

HALOGEN-FREE CABLES

Applications

■ Application of halogen-free SABIX® single conductors and wiring cables

These single conductors are installed in applications where high flex halogen-free cables are required. The various versions of these cables offer excellent characteristics such as oil resistance, low temperature flexibility, heat resistance, hot-air resistance, weather resistance and are halogen-free.

Exemplary applications:

SABIX® A 146 FRNC SABIX® A 156 FRNC SABIX® A 170 TWÖ SABIX® A 166 FRNC SABIX® A 147 FRNC SABIX® A 157 FRNC	Production of control cabinets, appliances and devices for communication technologies, household appliances, construction of generators and transformers, machine construction, railway technologies: furthermore, the FRNC type is particularly suitable for internal wiring of rail vehicles
SABIX® A 100 HT SABIX® A 101 HT	Internal wiring at high ambient temperatures in protected rooms

■ Application of halogen-free SABIX® control and connection cables

These cables are particularly suitable for control panels at tool working machines, assembly lines, transporting systems, production lines, rail technologies etc. Once installed these cables can be moved easily for installation and adjustment as well as inspection of machines. Note: Cables can not be mechanically overloaded during the movement. If a certain protection against electromagnetic interferences is requested, cables with an overall tinned copper screen should be used. The excellent characteristics of SABIX® cables, in various versions are oil resistance, low temperature flexibility, heat resistance, hot-air resistance, weather resistance, and are also halogen-free.

Exemplary applications:

SABIX® A 200 FRNC SABIX® A 205 FRNC	Automation systems, car manufacturing industry, machine construction, railway technologies
SABIX® A 238 FRNC	Transporting systems, construction of industrial plants, automation technologies
SABIX® A 260 PUR	Automation technologies, steel and iron industries, car manufacturing industry, machine construction, refrigeration and climate technologies, car wash, rising platforms for trucks
SABIX® A 130 HT	Plastics processing, packaging machine construction, smelters, steelworks and hot rolling mills, safety engineering, processing of cement, glass and ceramics, sauna construction, heat, refrigeration and climate technologies
SABIX® A 810 FRNC SABIX® A 812 C FRNC	Automation technologies, car manufacturing industry, machine construction, power supply cable between frequency converter and servo motor
SABIX® CC 625 FRNC M	Automation technologies, car manufacturing industry, machine construction, railway technologies
SABIX® CC 625 S FRNC M SABIX® CC 625 SH FRNC M	Transporting systems, construction of industrial plants, automation technologies

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Applications

■ Application of halogen-free SABIX® data cables

Data cables are used for the transmission of signals, measuring values and control signals in electronic control appliances, data processing systems, railway technologies, weighing installations, office appliances or wherever small cross sections, bending radii, shielding or high flexibility is demanded. The excellent characteristics of these cables, in various versions are oil resistance, low temperature flexibility, heat resistance, weather resistance, flexibility and being halogen-free.

Exemplary applications:

SABIX® D 305 FRNC Communication technologies

SABIX® D 315 FRNC Electronic data processing systems, weighing installations, office appliances

SABIX® D 345 FRNC TP Electronic data processing systems, weighing installations, office appliances, for increased requirements on transmission characteristics and near-end cross talk attenuation

SABIX® A 871 TWÖ
SABIX® A 872 C TWÖ
SABIX® A 876 C TWÖ TP Cables for internal wiring of rail vehicles acc. to EN 50306, data transmission, information systems

■ Application of halogen-free SABIX® Rail Data and Rail Control tested acc. to EN 45545-2

In sensitive areas, such as in public buildings and facilities and rail vehicles, the requirements for the protection of the general security are very high. In addition, halogen-free cables must be flame-retardant and self extinguishing and must not contribute to fire propagation. All of these characteristics, can be found in our brand name of SABIX®. Our SABIX® Rail Cables meet the highest safety standards according to EN 45545-2, and are certified by the Fire Technology Laboratory Currenta GmbH.

Exemplary applications:

SABIX® R 600 FRNC Cables for internal wiring of rail vehicles acc. to EN 45545-2

SABIX® R 638 FRNC

SABIX® R 605 FRNC

SABIX® R 615 FRNC

SABIX® R 645 FRNC TP

SABIX® R flex

SABIX® A 280 FRNC X

SABIX® A 285 FRNC X

SABIX® A 280 FRNC X (FR)

SABIX® cables can be fully recycled and in separate components newly supplied to the resource cycle. Cables with FRNC outer jacket avoid flame propagation in case of local flaming and are flame retardant and self-extinguishing acc. to VDE, EN and IEC. They fulfil the smoke density acc. to IEC, EN, VDE and BS.

