

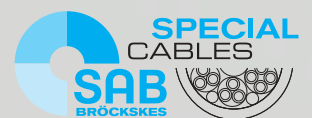
# Cables


















for Shipbuilding



DNV

[www.sab-cable.com](http://www.sab-cable.com)



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## Applications

Our halogen-free cables are appropriate for flexible use below deck as well as on deck of ships with protected laying without being in permanent contact with oils and fuels. The flexible construction and small diameter enables a comfortable laying even in narrow spaces.

Our type BL TA 180 C is appropriate for use under extreme ambient conditions. It is applied in machine rooms on ships for example as connection cable for the control of ships diesel engines. It shows a very good resistance against high temperatures as well as against oils and chemicals.

The DR 750 P Offshore is a reeling cable for the application on ships and for offshore use. The robust construction is appropriate for reeling applications with high mechanical stress. Application fields of the DR 750 P Offshore are offshore cranes, deck machines, working platforms, lifts, lifting and conveyor technique on ships and offshore facilities.

## Family business in the third generation

**75** years of experience in cable and wire manufacturing as well as in temperature measurement technology turned a one-man business into a company with more than 550 employees. We prove our strength every year with more than 1500 special products according to customers' requirements. Each product is a new challenge for our creative technical team. We at **SAB** see ourselves as a manufacturer and a service provider – in the sense of true partnership and the greatest possible customer orientation.

Today, the quality of our products is known and appreciated in more than 100 countries around the world. In all product ranges, we are certified according to DIN EN ISO 9001. Furthermore, we have implemented an environmental management system for our company according to DIN EN ISO 14001, an occupational health and safety management system according to NLF/ILO-OSH and DIN ISO 45001, and an energy management system according to DIN EN ISO 50001.

And also for the future, our slogan is: **"WE GO FORWARD!"**

FOUNDED:	1947 by Peter Bröckskes sen. an independent, medium-sized company.
CEO:	Peter Bröckskes and Sabine Bröckskes-Wetten
PLANT/LOCATION:	In Viersen (Lower Rhine) 110.000 m <sup>2</sup> company site.  Own manufacturing from copper conductor to outer sheath.  VDE approved burnchamber and laboratory within the company.
EMPLOYEES/WORKERS:	approx. 430 at the plant in Viersen, 550 worldwide
YEARLY SALES:	over 134 Mio. € worldwide
PRODUCTS:	Special Cables  Measurement Technology  Cable Harnessing
CERTIFICATES AND APPROVALS:	Quality management system acc. to DIN EN ISO 9001 for every manufacturing field  Environmental management system acc. to DIN EN ISO 14001  Occupational health and safety management acc. to NLF/ILO-OSH and DIN ISO 45001  Energy management system acc. to DIN EN ISO 50001



## Selection table



		Cable type	CATLine CAT 5e BL	'CATLine CAT 6A BL	CATLine CAT 7A BL	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	BL TA 180 C	DR 750 P Offshore	
Construction	Ethernet cable		●																	
	Data cable					●	●	●	●	●										
	Control cable										●	●							●	●
	Power cable													●	●	●	●	●		
	screened		●				●	●	●	●		●				●	●	●	●	
	twisted pairs								●	●										
Temperature range fixed laying*	+180°C																			
	+ 90°C																			
	+ 70°C																			
	- 40°C		●																	
	- 55°C																			
Voltage range	Peak operating voltage max. 90 V		●																	
	Peak operating voltage max. 300 V							●		●										
	Peak operating voltage max. 350 V					●	●		●											
	Nominal voltage Uo/U 300/500 V										●	●							●	
	Nominal voltage Uo/U 0,6/1 kV												●	●	●	●	●	●		●
	Voltage UL 300 V		●																	
	Voltage UL/cUL 600 V																		●	
Standards	Halogen-free acc. to IEC 60754-1 + VDE 0482-754-1		●			●	●	●	●	●	●	●	●	●	●	●	●	●		●
	Fire performance: no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 Cat. A		●			●	●	●	●	●	●	●	●	●	●	●	●	●		
	Fire performance: flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2		●			●	●	●	●	●	●	●	●	●	●	●	●	●		●
	Corrosiveness of conflagration gases: in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases		●			●	●	●	●	●	●	●	●	●	●	●	●	●		
	Smoke density acc. to IEC 61034 + VDE 0482-1034		●			●	●	●	●	●	●	●	●	●	●	●	●	●		
Type approvals	DNV					●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	American Bureau of Shipping		●																	
Characteristics	UL recognized		●																	
	cUL recognized																		●	
	flexible conductor stranding		●			●	●	●	●	●	●	●					●	●	●	
	extended cross section range					●	●		●											
	oil resistance																		●	●
	chemical resistance																		●	●
	MUD resistance																			●



\*The temperature range for flexible application is mentioned on the corresponding catalogue page

<sup>1</sup> lower temperatures on request SAB



# Cables for Shipbuilding



**CATLine CAT 5e BL**

**CATLine CAT 6A BL** halogen-free Ethernet cables for maritime use

**CATLine CAT 7A BL**



marking example:

SAB BRÖCKSKES · D-VIERSEN · CATLine Cat. 7A BL 4x2x26/7AWG 1747-4621 AWM Style 21080 75°C 300V CE

<b>Construction:</b>	<b>ABS</b> CATLine CAT 5e BL		<b>ABS</b> CATLine CAT 6A BL	<b>ABS</b> CATLine CAT 7A BL
<b>Dimension:</b>	2 x 2 x 24 AWG 2 x 2 x 22 AWG	4 x 2 x 26 AWG	4 x 2 x 24 AWG, 4 x 2 x 26 AWG	
<b>Conductor:</b>	bare copper strands, fine wires			
<b>Insulation:</b>	special polymer			
<b>Colour code:</b>	blue, yellow, white, orange	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown		
<b>Stranding:</b>	star quad	cores twisted to pairs, pairs together		cores twisted to pairs, pairs screened with foil, pairs together
<b>Screen:</b>	alu foil and tinned copper braiding			tinned copper braiding
<b>Sheath material:</b>	special SABIX®			
<b>Sheath colour:</b>	black			

