HD 604 2X11.

	Typical properties	Test method	Unit	Nominal value
Physical properties	Density	ISO 1183-1A	g/cm ³	0,926
	Melt Flow Index (190 °C/5 kg)	ISO 1133	g/10 min	2,0
	Shore hardness	ISO 868	Shore D	58
	Water absorption (90 °C, 24 hr)	EN 60811-402	mg/cm ²	< 0,5
	Water absorption (85 °C, 336 hr)	EN 60811-402	mg/cm ²	< 0,5
Mechanical properties	Tensile strength at break	EN 60811-501	MPa	20
	Tensile elongation at break	EN 60811-501	%	500
Thermal properties	<i>Hot set test (200 °C, 20 N/cm²)</i>			
	Elongation under load	EN 60811-507	%	< 70
	Permanent elongation	EN 60811-507	%	0
	<i>Mechanical properties after ageing in air oven (135 °C, 168 hr)</i>			
	Change in tensile elongation	EN 60811-401	%	-8
	Change in tensile strength	EN 60811-401	%	-20
	Cold bend test (-30 °C)	EN 60811-504	-	no cracks
	Hot pressure test - max. penetration (90 °C)	EN 60811-508	%	< 50
Hot air shrinkage (130 °C, 1 hr)	EN 60811-509	%	< 4,0	
Electrical properties	Volume resistivity (20 °C, 500 V)	IEC 60502-1	Ω x cm	> 1 x 10 ¹⁶
	Volume resistivity (90 °C, 500 V)	IEC 60502-1	Ω x cm	4,9 x 10 ¹⁵
	Insulation resistance constant (20 °C, 50 Hz)	IEC 60502-1	MΩ x km	37600
	Insulation resistance constant (90 °C, 50 Hz)	IEC 60502-1	MΩ x km	8000
Flammability	Caloric potential (upper gross)	ISO 1716	MJ/kg	37

Notes* The above values are typical for this material, not standardized.

Processing Guidelines

Drying:

TABOCAB SXI 004 is recommended to be pre-conditioned at least to 18 °C before opening the package to avoid moisture condensation on the surface of the compound.

Additional level:

Catalyst Masterbatch **TABOCAB CM 008** and graft polymer **TABOCAB SXI 004** are normally being added in the ratio of 95 parts graft to 5 parts of catalyst masterbatch. This formulation insures optimum processing conditions and application performance of the XLPE material.

Coloring: PE-based masterbatches added at 0,5 - 1,5 % by weight. Higher dosages of color masterbatches may negatively influence the final physical properties such as volume resistivity.



AUTOMOTIVE APPLICATIONS



CONSTRUCTION APPLICATIONS



GENERAL APPLICATIONS



HYGIENIC APPLICATIONS



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Machine requirements:

TABOCAB SXI 004 can be processed on standard extrusion lines with a thermoregulation system. Screw cooling is not required, but effective steering of the cylinder temperatures with suitable cooling is recommended.

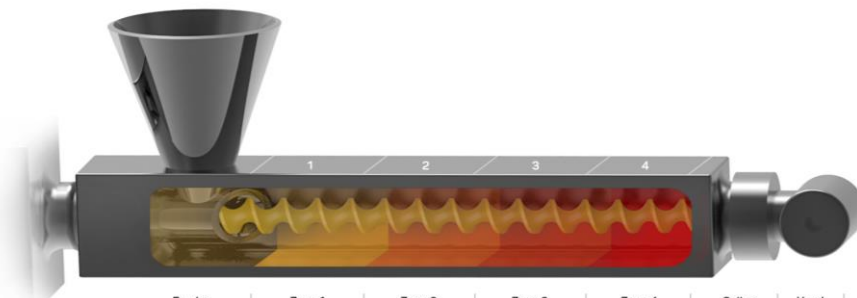
The following extrusion setups are recommended:

- Pre-heating of the conductor up to 100 °C
- Using cartridge with the shallow inlets – small volume output
- Minimal extrusion speed on PE screw: 20 - 30 RPM, recommended to be 40 RPM
- Using a breaker plate and filter net (80 - 140 holes/cm²)
- Compression or semi-compression tools with a short polishing surface; die should be 0,1 up to 0,2 mm smaller than the outer diameter of the insulation
- Temperature of water batch for cooling of the insulation is recommended at range 40 – 60 °C to eliminate the stress after the extrusion and promote crosslinking

Screw:

preferable compression: 2,5-3 : 1 (Standard PE screw)
screw length: 20-30 L/D

Temperature profile:



	Feeder	Zone 1	Zone 2	Zone 3	Zone 4	Collar	Head	Die
Min (°C)	15	135	140	160	160	170	180	200
Max (°C)	40	155	160	180	180	190	200	220

Cross-linking cure

The following methods are recommended:

- By immersion of the final product in hot water at 70 - 90 °C
- By exposure to low-pressure steam at 60 - 80 °C (about 0,15 bar)
- By ambient exposure; the kinetics of cross-linking depend on the ambient temperature and relative humidity

Storage and handling

TABOCAB SXI 004 must be stored under the following conditions:

- Sealed undamaged bags
- Ambient temperature not exceeding 30 °C
- Exposure to direct sunlight must be avoided
- Shelf life: 6 months from the production date printed on the packaging
- Material should be used directly after opening the packaging

Packaging

Boxes of 600 kg containing a moisture-resistant multilayer lining
Moisture resistant multilayer bags containing 20 kg