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Applications

■ Application of halogen-free SABIX® BlueLine data, control and power cables for shipbuilding

The development of the new BlueLine cable series has been achieved with co-operation from our customers coming from the shipbuilding field. The new cables are available as halogen-free SABIX® BlueLine cables. All SABIX® BlueLine types are constructed with tinned copper strands in class 5 in order to offer advantages in corrosion resistance and flexibility. The halogen-free SABIX® BlueLine cables have been approved by DNV·GL, LR, RINA, RMRS as well as ABS. Their SABIX® characteristics fulfill the highest safety-related aspects in shipbuilding with regards to both fire performance as well as being halogen-free. Data cables, type SABIX® BlueLine Data, are available with small cross sections beginning with 26 AWG. This results in a small outer diameter which offers an outstanding advantage particularly where there is only a little space. The types SABIX® BlueLine Control as well as SABIX® BlueLine Power complement the new product series with control and power supply cables for electrical components.

Exemplary applications:

SABIX® BL 405 FRNC
SABIX® BL 415 C FRNC
SABIX® BL 443 C FRNC TT
SABIX® BL 445 C FRNC TP
SABIX® BL 446 C FRNC FTP
SABIX® BL 400 FRNC
SABIX® BL 438 C FRNC
SABIX® BL 402 FRNC
SABIX® BL 408 FRNC
SABIX® BL 409 C FRNC
SABIX® BL 410 FRNC
SABIX® BL 412 C FRNC

Installation and wiring of navigation and bridge electronics as BNWAS, power supply of electrical components



■ Application of halogen-free SABIX® Ultra - continuous flex with higher fire protection

Fire protection, halogen-free, flexibility and oil resistance are the characteristics united by our new product range SABIX® Ultra. Due to the new jacket material, the cable can be used for flexible applications and shows the highest fire protection features by the standards EN 60332-1-2, EN 60332-3 Cat C or D, IEC 60754-1, IEC 60754-2, EN 61034, NF C 32-070 C1, NF X 70-100.

Exemplary applications:

SABIX® SD 705 FRNC C1
SABIX® SD 715 C FRNC C1
SABIX® SD 745 C FRNC C1 TP

as festoon cable for polar cranes in nuclear power plants, in rail technology
as sensor cable at the vehicle chassis,
cable chain applications with moderate mechanical stress

SABIX® S 710 FRNC C1
SABIX® S 712 C FRNC C1

as festoon cable for polar cranes in nuclear power plants, in rail technology
as sensor cable at the vehicle chassis or as flexible control cable at the train doors,
cable chain applications with moderate mechanical stress

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Selection index

		Cable type	SABIX® A 146 FRNC	SABIX® A 156 FRNC	SABIX® A 166 FRNC	SABIX® A 147 FRNC	SABIX® A 157 FRNC	SABIX® A 170 TWÖ	SABIX® A 100 HT	SABIX® A 101 HT	SABIX® A 200 FRNC	SABIX® A 205 FRNC	SABIX® A 238 RNC	SABIX® A 260 PUR	SABIX® A 130 HT	
Basic construction	Single conductors		x	x	x	x	x	x	x	x						
	Numbered conductors										x		x	x	x	
	Colored conductors											x			x	
	Screened												x			
	Inner jacket															
	Twisted pairs															
Temperature range static*	+ 220°C															
	+ 105°C															
	+ 90°C															
	+ 85°C															
	- 30°C															
	- 40°C															
	- 50°C															
Voltage	Nominal voltage 600 V (UL)															
	Nominal voltage 1000 V (UL)															
	Nominal voltage U ₀ 300 V															
	Nominal voltage U ₀ /U 300/500 V		x				x		x	x	x	x	x	x	x	
	Nominal voltage U ₀ /U 450/750 V			x			x									
	Nominal voltage U ₀ /U 0.6/1 kV					x										
	Data cable peak operating voltage max. 350 V or max. 500 V															
	Testing voltage 1500 V															
	Testing voltage 2000 V		x							x	x					x
	Testing voltage 2500 V			x												
	Testing voltage 3000 V					x					x	x	x	x		
Testing voltage 4000 V								x								
Standards	Burning characteristics flame retardant and self-extinguishing acc. to IEC 60332-1-2 and EN 60332-1-2		x	x	x	x	x		x	x	x	x	x		x	
	No flame propagation acc. to IEC 60332 and EN 60332 cat. C resp. D		x	x	x	x	x				x	x	x			
	Fire protection class 1 - 4 acc. to DIN 5510 part 1															
	Smoke density acc. to IEC 61034 + EN 61034		x	x	x	x	x				x	x	x			
	UL acc. to AWM Style															
Special features	Thin-wall/small outer diameter								x							
	Very good oil resistance acc. to DINVDE													x		
	Oil resistant acc. to EN 50306								x							
	Good chemical resistance													x		
	Ozone resistant acc. to VDE 0282 part 2															
	Flexibility		x	x	x	x	x		x	x	x	x	x	x	x	
	Weather resistance		x	x	x	x	x				x	x	x	x		
	Valid for all herein mentioned cables: Zero halogen acc. to DINVDE 0472 part 815 and IEC 60754-1. Corrosiveness of conflagration gases acc. to IEC 60754-2 + EN 50267-2-2 + VDE 0482 part 267-2-2 - no development of corrosive conflagration gases															