<b>Technical data:</b>	<b>ABS</b> CATLine CAT 5e BL		<b>ABS</b> CATLine CAT 6A BL	<b>ABS</b> CATLine CAT 7A BL
<b>Item number:</b>	1547-9001 1547-9002	1547-4621	1647-4621, 1647-4421	1747-4621, 1747-4421
<b>Peak operating voltage:</b>	max. 90 V			
<b>Voltage UL:</b>	300 V			
<b>Testing voltage</b> core/core: core/screen:	2000 V 2000 V			
<b>Min. bending radius</b> fixed laying: flexible application (only 7 wires):	5 x d 10 x d			
<b>Temperature range VDE</b> fixed laying: flexible application:	UL: up to +75 °C -40/+70 °C -30/+70 °C			
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1			
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2, no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 Cat. A, UL Horizontal Flame Test FT2, UL AWM Style 21080			
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases			
<b>Smoke density:</b>	acc. to IEC 61034 + VDE 0482-1034			
<b>Characteristic impedance (100 MHz):</b>	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-2-2 / CAT 5	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-10-2 / CAT 6A	100Ω ± 10Ω, fulfils the electrical and transmission requirements with high frequency with reference to EN 50288-9-2 / CAT 7A	
<b>Flexibility:</b>	good			
<b>UL Style:</b>	21080			
<b>Application:</b>	suitable for EtherCAT and EtherNET/IP applications			
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union			

item no.	type	dimension	core-ø mm	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈kg/km
15479001	CATLine CAT 5e BL	2 x 2 x 24/7 AWG	approx. 1,25	5,7	22,7	48
15479002	CATLine CAT 5e BL	2 x 2 x 22/7 AWG	max. 1,60	6,4	29,7	61
15474621	CATLine CAT 5e BL	4 x 2 x 26/7 AWG	max. 1,05	7,3	31,9	64
16474621	CATLine CAT 6A BL	4 x 2 x 26/7 AWG	max. 1,05	7,3	31,9	64
16474421	CATLine CAT 6A BL	4 x 2 x 24/7 AWG	approx. 1,33	8,3	41,1	81
17474621	CATLine CAT 7A BL	4 x 2 x 26/7 AWG	max. 1,60	8,9	38,5	85
17474421	CATLine CAT 7A BL	4 x 2 x 24/7 AWG	approx. 1,60	10,5	65,0	116

Other dimensions and colours are possible on request.

Also possible  
as harnessed cable  
with M12 or RJ 45 plug!



# Cables for Shipbuilding

## SABIX® BL 405 FRNC

halogen-free flexible data cable



marking example:

SAB BRÖCKSKES · D-VIERSEN · SABIX® BL 405 FRNC 16 x 0,5mm² - IEC 60332-3-22 - 350V DNV CE and current meter marking

### Construction:

<b>Conductor:</b>	tinned copper strands with reference to VDE 0812 resp. IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special SABIX®
<b>Colour code:</b>	with reference to DIN 47100
<b>Stranding:</b>	in layers
<b>Sheath material:</b>	special SABIX® SHF 1 compound acc. to IEC 60092-360
<b>Sheath colour:</b>	pigeon blue (RAL 5014)

### Outstanding features:



- halogen-free
- asbestos-free
- no flame propagation
- flame retardant and self-extinguishing
- flexible
- for applications acc. to Hong Kong Convention ingredients tested acc. to the requirements of the Hong Kong Convention (2009) of the IMO
- approvals: DNV

### Technical Data:

<b>Peak operating voltage:</b>	max. 350 V
<b>Testing voltage:</b>	core/core 1500 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	5 x d
<i>flexible application:</i>	10 x d
<b>Temperature range</b>	
<i>fixed laying:</i>	-40/+90 °C
<i>flexible application:</i>	-30/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 cat. A. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + VDE 0482-1034
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Possible on request:



- bare copper strands
- alternative colour code and sheath colour

item no.	no. of cores x cross section n x mm²	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64050214	2 x 0,14	3,6	2,7	18
64050314	3 x 0,14	3,8	4,0	21
64050414	4 x 0,14	4,1	5,4	24
64050514	5 x 0,14	4,5	6,7	29
64050614	6 x 0,14	4,8	8,1	33
64050714	7 x 0,14	4,8	9,4	35
64050814	8 x 0,14	5,5	10,8	42
64051214	12 x 0,14	6,3	16,1	56
64051614	16 x 0,14	7,0	21,5	70
64050225	2 x 0,25	3,9	4,8	22
64050325	3 x 0,25	4,1	7,2	26
64050425	4 x 0,25	4,5	9,6	31
64050525	5 x 0,25	4,9	12,0	37
64050625	6 x 0,25	5,3	14,4	43
64050725	7 x 0,25	5,3	16,8	46
64050825	8 x 0,25	6,2	19,2	57
64051225	12 x 0,25	7,0	28,8	74
64051625	16 x 0,25	7,7	38,4	93
64050234	2 x 0,34	4,3	6,5	28
64050334	3 x 0,34	4,6	9,8	33
64050434	4 x 0,34	5,0	13,1	39
64050534	5 x 0,34	5,4	16,3	47
64050634	6 x 0,34	6,1	19,6	58

item no.	no. of cores x cross section n x mm²	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64050734	7 x 0,34	6,1	22,8	61
64050834	8 x 0,34	7,0	26,1	73
64051234	12 x 0,34	7,8	39,2	95
64051634	16 x 0,34	9,0	52,5	129
64050250	2 x 0,50	4,7	9,6	35
64050350	3 x 0,50	5,0	14,4	42
64050450	4 x 0,50	5,4	19,2	50
64050550	5 x 0,50	6,1	24,0	64
64050650	6 x 0,50	6,7	28,8	74
64050750	7 x 0,50	6,7	33,6	79
64050850	8 x 0,50	7,7	38,4	95
64051250	12 x 0,50	9,0	57,6	133
64051650	16 x 0,50	10,0	76,8	169
64050275	2 x 0,75	5,2	14,4	43
64050375	3 x 0,75	5,5	21,6	52
64050475	4 x 0,75	6,2	28,8	66
64050575	5 x 0,75	6,8	36,0	79
64050675	6 x 0,75	7,4	43,2	92
64050775	7 x 0,75	7,4	50,4	99
64050875	8 x 0,75	8,8	57,6	126
64051275	12 x 0,75	10,1	86,4	166
64051675	16 x 0,75	11,1	115,2	212

Other dimensions and colours are possible on request.

# Cables for Shipbuilding

## SABIX® BL 415 C FRNC

halogen-free flexible data cable with overall copper screen



marking example:

SAB BRÖCKSKES · D-VIERSEN · SABIX® BL 415 C FRNC 5 x 0,5mm² - IEC 60332-3-22 - 350V DNV CE and current meter marking

### Construction:

<b>Conductor:</b>	tinned copper strands with reference to VDE 0812 resp. IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special SABIX®
<b>Colour code:</b>	with reference to DIN 47100
<b>Stranding:</b>	in layers
<b>Wrapping:</b>	foil
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	special SABIX® SHF 1 compound acc. to IEC 60092-360
<b>Sheath colour:</b>	pigeon blue (RAL 5014)

### Outstanding features:



- halogen-free
- asbestos-free
- good EMC characteristics
- no flame propagation
- flame retardant and self-extinguishing
- flexible
- for applications acc. to Hong Kong Convention ingredients tested acc. to the requirements of the Hong Kong Convention (2009) of the IMO
- approvals: DNV

### Technical Data:

<b>Peak operating voltage:</b>	max. 350 V
<b>Testing voltage:</b>	core/core 1500 V core/screen 1200 V
<b>Min. bending radius</b>	
fixed laying:	5 x d
flexible application:	10 x d
<b>Temperature range</b>	
fixed laying:	-40/+90 °C
flexible application:	-30/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 cat. A. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + VDE 0482-1034
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Possible on request:



- bare copper strands
- alternative colour code and sheath colour

item no.	no. of cores x cross section n x mm²	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64150214	2 x 0,14	4,1	13,0	25
64150314	3 x 0,14	4,3	14,4	29
64150414	4 x 0,14	4,6	19,3	35
64150514	5 x 0,14	5,0	20,7	40
64150614	6 x 0,14	5,3	22,2	43
64150714	7 x 0,14	5,3	23,5	45
64150814	8 x 0,14	6,2	28,4	57
64151214	12 x 0,14	6,8	35,8	70
64151614	16 x 0,14	7,5	43,0	85
64150225	2 x 0,25	4,4	18,6	32
64150325	3 x 0,25	4,6	21,1	36
64150425	4 x 0,25	5,0	23,6	41
64150525	5 x 0,25	5,4	27,9	49
64150625	6 x 0,25	5,8	30,5	54
64150725	7 x 0,25	5,8	32,9	57
64150825	8 x 0,25	6,7	38,8	71
64151225	12 x 0,25	7,5	50,3	89
64151625	16 x 0,25	8,6	62,2	118
64150234	2 x 0,34	4,8	20,5	37
64150334	3 x 0,34	5,1	23,8	42
64150434	4 x 0,34	5,5	29,0	50
64150534	5 x 0,34	6,1	32,4	61
64150634	6 x 0,34	6,6	39,1	71

item no.	no. of cores x cross section n x mm²	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64150734	7 x 0,34	6,6	42,4	75
64150834	8 x 0,34	7,5	47,6	88
64151234	12 x 0,34	8,7	65,3	121
64151634	16 x 0,34	9,5	81,2	149
64150250	2 x 0,50	5,2	23,7	43
64150350	3 x 0,50	5,5	30,3	52
64150450	4 x 0,50	6,1	35,3	64
64150550	5 x 0,50	6,6	43,5	77
64150650	6 x 0,50	7,2	50,1	85
64150750	7 x 0,50	7,2	54,9	90
64150850	8 x 0,50	8,6	62,2	116
64151250	12 x 0,50	9,5	86,6	152
64151650	16 x 0,50	10,7	124,5	201
64150275	2 x 0,75	5,7	30,4	52
64150375	3 x 0,75	6,2	39,2	65
64150475	4 x 0,75	6,7	48,4	78
64150575	5 x 0,75	7,3	57,4	93
64150675	6 x 0,75	7,9	66,9	106
64150775	7 x 0,75	7,9	74,1	114
64150875	8 x 0,75	9,3	83,9	142
64151275	12 x 0,75	10,8	134,2	194
64151675	16 x 0,75	11,8	169,6	247

Other dimensions and colours are possible on request.

# Cables for Shipbuilding

## SABIX® BL 443 C FRNC TT

halogen-free flexible data cable, twisted triple with overall copper screen



marking example:

SAB BRÖCKSKES · D-VIERSEN · SABIX® BL 443 C FRNC TT 7 x 3 x 0,34 mm² - IEC 60332-3-22 - 300V DNV CE and current meter marking

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special SABIX®
<b>Colour code:</b>	≤ 0,25 mm² = DIN 47100 ≥ 0,34 mm² = white, blue, red with printed triple number
<b>Stranding:</b>	cores white, blue, red twisted to triples, triples twisted in layers
<b>Wrapping:</b>	foil
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	special SABIX® SHF 1 compound acc. to IEC 60092-360
<b>Sheath colour:</b>	pigeon blue (RAL 5014)

### Technical Data:

<b>Peak operating voltage:</b>	max. 300 V
<b>Testing voltage:</b>	core/core 1500 V core/screen 1200 V
<b>Min. bending radius</b>	
fixed laying:	5 x d
flexible application:	10 x d
<b>Temperature range</b>	
fixed laying:	-40/+90 °C
flexible application:	-30/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 cat. A. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + VDE 0482-1034
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



- halogen-free
- asbestos-free
- good EMC characteristics
- no flame propagation
- flame retardant and self-extinguishing
- flexible
- for applications  
acc. to Hong Kong Convention  
ingredients tested acc. to the requirements  
of the Hong Kong Convention (2009) of the IMO
- approvals:  
DNV

### Possible on request:



- bare copper strands
- alternative colour code  
and sheath colour

item no.	no. of triples x cross section n x 3 x mm²	outer-ø ± 10% mm	copper figure kg/km	cable weight ≈ kg/km
64430225	2 x 3 x 0,25	7,2	35,7	68
64430425	4 x 3 x 0,25	8,8	55,0	103
64430725	7 x 3 x 0,25	10,6	98,1	161
64431025	10 x 3 x 0,25	13,4	131,9	235
64430234	2 x 3 x 0,34	8,0	43,4	82
64430434	4 x 3 x 0,34	9,8	68,3	127
64430734	7 x 3 x 0,34	11,9	123,0	202
64431034	10 x 3 x 0,34	15,2	195,5	313
64430250	2 x 3 x 0,50	9,0	55,0	105
64430450	4 x 3 x 0,50	10,7	105,3	161
64430750	7 x 3 x 0,50	13,2	160,6	254
64431050	10 x 3 x 0,50	16,9	254,0	391
64430275	2 x 3 x 0,75	10,4	90,8	144
64430475	4 x 3 x 0,75	12,6	145,9	223
64430775	7 x 3 x 0,75	15,2	248,8	350
64431075	10 x 3 x 0,75	19,3	340,6	504

Other dimensions and colours are possible on request.



# Cables for Shipbuilding

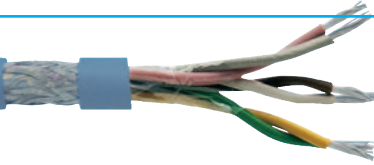
## SABIX® BL 445 C FRNC TP

halogen-free flexible paired data cable with overall copper screen



25 mm<sup>2</sup> - IEC 60332-3-22 - 350V

DNV CE



marking example:

SAB BRÖCKSKES · D-VIERSEN · SABIX® BL 445 C FRNC TP 3 x 2 x 0,25 mm<sup>2</sup> - IEC 60332-3-22 - 350V DNV CE and current meter marking

### Construction:

<b>Conductor:</b>	tinned copper strands with reference to VDE 0812 resp. IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special SABIX®
<b>Colour code:</b>	with reference to DIN 47100
<b>Stranding:</b>	pairwise, pairs in layers
<b>Wrapping:</b>	foil
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	special SABIX® SHF 1 compound acc. to IEC 60092-360
<b>Sheath colour:</b>	pigeon blue (RAL 5014)

### Technical Data:

<b>Peak operating voltage:</b>	max. 350 V
<b>Testing voltage:</b>	core/core 1500 V core/screen 1200 V
<b>Min. bending radius</b>	
fixed laying:	5 x d
flexible application:	10 x d
<b>Temperature range</b>	
fixed laying:	-40/+90 °C
flexible application:	-30/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 cat. A. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + VDE 0482-1034
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



- halogen-free
- asbestos-free
- good EMC characteristics
- good transmission rates and crosstalk attenuation
- no flame propagation
- flame retardant and self-extinguishing
- flexible
- for applications  
acc. to Hong Kong Convention  
ingredients tested acc. to the requirements  
of the Hong Kong Convention (2009) of the IMO
- approvals:  
DNV

