



APPLICATION

Toxfree® Plus SIWO Xtrem 1,1 kV and 3,3 kV is a fire resistant cable and high temperature conditions. They are also vital elements for wind converters, transformers, solar power inverters, etc. In drives, silicones decrease copper cross-section and gives flexibility for compactness.

CONSTRUCTION

Conductor

Electrolytic annealed tinned copper, class 5 (flexible), according to EN 60228 and IEC 60228.

Insulation

Silicone rubber.

Outer sheath

Protective synthetic yarn braid, PUR varnished.
Yellow colour for 1,1 kV and red colour for 3,3 kV.

CHARACTERISTICS



Electrical performance

Low voltage 1,1 kV.
3,3 kV.



Thermal performance

Maximum conductor temperature: 180°C.
Maximum short-circuit temperature: 350°C (max. 5 s).
Minimum service temperature: -55°C (fixed and protected installations).



Fire performance

Flame non-propagation according to EN 60332-1 / IEC 60332-1.
Fire non-propagation according to EN 60332-3-24 / IEC 60332-3-24.
Fire resistant (PH 120) minimum 120 minutes at 840 °C:
- According to IEC 60331-2 / EN 50200 for cable diameter ≤ 20 mm.
- According to IEC 60331-1 / EN 50362 for cable diameter > 20 mm.
Low Smoke Halogen Free according to EN 60754-1 / IEC 60754-1.
Low corrosive gases emission according to EN 60754-2 / IEC 60754-2.
Low smoke emission according to EN 61034 / IEC 61034:
Light transmittance > 60%.



Mechanical performance

Minimum bending radius: 5x cable diameter.



Environmental performance

Chemical & Oil resistance: Excellent.
Excellent dielectric strength.
High abrasion resistance.

STANDARDS / COMPLIANCE



Based on
IEC 60502-1



Standards and approvals
RoHS / CE



SIWO Xtrem[®]

1,1 kV and 3,3 kV

DIMENSIONS & CURRENT CARRYING CAPACITY 1,1 kV



Cross-section (mm ²)	Diameter (mm)	Weight (kg/km)	Open air (A) ¹
1 x 25	12,0	305	256
1 x 35	13,1	395	318
1 x 50	14,9	545	387
1 x 70	16,4	735	496
1 x 95	18,6	955	605
1 x 120	20,1	1.190	703
1 x 150	22,2	1.485	811
1 x 185	24,3	1.790	929
1 x 240	27,1	2.325	1.098
1 x 300	30,1	2.920	1.268
1 x 400	34,4	3.800	1.525

¹Reference method G at maximum conductor temperature according to IEC 60364-5-52 in open air at 30°C ambient temperature.

DIMENSIONS & CURRENT CARRYING CAPACITY 3,3 kV



Cross-section (mm ²)	Diameter (mm)	Weight (kg/km)	Open air (A) ¹
1 x 25	14,0	355	256
1 x 35	15,1	455	318
1 x 50	16,5	600	387
1 x 70	18,0	790	496
1 x 95	20,2	1.020	605
1 x 120	21,7	1.265	703
1 x 150	23,4	1.540	811
1 x 185	25,1	1.830	929
1 x 240	27,5	2.350	1.098
1 x 300	30,1	2.920	1.268
1 x 400	34,4	3.800	1.525

¹Reference method G at maximum conductor temperature according to IEC 60364-5-52 in open air at 30°C ambient temperature.

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1,1 kV and 3,3 kV

SHORT-CIRCUIT CURRENT-CARRYING CAPACITIES

Time (s)	0,1	0,2	0,3	0,5	1	1,5	2	2,5	3
A/mm²	452	320	261	202	143	117	101	90	83

CORRECTION FACTORS FOR AIR TEMPERATURE

Air T. (°C)	30	40	50	60	70	80	90	100	110	120
Factor	1	0,96	0,91	0,87	0,82	0,76	0,71	0,65	0,58	0,50

Other correction factors (for grouping cables, for harmonic currents), that are not in this specification, can be applied. Further information can be found in IEC 60364-5-52.