Temperature range:



*The temperature range for flexing is mentioned on the particular catalog page

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		Cable type	SABIX® CC 625 FRNC M	SABIX® CC 625 S FRNC M	SABIX® CC 625 SH FRNC M	SABIX® A 810 FRNC	SABIX® A 812 C FRNC	SABIX® D 305 FRNC	SABIX® D 315 FRNC	SABIX® D 345 FRNC TP	SABIX® A 871 TWÓ	SABIX® A 872 C TWÓ	SABIX® A 876 C TWÓ TP
Basic construction	Single conductors												
	Numbered conductors		x	x	x	x	x				x	x	x
	Colored conductors							x	x	x			
	Screened			x	x		x		x	x		x	x
	Inner jacket				x		x						
	Twisted pairs									x			x
Temperature range static*	+ 220°C												
	+ 105°C												
	+ 90°C												
	+ 85°C												
	- 30°C												
	- 40°C												
	- 50°C												
Voltage	Nominal voltage 600 V (UL)		x	x	x								
	Nominal voltage 1000 V (UL)												
	Nominal voltage U _o 300 V												
	Nominal voltage U _o /U 300/500 V		x	x	x						x	x	x
	Nominal voltage U _o /U 450/750 V												
	Nominal voltage U _o /U 0.6/1 kV					x	x						
	Data cable peak operating voltage max. 350 V or max. 500 V							x	x	x			
	Testing voltage 1500 V							x	x	x			
	Testing voltage 2000 V										x	x	x
	Testing voltage 2500 V												
	Testing voltage 3000 V		x	x	x								
Testing voltage 4000 V					x	x							
Standards	Burning characteristics flame retardant and self-extinguishing acc. to IEC 60332-1-2 and EN 60332-1-2		x	x	x	x	x	x	x	x	x	x	x
	No flame propagation acc. to IEC 60332 and EN 60332 cat. C resp. D		x	x	x	x	x	x	x	x	x	x	x
	Fire protection class 1 - 4 acc. to DIN 5510 part 1										x	x	x
	Smoke density acc. to IEC 61034 + EN 61034		x	x	x	x	x	x	x	x	x	x	x
	UL acc. to AWM Style		x	x	x								
Special features	Thin-wall/small outer diameter										x	x	x
	Very good oil resistance acc. to DINVDE												
	Oil resistant acc. to EN 50306										x	x	x
	Good chemical resistance												
	Ozone resistant acc. to VDE 0282 part 2										x	x	x
	Flexibility		x	x	x	x	x	x	x	x	x	x	x
	Weather resistance					x	x						
Valid for all herein mentioned cables: Zero halogen acc. to DINVDE 0472 part 815 and IEC 60754-1. Corrosiveness of conflagration gases acc. to IEC 60754-2 + EN 50267-2-2 + VDE 0482 part 267-2-2 - no development of corrosive conflagration gases													

Temperature range:




*The temperature range for flexing is mentioned on the particular catalog page


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Cables for railway technology