### Possible on request:



- bare copper strands
- alternative colour code  
and sheath colour

item no.	no. of pairs x cross section n x mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64450214	2 x 2 x 0,14	5,3	19,5	37
64450314	3 x 2 x 0,14	5,8	21,4	44
64450414	4 x 2 x 0,14	6,8	30,4	58
64450514	5 x 2 x 0,14	7,4	34,9	68
64450614	6 x 2 x 0,14	7,6	39,8	76
64450814	8 x 2 x 0,14	8,7	47,6	98
64451014	10 x 2 x 0,14	9,5	55,9	114
64451214	12 x 2 x 0,14	10,6	79,9	142
64451814	18 x 2 x 0,14	12,4	102,9	200
64450225	2 x 2 x 0,25	5,8	25,7	44
64450325	3 x 2 x 0,25	6,5	32,1	57
64450425	4 x 2 x 0,25	7,4	40,6	71
64450525	5 x 2 x 0,25	8,7	50,1	96
64450625	6 x 2 x 0,25	8,7	54,9	104
64450825	8 x 2 x 0,25	9,1	67,4	121
64451025	10 x 2 x 0,25	10,6	95,7	156
64451225	12 x 2 x 0,25	11,6	111,9	180
64451825	18 x 2 x 0,25	13,8	171,9	272
64452625	26 x 2 x 0,25	16,3	223,2	368
64450234	2 x 2 x 0,34	6,4	30,7	56
64450334	3 x 2 x 0,34	7,2	40,9	71
64450434	4 x 2 x 0,34	8,7	52,3	97
64450534	5 x 2 x 0,34	9,4	61,6	115
64450634	6 x 2 x 0,34	9,6	68,2	128
64450734	7 x 2 x 0,34	10,1	93,6	151

item no.	no. of pairs x cross section n x mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64450834	8 x 2 x 0,34	10,8	100,0	164
64451034	10 x 2 x 0,34	11,8	119,7	194
64451234	12 x 2 x 0,34	13,4	138,2	238
64451834	18 x 2 x 0,34	15,8	215,3	357
64451934	19 x 2 x 0,34	15,8	223,2	367
64452734	27 x 2 x 0,34	18,2	289,0	478
64450250	2 x 2 x 0,50	7,2	40,5	70
64450350	3 x 2 x 0,50	7,9	52,5	88
64450450	4 x 2 x 0,50	9,5	67,4	120
64450550	5 x 2 x 0,50	10,5	95,6	154
64450650	6 x 2 x 0,50	10,8	105,4	171
64450850	8 x 2 x 0,50	11,9	131,3	207
64451050	10 x 2 x 0,50	13,4	155,9	259
64451250	12 x 2 x 0,50	15,0	212,6	322
64451850	18 x 2 x 0,50	17,4	283,5	451
64450275	2 x 2 x 0,75	7,9	52,5	87
64450375	3 x 2 x 0,75	9,2	69,5	115
64450475	4 x 2 x 0,75	10,7	105,3	156
64450575	5 x 2 x 0,75	11,6	126,3	186
64450675	6 x 2 x 0,75	12,4	141,0	221
64450875	8 x 2 x 0,75	13,8	200,7	284
64451075	10 x 2 x 0,75	15,2	241,6	338
64451275	12 x 2 x 0,75	17,2	283,2	411
64451875	18 x 2 x 0,75	19,4	384,0	553

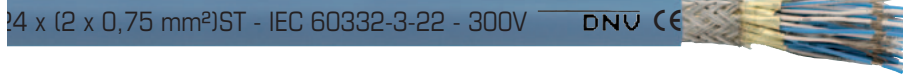
Other dimensions and colours are possible on request.

# Cables for Shipbuilding



## SABIX® BL 446 C FRNC FTP

halogen-free flexible paired data cable  
with aluminum pair screen and overall copper screen



marking example:

SAB BRÖCKSKES · D-VIERSEN · SABIX® BL 446 C FRNC FTP 24 x (2 x 0,75 mm²)ST - IEC 60332-3-22 - 300V DNV CE and current meter marking

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special SABIX®
<b>Colour code:</b>	≤ 0,25 mm² = DIN 47100 ≥ 0,34 mm² = white, blue with marking, pairnumber
<b>Stranding:</b>	cores white, blue twisted to pairs
<b>Pairscreen:</b>	alu foil
<b>Stranding:</b>	pairs together in layers
<b>Wrapping:</b>	foil
<b>Screen:</b>	tinned copper braiding
<b>Wrapping:</b>	foil
<b>Sheath material:</b>	special SABIX® SHF 1 compound acc. to IEC 60092-360
<b>Sheath colour:</b>	pigeon blue (RAL 5014)

### Outstanding features:



- halogen-free
- asbestos-free
- good EMC characteristics
- good transmission rates and crosstalk attenuation
- no flame propagation
- flame retardant and self-extinguishing
- flexible
- for applications acc. to Hong Kong Convention  
ingredients tested acc. to the requirements of the Hong Kong Convention (2009) of the IMO
- approvals:  
DNV

### Technical Data:

<b>Peak operating voltage:</b>	max. 300 V
<b>Testing voltage:</b>	core/core 1500 V core/screen 1200 V
<b>Min. bending radius</b> <i>fixed laying:</i>	5 x d
<i>flexible application:</i>	10 x d
<b>Temperature range</b> <i>fixed laying:</i>	-40/+90 °C
<i>flexible application:</i>	-30/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 cat. A. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + VDE 0482-1034
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Possible on request:



- bare copper strands
- alternative colour code and sheath colour

item no.	no. of paires x cross section n x 2 x mm²	outer-ø ± 10% mm	copper figure kg/km	cable weight ≈ kg/km
64460225	2 x (2 x 0,25)ST	6,2	27,8	53
64460825	8 x (2 x 0,25)ST	10,1	84,5	150
64461225	12 x (2 x 0,25)ST	12,7	142,4	236
64460234	2 x (2 x 0,34)ST	7,7	41,0	73
64460434	4 x (2 x 0,34)ST	9,2	61,5	122
64460834	8 x (2 x 0,34)ST	11,4	123,2	196
64461234	12 x (2 x 0,34)ST	14,9	190,8	303
64460475	4 x (2 x 0,75)ST	11,3	124,7	182
64462475	24 x (2 x 0,75)ST	23,7	591,1	854
64461980	19 x (2 x 1,50)ST	25,1	779,7	1031

Other dimensions and colours are possible on request.

