

# TABOCAB SXI 009



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

## Description

**TABOCAB SXI 009** is a crosslinkable high flexible insulation compound made by SIOPLAS technology for outdoor and renewable applications in operating temperature up to 90 °C and DC voltage rating up to 2 kV. The recommended Catalyst Masterbatch for this compound is **TABOCAB CM 009**.

### Typical application

**TABOCAB SXI 009** is designed to be used for Solar Cable as insulation compound which could be comply together with the sheathing compound TABOCAB SXG 011 EN 50618:2015 and IEC 62930 in the cable construction of H1Z2Z2-K. The properties of this compound also comply with the requirements of: IEC 60502 XLPE; IEC 60092/351; VDE 0276 2X11; HD 604 2X11.



AUTOMOTIVE  
APPLICATIONS



CONSTRUCTION  
APPLICATIONS



GENERAL  
APPLICATIONS



HYGIENIC  
APPLICATIONS

	Typical properties	Test method	Unit	Nominal value
Physical properties	Density	ISO 1183-1A	g/cm <sup>3</sup>	0,914
	Melt Flow Index (190 °C/5 kg)	ISO 1133	g/10 min	2,2
	Shore hardness	ISO 868	Shore D	48
	Water absorption (90 °C, 24 hr)	EN 60811-402	mg/cm <sup>2</sup>	< 2
	Water absorption (90 °C, 336 hr)	EN 60811-402	mg/cm <sup>2</sup>	< 2
Mechanical properties	Tensile strength at break	EN 60811-501	MPa	21,5
	Tensile elongation at break	EN 60811-501	%	> 700
	Dynamic penetration	EN 50618 Annex D	-	pass
Thermal properties	<i>Hot set test 200 °C (20 N/cm<sup>2</sup>)</i>			
	Elongation under load	EN 60811-507	%	+10
	Permanent elongation	EN 60811-507	%	-10
	<i>Hot set test 250 °C (20 N/cm<sup>2</sup>)</i>			
	Elongation under load	EN 60811-507	%	+80
	Permanent elongation	EN 60811-507	%	+15
	<i>Mechanical properties after ageing in air oven (150 °C, 168 hr)</i>			
	Change in tensile strength	EN 60811-401	%	19
	Change in tensile elongation	EN 60811-401	%	24
	<i>Thermal endurance (120 °C)</i>			
	50% Reduction of elongation	EN 60216-1, -2	hr	> 20000
	Cold bend test (-40 °C)	EN 60811-504	-	no cracks
	Cold impact test (-40 °C)	EN 60811-506	-	no cracks
Hot pressure test - max. penetration (90 °C)	EN 60811-508	%	< 50	
Hot air shrinkage (1 hr, 120 °C)	EN 60811-509	%	< 2	



<b>Chemical resistance</b>	<i>Resistance against acids &amp; alkaline solutions (23 °C, 168 hr)</i>			
	Change in tensile strength	EN 60811-404	%	22
	Change in tensile elongation	EN 60811-404	%	80
	<i>UV and Weathering resistance (60 °C, 720 hr, 43 W/m<sup>2</sup> / 340 nm)</i>			
	Change in tensile strength	EN 50289-4-17	%	20
	Change in tensile elongation	EN 50289-4-17	%	27
<b>Electrical properties</b>	O <sub>3</sub> resistance test (25 °C, 24 hr, O <sub>3</sub> 250 ppm)	EN 60811-403	-	no cracks
	Volume resistivity (20 °C, 500 V)	IEC 60502-1	Ω x cm	3,8 x 10 <sup>15</sup>
	Volume resistivity (90 °C, 500 V)	IEC 60502-1	Ω x cm	1,0 x 10 <sup>14</sup>
	Insulation resistance constant (20 °C, 50 Hz)	IEC 60502-1	MΩ x km	14000
<b>Flammability</b>	Insulation resistance constant (90 °C, 50 Hz)	IEC 60502-1	MΩ x km	400
	Caloric potential - (upper gross)	ISO 1716	MJ/kg	35



AUTOMOTIVE APPLICATIONS



CONSTRUCTION APPLICATIONS



GENERAL APPLICATIONS



HYGIENIC APPLICATIONS

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

**Reference cable\*** 1 x 2,5 mm<sup>2</sup> Insul. 0,7 mm TABOCAB SXI 008, Sheath 0,8 mm TABOCAB SXG 011

## Processing Guidelines

### Drying:

**TABOCAB SXI 009** is recommended to be pre-conditioned at least 18 °C before the opening of the package to avoid moisture condensation on the surface of the compound.

### Additional level:

Catalyst Masterbatch **TABOCAB CM 009** and graft polymer **TABOCAB SXI 009** are normally being added in the ratio of 94 parts graft to 6 parts of catalyst masterbatch. This formulation insures optimum processing conditions and application performance of the XLPE material.

Coloring: EVA and 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.

### Machine requirements:

**TABOCAB SXI 009** 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:

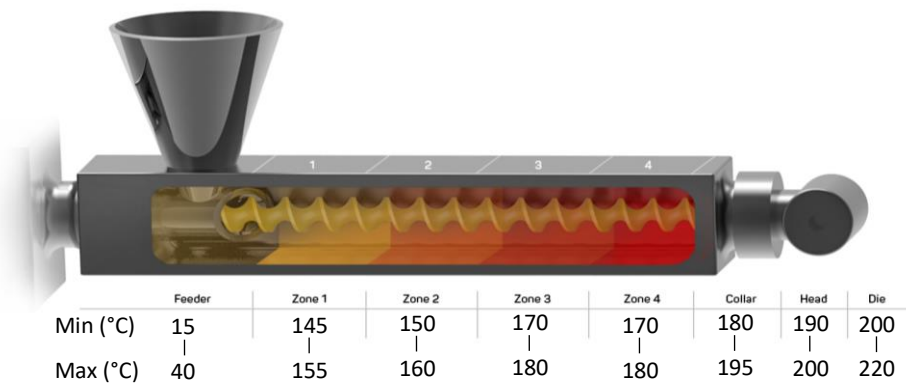
- Pre-heating of the conductor up to 100 °C
- Using cartridge with the shallow inlets – small volume output
- Minimal extrusion speed on PE screw: 20 - 30 RPM, recommended to be 40 RPM
- Using a breaker plate and filter net (80 - 140 holes/cm<sup>2</sup>)
- Compression or semi-compression tools with 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:

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

### Temperature profile:



AUTOMOTIVE  
APPLICATIONS



CONSTRUCTION  
APPLICATIONS



GENERAL  
APPLICATIONS



HYGIENIC  
APPLICATIONS

### 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; kinetics of cross-linking depends on ambient temperature and relative humidity

### Storage and handling

**TABOCAB SXI 009** must be stored under following conditions:

- Closed and undamaged bags
- Ambient temperature not exceeding 30 °C
- Exposure to direct sun radiation 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