		Cable type								
		SABIX® R 600 FRNC	SABIX® R 638 FRNC	SABIX® R 605 FRNC	SABIX® R 615 FRNC	SABIX® R 645 FRNC TP	SABIX® R flex	SABIX® A 280 FRNC X	SABIX® A 285 FRNC X	SABIX® A 280 FRNC X (FR)
Applications	Wiring cable							x		
	Data cable			x	x	x				
	Control cable	x	x				x	x	x	x
	Screened		x		x	x	x		x	
	Cross linked type				x	x		x	x	x
Standards	Tested acc. to EN 45545-2	x	x	x	x	x	x	x	x	x
	Zero halogen acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0,5% acc. to DIN EN 50267-2-1. pH-value is > 4,3 acc. to DIN EN 50267-2-2. Conductivity is < 10,0 µS/mm acc. to DIN EN 50267-2-2. Fluoric content < 0,1% acc. to DIN EN 60684-2.	x	x	x	x	x	x	x	x	x
	Burning characteristics									
	No flame propagation acc. to DIN EN 60332-3-24	x	x	x	x	x	x	x	x	x
	No flame propagation acc. to DIN EN 60332-3-25 resp. DIN EN 50305 section 9.1.1	x	x	x	x	x	x	x	x	x
	No flame propagation acc. to DIN EN 50305 section 9.1.2	x	x	x	x	x	x	x	x	x
	Flame retardant and self-extinguishing acc. to DIN EN 60332-1-2	x	x	x	x	x	x	x	x	x
	Flame retardant acc. to ISO 6722 (UN/ECE R118)			x	x	x				
	Burning tests acc. to ASTM E 162-09				x	x				
	Insulation integrity in case of fire acc. to EN 50200 PH 30 + IEC 60331-21 FE 180									x
	Toxicity acc. to DIN EN 50305	x	x	x	x	x	x	x	x	x
	Smoke density acc. to DIN EN 61034	x	x	x	x	x	x	x	x	x
	Smoke density acc. to ASTM E 662-09				x	x				
	Oil and fuel resistance acc. to DIN EN 50264-1						x			
	Absence of harmful substances acc. to RoHS directive of the European Union	x	x	x	x	x	x	x	x	x
Temperature range fixed laying*	+ 125°C									
	+ 90°C									
	+ 40°C									
	- 50°C									
Voltage	Nominal voltage Uo/U 300/500 V	x	x				x	x	x	x
	Peak operating voltage: < 24 AWG = max. 350 V ≥ 24 AWG = max. 500 V			x	x	x				

Temperature range:
from
to


































*The temperature range for flexing is mentioned on the particular catalog page

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Cables for shipbuilding

		Cable type															
														SABIX® BL 405 FRNC	SABIX® BL 415 C FRNC	SABIX® BL 443 C FRNC TT	SABIX® BL 445 C FRNC TP
Construction	Data cable	x	x	x	x	x											
	Control cable						x	x									
	Power cable								x	x	x	x	x				
	Screened		x	x	x	x		x				x					x
	Twisted pairs				x	x											
	Twisted triple			x													
Temperature range fixed laying*	+ 90°C																
	- 40°C																
Voltage range	Peak operating voltage max. 300 V			x		x											
	Peak operating voltage max. 350 V	x	x		x												
	Nominal voltage Uo/U 300/500 V						x	x									
	Nominal voltage Uo/U 600/1000 V								x	x	x	x	x	x			
Standards	Zero halogen acc. to IEC 60754-1 + EN 60332-1-2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	No flame propagation acc. to IEC 60332-3-22 + DIN EN 60332-3-22	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	Smoke density acc. to IEC 61034 + EN 61034	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	Corrosiveness of conflagration gases IEC 60754-2 + DIN EN 50267-2-2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Type approvals	DNV-GL	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	Lloyd's Register	x	x		x		x	x						x	x		
	American Bureau of Shipping	x	x		x		x	x						x	x		
	Registro Italiano Navale	x	x		x		x	x						x	x		
	Russian Maritime Register of Shipping	x	x		x		x	x						x	x		
Characteristics	Flexible conductor stranding	x	x	x	x	x	x	x						x	x		
	Extended cross section range	x	x		x												

Temperature range:














*The temperature range for flexing is mentioned on the particular catalog page

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SABIX® Ultra - continuous flex with higher fire protection

		Cable type				
		SABIX® SD 705 FRNC C1	SABIX® S 710 FRNC C1	SABIX® SD 715 C FRNC C1	SABIX® S 712 C FRNC C1	SABIX® SD 745 C FRNC C1 TP
Application	Data cables	x		x		x
	Control cables		x		x	
	Screened			x	x	x
	Twisted pairs					x
Temperature range static*	+ 90°C					
	- 40°C					
Voltage	Peak operating voltage < 0,25 mm ² = max. 350 V ≥ 0,25 mm ² = max. 500 V	x		x		x
	Nominal voltage 0.6/1 kV		x		x	
Characteristics, standards and approvals	Zero halogen acc. to DIN VDE 0472 part 815 + IEC 60754-1	x	x	x	x	x
	No flame propagation acc. to IEC 60332 + EN 60332 Cat C or D	x	x	x	x	x
	Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2 + NF C 32-070 C1	x	x	x	x	x
	Corrosiveness of conflagration gases acc. to IEC 60754-2 + EN 50267-2-2 + VDE 0482 part 267-2-2	x	x	x	x	x
	Smoke density acc. to IEC 61034 + EN 61034	x	x	x	x	x
	Toxicity acc. to NF X 70-100	x	x	x	x	x
	Oil and fuel resistance acc. to EN 50264-1	x	x	x	x	x
<p>These pages are meant to be helpful for choosing cables, they do not contain any guaranteed characteristics. Please also see the technical data on the particular catalog pages.</p>						

Temperature range:



*The temperature range for flexing is mentioned on the particular catalog page