# Cables for Shipbuilding

## SABIX® BL 400 FRNC

halogen-free flexible control cable 300/500 V



marking example:

SAB BRÖCKSKES · D-VIERSEN · SABIX® BL 400 FRNC 12 x 1,5 mm² - IEC 60332-3-22 - 300/500V DNV CE and current meter marking

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special SABIX®
<b>Colour code:</b>	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 conductors
<b>Stranding:</b>	in layers
<b>Sheath material:</b>	special SABIX® SHF 1 compound acc. to IEC 60092-360
<b>Sheath colour:</b>	pigeon blue (RAL 5014)

### Outstanding features:



- halogen-free
- asbestos-free
- no flame propagation
- flame retardant and self-extinguishing
- flexible
- for applications  
acc. to Hong Kong Convention  
ingredients tested acc. to the requirements  
of the Hong Kong Convention (2009) of the IMO
- approvals:  
DNV

### Technical Data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Testing voltage:</b>	core/core 2000 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	4 x d
<i>flexible application:</i>	6 x d
<b>Temperature range</b>	
<i>fixed laying:</i>	-40/+90 °C
<i>flexible application:</i>	-30/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 cat. A. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + VDE 0482-1034
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Possible on request:



- bare copper strands
- alternative colour code  
and sheath colour

item no.	no. of cores x cross section n x mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64000205	2 x 0,50	5,3	9,6	42
64000305	3 x 0,50	5,6	14,4	49
64000405	4 x 0,50	6,0	19,2	59
64000505	5 x 0,50	6,6	24,0	72
64000705	7 x 0,50	7,3	33,6	90
64001205	12 x 0,50	9,6	57,6	147
64001805	18 x 0,50	11,4	86,4	212
64000207	2 x 0,75	5,8	14,4	51
64000307	3 x 0,75	6,1	21,6	60
64000407	4 x 0,75	6,7	28,8	74
64000507	5 x 0,75	7,4	36,0	91
64000707	7 x 0,75	8,1	50,4	113
64001207	12 x 0,75	10,9	86,4	187
64001807	18 x 0,75	12,8	129,6	269
64000210	2 x 1,00	6,0	19,2	57
64000310	3 x 1,00	6,3	28,8	68
64000410	4 x 1,00	7,0	38,4	84
64000510	5 x 1,00	7,8	48,0	105

item no.	no. of cores x cross section n x mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64000710	7 x 1,00	8,4	67,2	131
64001210	12 x 1,00	11,3	115,2	216
64001810	18 x 1,00	13,5	172,8	318
64000215	2 x 1,50	6,7	28,8	73
64000315	3 x 1,50	7,0	43,2	89
64000415	4 x 1,50	7,9	57,6	112
64000515	5 x 1,50	8,6	72,0	136
64000715	7 x 1,50	9,5	100,8	174
64001215	12 x 1,50	12,7	172,8	287
64001815	18 x 1,50	15,3	259,2	426
64000225	2 x 2,50	8,1	48,0	111
64000325	3 x 2,50	8,6	72,0	137
64000425	4 x 2,50	9,5	96,0	171
64000525	5 x 2,50	10,6	120,0	212
64000725	7 x 2,50	11,7	168,0	272
64001225	12 x 2,50	15,7	288,0	452
64001825	18 x 2,50	18,9	432,0	670

Other dimensions and colours are possible on request.

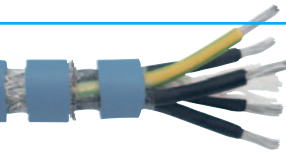
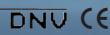
# Cables for Shipbuilding

## SABIX® BL 438 C FRNC

halogen-free flexible control cable with overall copper screen 300/500 V



x 1,5 mm<sup>2</sup> - IEC 60332-3-22 - 300/500V



marking example:

SAB BRÖCKSKES · D-VIERSEN · SABIX® BL 438 C FRNC 5 x 1,5 mm<sup>2</sup> - IEC 60332-3-22 - 300/500V DNV CE and current meter marking

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special SABIX®
<b>Colour code</b>	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 conductors
<b>Stranding:</b>	in layers
<b>Wrapping:</b>	foil
<b>Screen:</b>	tinned copper braiding
<b>Sheath:</b>	special SABIX® SHF 1 compound acc. to IEC 60092-360
<b>Sheath colour:</b>	pigeon blue (RAL 5014)

### Technical Data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Testing voltage:</b>	core/core 2000 V core/screen 2000 V
<b>Min. bending radius</b>	
fixed laying:	5 x d
flexible application:	10 x d
<b>Temperature range</b>	
fixed laying:	-40/+90 °C
flexible application:	-30/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 cat. A. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + VDE 0482-1034
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



- halogen-free
- asbestos-free
- good EMC characteristics
- no flame propagation
- flame retardant and self-extinguishing
- flexible
- for applications  
acc. to Hong Kong Convention  
ingredients tested acc. to the requirements  
of the Hong Kong Convention (2009) of the IMO
- approvals:  
DNV

### Possible on request:



- bare copper strands
- alternative colour code  
and sheath colour

item no.	no. of cores x cross section n x mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64380205	2 x 0,50	5,8	25,5	50
64380305	3 x 0,50	6,1	30,4	57
64380405	4 x 0,50	6,6	36,9	69
64380505	5 x 0,50	7,1	43,6	82
64380705	7 x 0,50	7,9	55,0	104
64381205	12 x 0,50	10,2	86,7	165
64381805	18 x 0,50	12,3	140,7	251
64380207	2 x 0,75	6,4	30,5	58
64380307	3 x 0,75	6,7	39,3	66
64380407	4 x 0,75	7,3	48,5	84
64380507	5 x 0,75	8,0	57,5	102
64380707	7 x 0,75	8,7	74,2	126
64381207	12 x 0,75	11,7	140,4	221
64381807	18 x 0,75	13,7	189,4	311
64380210	2 x 1,00	6,6	36,9	65
64380310	3 x 1,00	6,9	48,3	77
64380410	4 x 1,00	7,5	59,7	93
64380510	5 x 1,00	8,4	71,7	118

item no.	no. of cores x cross section n x mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64380710	7 x 1,00	9,0	93,4	145
64381210	12 x 1,00	12,1	169,4	250
64381810	18 x 1,00	14,6	258,5	378
64380215	2 x 1,50	7,3	48,5	80
64380315	3 x 1,50	7,6	64,5	97
64380415	4 x 1,50	8,4	81,3	120
64380515	5 x 1,50	9,3	98,2	150
64380715	7 x 1,50	10,1	129,9	188
64381215	12 x 1,50	13,5	232,5	323
64381815	18 x 1,50	16,3	357,1	488
64380225	2 x 2,50	8,7	71,8	115
64380325	3 x 2,50	9,3	98,2	145
64380425	4 x 2,50	10,1	125,1	180
64380525	5 x 2,50	11,5	167,9	237
64380725	7 x 2,50	12,5	222,4	299
64381225	12 x 2,50	16,8	386,4	513
64381825	18 x 2,50	20,1	556,3	753

Other dimensions and colours are possible on request.

