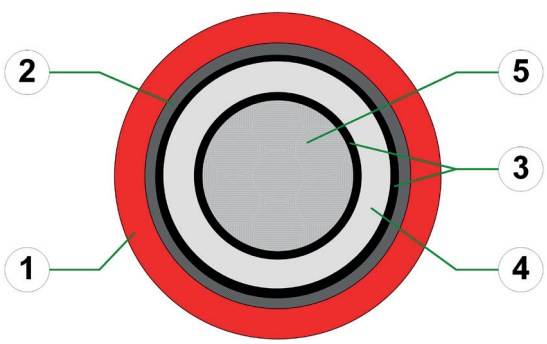
Data sheet
chainflex® CFCRANE.PUR

Medium voltage cable (Class 6.6.3.1) ● For maximum voltages and outputs ● PUR outer jacket ● Shielded ● Oil resistant and coolant-resistant ● Flame retardant ● PVC and halogen-free ● Notch-resistant ● Hydrolysis and microbe-resistant



1. Outer jacket: Pressure extruded, especially abrasion-resistant and highly bending-stable PUR mixture
2. Overall shield: Extremely bending-resistant wrapping made of tinned copper wires
3. Core insulation: Conductive rubber
4. Core insulation: Extruded EPR insulation between conductive rubber
5. Conductor: Highly-flexible cable consisting of bare copper wires

Example image
For detailed overview please see design table

Example image

Cable structure

Conductor	Highly-flexible cable consisting of bare copper wires (according to DIN EN 60228).
Core insulation	Inner and outer semiconducting layer made of condutive rubber. Insulating sheath made of highly-quality, heat-resistant and ozone-proof ethylene propylene rubber (EPR).
Overall shield	Extremely bending-resistant wrapping made of tinned copper wires Coverage approx. 85 % optical
Outer jacket	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2). **Colour:** Red **Printing:** White

„00000 m“* igus chainflex CFCRANE.PUR.--.--① ---② ③ kV Ubmax 12 kV

CE RoHS-II conform www.igus.de +++ chainflex cable works +++

*** Length printing:** Not calibrated. Only intended as an orientation aid.
① / ② Cable identification according to Part No. (see technical table).
③ Printing of nominal voltage (see general electrical values).
Example: ... chainflex **CFCRANE.PUR.950.01 (1x95/16)C 6/10 kV** ...

Garantie igus chainflex 36 Monate Garantie

igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

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Dynamic information

Bend radius	e-chain® linear	min. 10 x d
	flexible	min. 8 x d
	fixed	min. 5 x d
Temperature	e-chain® linear	-20 °C up to +80 °C
	flexible	-25 °C up to +80 °C (following DIN EN 60811-504)
	fixed	-30 °C up to +80 °C (following DIN EN 50305)
v max.	unsupported	10 m/s
	gliding	6 m/s
a max.		50 m/s²
Travel distance		Unsupported travel distances and up to 400 m for gliding applications, Class 6

These values are based on specific applications or tests. They do not represent the limit of what is technically feasible.

Guaranteed service life according to guarantee conditions

Double strokes	5 million	7.5 million	10 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-20/-10	12.5	13.5	14.5
-10/+70	10	11	12
+70/+80	12.5	13.5	14.5

Minimum guaranteed service life of the cable under the specified conditions.
The installation of the cable is recommended within the middle temperature range.

Electrical information

Nominal voltage	6/10 kV or 8,7/15 kV (following DIN VDE 0250), other voltages upon request
Testing voltage	24 kV (following DIN VDE 0250, Part 813)

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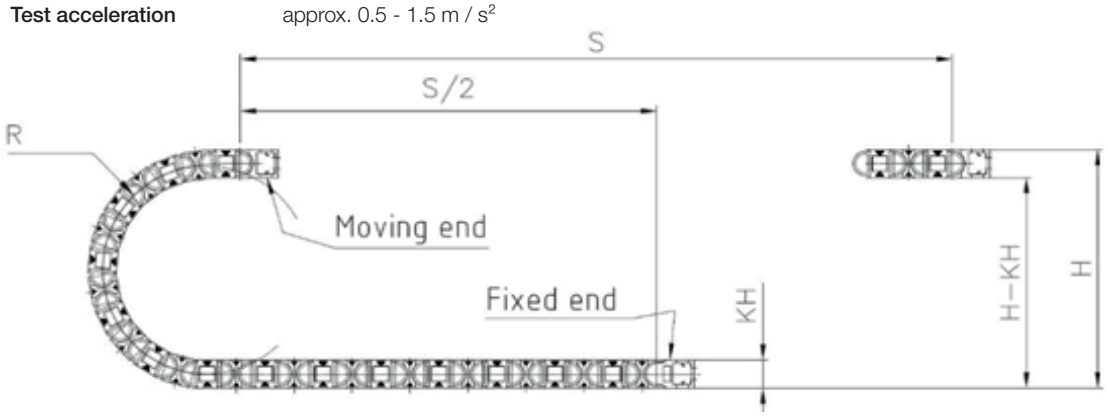
Example image

Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
Flame retardant	According to IEC 60332-1-2
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
Halogen-free	Following DIN EN 60754
UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II)
CE	Following 2014/35/EU

Typical lab test setup for this cable series

Test bend radius R	approx. 250 - 300 mm
Test travel S	approx. 1 - 15 m
Test duration	minimum 2 - 4 million double strokes
Test speed	approx. 0.5 - 2 m / s
Test acceleration	approx. 0.5 - 1.5 m / s²



Typical application areas

- For maximum voltages and outputs, Class 6
- Unsupported travel distances and up to 400 m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications, UV-resistant
- Ship to shore, crane applications, Conveyor technique

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Example image

Technical tables:

Mechanical information

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CFCRANE.PUR.350.01.6/10kV	(1x35/16)C	24.5	567	861
CFCRANE.PUR.500.01.6/10kV	(1x50/16)C	25.5	721	1024
CFCRANE.PUR.700.01.6/10kV	(1x70/16)C	27.5	940	1258
CFCRANE.PUR.950.01.6/10kV	(1x95/16)C	29.5	1166	1523
CFCRANE.PUR.1200.01.6/10kV	(1x120/16)C	31.5	1509	1780

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.
G = with green-yellow earth core **x =** without earth core

Electrical information

Conductor nominal cross section [mm²]	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2) [Ω/km]	Maximum current rating at 30 °C (following DIN VDE 0298-4) [A]
35	0.554	172
50	0.386	216
70	0.272	265
95	0.206	319
120	0.161	371

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.

Short circuit capacity (I_{thz}) according to DIN VDE 0298-4 (at T_{Leiter} = 80 °C and $T_{Kurzschluss}$ = 250 °C)

Conductor nominal cross section (S_n) [mm²]	Short circuit capacity (I_{thz}) [kA] [t_k = 1 s]	Short circuit capacity (I_{thz}) [kA] [t_k = 0.5 s]
35	5.2	7.4
50	7.5	10.5
70	10.4	14.7
95	14.2	20.0
120	17.9	25.3

J_{thr}: Short-time current density = 149 A/mm²
S_n: Nominal cross section
t_{kr}: Rated short-circuit duration = 1 s
t_k: Short-circuit duration

$$I_{thz} = J_{thr} \bullet S_n \bullet \sqrt{\frac{t_{kr}}{t_k}}$$

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