# Cables for Shipbuilding

## SABIX® BL 402 FRNC

halogen-free flexible wiring cable 0.6/1 kV



X® BL 402 FRNC 1,5 mm<sup>2</sup> - IEC 60332-3-22 - 0,6/1kV — DNV CE



marking example:

SAB BRÖCKSKES · D-VIERSEN · SABIX® BL 402 FRNC 1,5 mm<sup>2</sup> - IEC 60332-3-22 - 0,6/1kV — DNV CE and current meter marking

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special SABIX®
<b>Colour code:</b>	black (RAL 9005)

### Technical Data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 0,6/1 kV
<b>Testing voltage:</b>	core/core 4000 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	4 x d
<i>flexible application:</i>	6 x d
<b>Temperature range</b>	
<i>fixed laying:</i>	-40/+90 °C
<i>flexible application:</i>	-30/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 cat. A. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + VDE 0482-1034
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



- halogen-free
- asbestos-free
- no flame propagation
- flame retardant and self-extinguishing
- flexible
- for applications acc. to Hong Kong Convention ingredients tested acc. to the requirements of the Hong Kong Convention (2009) of the IMO
- approvals: DNV

### Possible on request:



- bare copper strands
- alternative colour code

item no.	nominal cross section mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64020180	1,00	3,0	9,6	17
64020182	1,50	3,3	14,4	23
64020184	2,50	3,7	24,0	32
64020186	4,00	4,7	38,4	52
64020187	6,00	5,2	57,6	71
64020188	10,00	6,4	96,0	121
64020189	16,00	7,8	153,6	180
64020190	25,00	9,6	240,0	275
64020191	35,00	11,0	336,0	380
64020192	50,00	12,6	480,0	536
64020193	70,00	14,9	672,0	723
64020194	95,00	17,4	912,0	985
64020195	120,00	19,3	1152,0	1219
64020196	150,00	21,2	1440,0	1500
64020197	185,00	23,3	1776,0	1849
64020198	240,00	27,0	2304,0	2447

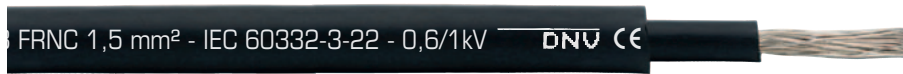
Other dimensions and colours are possible on request.



# Cables for Shipbuilding

## SABIX® BL 408 FRNC

halogen-free flexible power cable 0.6/1 kV



marking example:

SAB BRÖCKSKES · D-VIERSEN · SABIX® BL 408 FRNC 1,5 mm² - IEC 60332-3-22 - 0,6/1kV DNV CE and current meter marking

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special SABIX®
<b>Colour code:</b>	black (RAL 9005)
<b>Sheath material:</b>	special SABIX® SHF 1 compound acc. to IEC 60092-360
<b>Sheath colour:</b>	black (RAL 9005)

### Outstanding features:



- halogen-free
- asbestos-free
- no flame propagation
- flame retardant and self-extinguishing
- flexible
- for applications acc. to Hong Kong Convention  
ingredients tested acc. to the requirements of the Hong Kong Convention (2009) of the IMO
- approvals:  
DNV

### Technical Data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 0,6/1 kV
<b>Testing voltage:</b>	core/core 4000 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	4 x d
<i>flexible application:</i>	6 x d
<b>Temperature range</b>	
<i>fixed laying:</i>	-40/+90 °C
<i>flexible application:</i>	-30/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 cat. A. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + VDE 0482-1034
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Possible on request:



- bare copper strands
- alternative colour code and sheath colour

item no.	nominal cross section mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64080180	1,00	5,4	9,6	43
64080182	1,50	5,7	14,4	50
64080184	2,50	6,1	24,0	62
64080186	4,00	7,1	38,4	88
64080187	6,00	7,6	57,6	110
64080188	10,0	8,8	96,0	168
64080189	16,0	10,2	153,6	236
64080190	25,0	12,0	240,0	345
64080191	35,0	13,7	336,0	469
64080192	50,0	15,4	480,0	641
64080193	70,0	17,9	672,0	850
64080194	95,0	20,6	912,0	1137
64080195	120,0	22,7	1152,0	1394
64080196	150,0	24,7	1440,0	1708
64080197	185,0	27,0	1776,0	2067
64080198	240,0	31,0	2304,0	2746

Other dimensions and colours are possible on request.

# Cables for Shipbuilding

## SABIX® BL 409 C FRNC

halogen-free flexible power cable with overall copper screen 0.6/1 kV



marking example:

SAB BRÖCKSKES · D-VIERSEN · SABIX® BL 409 C FRNC 4,0 mm² - IEC 60332-3-22 - 0,6/1kV DNV CE and current meter marking

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special SABIX®
<b>Colour code:</b>	black (RAL 9005)
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	special SABIX® SHF 1 compound acc. to IEC 60092-360
<b>Sheath colour:</b>	black (RAL 9005)

### Outstanding features:



- halogen-free
- asbestos-free
- good EMC characteristics
- no flame propagation
- flame retardant and self-extinguishing
- flexible
- for applications  
acc. to Hong Kong Convention  
ingredients tested acc. to the requirements  
of the Hong Kong Convention (2009) of the IMO
- approvals:  
DNV

### Technical Data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 0,6/1 kV
<b>Testing voltage:</b>	core/core 4000 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	5 x d
<i>flexible application:</i>	10 x d
<b>Temperature range</b>	
<i>fixed laying:</i>	-40/+90 °C
<i>flexible application:</i>	-30/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 cat. A. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + VDE 0482-1034
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Possible on request:



- bare copper strands
- alternative colour code  
and sheath colour

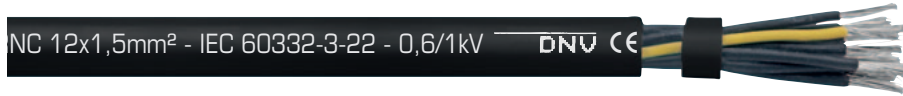
item no.	nominal cross section mm²	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64090180	1,00	5,8	23,5	55
64090182	1,50	6,1	28,4	63
64090184	2,50	6,5	39,9	76
64090186	4,00	7,5	57,9	104
64090187	6,00	8,0	77,4	126
64090188	10,00	9,2	122,1	183
64090189	16,00	10,6	182,8	252
64090190	25,00	12,6	294,6	385
64090191	35,00	14,6	421,8	536
64090192	50,00	16,3	578,1	716
64090193	70,00	18,8	784,0	935
64090194	95,00	21,5	1050,8	1241
64090195	120,00	23,5	1318,2	1512
64090196	150,00	25,6	1610,8	1835
64090197	185,00	27,9	1352,1	2200
64090198	240,00	31,9	2508,6	2899

Other dimensions and colours are possible on request.

# Cables for Shipbuilding

## SABIX® BL 410 FRNC

halogen-free flexible power cable 0.6/1 kV



marking example:

SAB BRÖCKSKES · D-VIERSEN · SABIX® BL 410 FRNC 12x1,5mm² - IEC 60332-3-22 - 0,6/1kV DNV CE and current meter marking

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special SABIX®
<b>Colour code</b>	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 conductors
<b>Stranding:</b>	in layers
<b>Sheath:</b>	special SABIX® SHF 1 compound acc. to IEC 60092-360
<b>Sheath colour:</b>	black (RAL 9005)

### Outstanding features:



- halogen-free
- asbestos-free
- no flame propagation
- flame retardant and self-extinguishing
- flexible
- for applications  
acc. to Hong Kong Convention  
ingredients tested acc. to the requirements  
of the Hong Kong Convention (2009) of the IMO
- approvals:  
DNV

### Technical Data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 0,6/1 kV
<b>Testing voltage:</b>	core/core 4000 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	4 x d
<i>flexible application:</i>	6 x d
<b>Temperature range</b>	
<i>fixed laying:</i>	-40/+90 °C
<i>flexible application:</i>	-30/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 cat. A. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + VDE 0482-1034
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Possible on request:



- bare copper strands
- alternative colour code  
and sheath colour

item no.	no. of cores x cross section n x mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64100215	2 x 1,50	8,9	28,8	120
64100315	3 x 1,50	9,4	43,2	137
64100415	4 x 1,50	10,2	57,6	164
64100515	5 x 1,50	11,4	72,0	205
64100715	7 x 1,50	12,4	100,8	250
64101015	10 x 1,50	15,9	144,0	349
64101215	12 x 1,50	16,6	172,8	407
64101415	14 x 1,50	17,4	201,6	459
64101815	18 x 1,50	19,5	259,2	589
64100225	2 x 2,50	9,7	48,0	151
64100325	3 x 2,50	10,3	72,0	176
64100425	4 x 2,50	11,4	96,0	219
64100525	5 x 2,50	12,5	120,0	266
64100725	7 x 2,50	13,8	168,0	337
64101025	10 x 2,50	17,7	240,0	471
64101225	12 x 2,50	18,2	288,0	540
64101425	14 x 2,50	19,3	336,0	622
64101825	18 x 2,50	21,7	432,0	797
64100240	2 x 4,00	11,9	76,8	230
64100340	3 x 4,00	12,6	115,2	269
64100440	4 x 4,00	14,0	153,6	334

item no.	no. of cores x cross section n x mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64100540	5 x 4,00	15,4	192,0	410
64100740	7 x 4,00	17,0	268,8	520
64100260	2 x 6,00	12,9	115,2	287
64100360	3 x 6,00	13,9	172,8	349
64100460	4 x 6,00	15,2	230,4	427
64100560	5 x 6,00	17,0	288,0	535
64100760	7 x 6,00	18,5	403,2	674
64100361	3 x 10,0	16,8	288,0	535
64100461	4 x 10,0	18,4	384,0	659
64100561	5 x 10,0	20,5	480,0	825
64100362	3 x 16,0	20,0	460,8	778
64100462	4 x 16,0	22,1	614,4	974
64100562	5 x 16,0	24,7	768,0	1218
64100363	3 x 25,0	24,1	720,0	1158
64100463	4 x 25,0	26,7	960,0	1453
64100563	5 x 25,0	29,9	1200,0	1828
64100364	3 x 35,0	27,5	1008,0	1567
64100464	4 x 35,0	30,4	1344,0	1968
64100365	3 x 50,0	31,1	1440,0	2171
64100465	4 x 50,0	34,3	1920,0	2738

Other dimensions and colours are possible on request.

# Cables for Shipbuilding

## SABIX® BL 412 C FRNC

halogen-free flexible power cable with overall copper screen 0.6/1 kV



marking example:

SAB BRÖCKSKES · D-VIERSEN · SABIX® BL 412 C FRNC 12 x 1,5mm² - IEC 60332-3-22 - 0,6/1kV DNV CE and current meter marking

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special SABIX®
<b>Colour code</b>	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334, green-yellow earth wire from 3 conductors
<b>Stranding:</b>	in layers
<b>Screen:</b>	tinned copper braiding
<b>Sheath:</b>	special SABIX® SHF 1 compound acc. to IEC 60092-360
<b>Sheath colour:</b>	black (RAL 9005)

### Outstanding features:



- halogen-free
- asbestos-free
- good EMC characteristics
- no flame propagation
- flame retardant and self-extinguishing
- flexible
- for applications  
acc. to Hong Kong Convention  
ingredients tested acc. to the requirements  
of the Hong Kong Convention (2009) of the IMO
- approvals:  
DNV

### Technical Data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 0,6/1 kV
<b>Testing voltage:</b>	core/core 4000 V core/screen 4000 V
<b>Min. bending radius</b>	
fixed laying:	4 x d
flexible application:	6 x d
<b>Temperature range</b>	
fixed laying:	-40/+90 °C
flexible application:	-30/+90 °C
<b>Halogen-free:</b>	acc. to IEC 60754-1 + VDE 0482-754-1
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 cat. A. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Corrosiveness of conflagration gases:</b>	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
<b>Smoke density:</b>	acc. to IEC 61034 + VDE 0482-1034
<b>Flexibility:</b>	very good
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Possible on request:



- bare copper strands
- alternative colour code  
and sheath colour

item no.	no. of cores x cross section n x mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64120215	2 x 1,50	9,4	55,0	123
64120315	3 x 1,50	9,9	72,2	140
64120415	4 x 1,50	10,9	105,2	181
64120515	5 x 1,50	12,1	126,2	226
64120715	7 x 1,50	13,1	160,4	275
64121015	10 x 1,50	17,0	253,8	417
64121215	12 x 1,50	17,5	283,2	465
64121415	14 x 1,50	18,3	313,1	516
64121815	18 x 1,50	20,4	384,8	654
64120225	2 x 2,50	10,2	77,1	155
64120325	3 x 2,50	11,0	119,6	190
64120425	4 x 2,50	12,1	150,2	236
64120525	5 x 2,50	13,2	179,6	286
64120725	7 x 2,50	14,7	253,9	376
64121025	10 x 2,50	18,6	351,9	525
64121225	12 x 2,50	19,1	411,8	600
64121425	14 x 2,50	20,2	461,2	683
64121825	18 x 2,50	22,6	572,7	865
64120240	2 x 4,00	12,6	131,3	238
64120340	3 x 4,00	13,3	174,9	277
64120440	4 x 4,00	14,9	239,6	361

item no.	no. of cores x cross section n x mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km
64120540	5 x 4,00	16,3	290,3	443
64120740	7 x 4,00	17,9	379,7	566
64120260	2 x 6,00	13,8	175,0	303
64120360	3 x 6,00	14,8	258,8	368
64120460	4 x 6,00	16,1	328,4	466
64120560	5 x 6,00	17,9	398,9	567
64120760	7 x 6,00	19,6	527,5	723
64120361	3 x 10,0	17,7	398,7	542
64120461	4 x 10,0	19,5	508,1	732
64120561	5 x 10,0	21,4	618,8	853
64120362	3 x 16,0	20,9	598,7	768
64120462	4 x 16,0	23,0	755,9	992
64120562	5 x 16,0	25,6	938,8	1231
64120363	3 x 25,0	25,2	889,8	1126
64120463	4 x 25,0	27,8	1135,9	1465
64120563	5 x 25,0	30,8	1400,7	1805
64120364	3 x 35,0	28,4	1185,4	1508
64120464	4 x 35,0	31,3	1546,6	1978
64120365	3 x 50,0	32,0	1645,3	2039
64120465	4 x 50,0	35,2	2149,1	2678

Other dimensions and colours are possible on request.

# Cables for Shipbuilding

## BL TA 180 C

flexible FEP connection cable with overall copper screen

+180 °C

SAB MARITIME



0V AWM I/II A/B 150°C 600V FT1 FT2 CE

DNV



marking example:

SAB BRÖCKSKES · D-VIERSEN · BL TA 180 C 7x1,5mm<sup>2</sup> - IEC 60332-3-22 -

300/500V AWM Style 21618 150°C 600V AWM I/II A/B 150°C 600V FT1 FT2 CE

**Application:** e.g. as connection cable for the control of marine diesel engines.

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	FEP
<b>Colour code:</b>	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334 without green-yellow earth wire
<b>Stranding:</b>	in layers
<b>Inner sheath:</b>	Besilen®
<b>Screen:</b>	tinned copper braiding
<b>Sheath material:</b>	FEP
<b>Sheath colour:</b>	black (RAL 9005)

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 300/500 V
<b>Voltage UL/cUL:</b>	600 V
<b>Testing voltage:</b>	core/core 2000 V (AC) core/screen 2000 V
<b>Min. bending radius</b>	
fixed laying	5 x d
flexible application:	10 x d
<b>Radiation resistance:</b>	1 x 10 <sup>7</sup> cJ/kg
<b>Temperature range</b>	<b>DIN VDE</b> UL/cUL: up to +150 °C
fixed laying:	-55/+180 °C
flexible application:	-55/+180 °C
<b>Fire performance:</b>	no flame propagation acc. to IEC 60332-3-22 + VDE 0482-332-3-22 cat. A. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2, UL FT1, FT2
<b>Chem. resistance:</b>	very good against acids, halogens, bases, chlorinated solvents as well as organic and inorganic compounds
<b>Oil and fuel resistance:</b>	very good
<b>Flexibility:</b>	good
<b>Halogen-free:</b>	not fulfilled
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



- no flame propagation
- flame retardant and self-extinguishing
- good EMC characteristics
- oil and fuel resistant
- good chemical resistance
- high cold and heat resistance
- asbestos-free
- approvals:  
DNV  
UL/cUL recognized

item no.	no. of cores x cross section n x mm <sup>2</sup>	outer-ø approx. mm	copper figure kg/km	cable weight ≈ kg/km
37530207	2 x 0,75	5,7	32,9	63
37530307	3 x 0,75	6,0	40,2	68
37530407	4 x 0,75	6,2	50,3	81
37530507	5 x 0,75	7,1	59,6	99
37530607	6 x 0,75	7,7	67,0	116
37530707	7 x 0,75	7,7	74,2	121
37530807	8 x 0,75	8,9	86,7	152
37531207	12 x 0,75	10,2	134,3	203
37531607	16 x 0,75	11,4	169,8	261
37532007	20 x 0,75	12,8	229,5	334
37530210	2 x 1,00	5,9	37,8	64
37530215	2 x 1,50	6,6	50,4	81
37530315	3 x 1,50	6,9	64,6	97
37530515	5 x 1,50	8,2	98,2	145
37530615	6 x 1,50	9,0	115,5	171
37530715	7 x 1,50	9,0	129,9	182
37531215	12 x 1,50	12,0	232,5	309
37530220	2 x 2,00	7,5	62,2	107
37530320	3 x 2,00	8,1	83,8	130

Other dimensions and colours are possible on request.



### Possible on request:

- without overall copper screen
- alternative colour code and sheath colour



# Cables for Shipbuilding



## DR 750 P Offshore

PUR reeling cable for offshore applications



marking example:

SAB BRÖCKSKES · D-VIERSEN · DR 750 P Offshore 4 G 2,5 mm<sup>2</sup> 0,6/1 kV CE

**Application:** The DR 750 P Offshore is used as reeling cable in offshore areas, for spring and motor cable reels in lifting and handling equipment on offshore platforms or ships.

### Construction:

<b>Conductor:</b>	tinned copper strands acc. to IEC 60228, VDE 0295, class 5
<b>Insulation:</b>	special polymer
<b>Colour code:</b>	coloured acc. to HD 308 (VDE 0293-308), from 6 cores black cores with consecutive numbers acc. to EN 50334 + VDE 0293-334, from 3 cores a green-yellow earth wire
<b>Stranding:</b>	specially adjusted layering
<b>Inner sheath:</b>	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
<b>Supporting screen:</b>	high-tech yarn
<b>Sheath material:</b>	PUR, TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
<b>Sheath colour:</b>	black (RAL 9005) mat

### Technical data:

<b>Nominal voltage:</b>	U <sub>0</sub> /U 0,6/1 kV
<b>Testing voltage:</b>	core/core 4000 V
<b>Min. bending radius</b>	
<i>fixed laying:</i>	5 x d
<i>flexible:</i>	10 x d
<i>for repeated winding action (flexible):</i>	10 x d
<i>guided on pulleys (flexible):</i>	15 x d
<b>Temperature range</b>	
<i>flexible:</i>	-40/+90 °C lower temperatures on request SAB
<b>Halogen and fluorine content:</b>	acc. to IEC 60754-1 + EN 60754-1
<b>Fire performance:</b>	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
<b>Oil resistance:</b>	very good - TPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
<b>MUD resistance:</b>	very good - acc. to IEC 60092-350, IEC 61892-4, NEK TS 606
<b>Chemical resistance:</b>	very good against acids, alkaline solutions, solvents and hydraulic liquids, etc.
<b>Weather resistance:</b>	very good
<b>Sunlight resistance:</b>	very good - enhanced due to black sheath colour
<b>Absence of harmful substances:</b>	acc. to RoHS directive of the European Union

### Outstanding features:



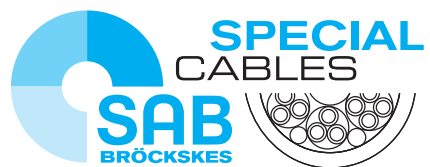
- suitable for offshore applications
- extrem highly winding and unwinding strength
- small outer diameter
- small cable weight
- flame retardant and self-extinguishing
- asbestos-free

item no.	no. of cores x cross section n x mm <sup>2</sup>	outer-ø ± 5% mm	copper figure kg/km	cable weight ≈ kg/km	min breaking load of suspension unit N
07500210	2 x 1,00	10,3	19,2	118	500
07500410	4 G 1,00	10,9	38,4	140	1100
07501210	12 G 1,00	18,6	115,2	410	2000
07500315	3 G 1,50	10,9	43,2	144	1000
07500415	4 G 1,50	11,6	57,6	167	1340
07500715	7 G 1,50	14,7	100,8	273	2150
07501215	12 G 1,50	20,0	172,8	510	2600
07501815	18 G 1,50	20,0	259,2	523	3375
07500325	3 G 2,50	11,7	72,0	181	1200
07500425	4 G 2,50	13,0	96,0	220	1345
07500440	4 G 4,00	14,4	153,6	296	2000
07500460	4 G 6,00	15,8	230,4	390	3000
07500461	4 G 10,0	19,0	384,0	611	5000
07500462	4 G 16,0	22,9	614,4	907	8000
07500463	4 G 25,0	27,0	960,0	1362	12500
07500464	4 G 35,0	30,8	1344,0	1804	17500
07500465	4 G 50,0	34,6	1920,0	2548	25000
07500466	4 G 70,0	41,2	2688,0	3449	35000

Other dimensions and colours are possible on request.

Please mention the required winding length when placing the order.

● Please pay attention to the installation instructions



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