

# SABIX® ULTRA

CONTINUOUSLY FLEXIBLE  
WITH HIGHEST FIRE PROTECTION



Continuously flexible with highest fire protection



# SABIX® Ultra

Fire protection has never been so flexible

- fire protection
- halogen-free
- flexibility
- oil resistance

These are the characteristics united by our new product range SABIX® Ultra. Due to the new sheath material the cable can be used for flexible applications and shows the highest fire protection features such as IEC 60332-3 Cat. C resp. D

respectively the French standard NF C 32-070 C1.

The cables are used for example as festoon cable for polar cranes in nuclear power plants. In rail technology these cables are used as sensor cable or as flexible control cable at the train doors. Due to the very good oil and fuel resistance the use in industrial environments is also recommended. The new SABIX® Ultra material can even be used for cable chain applications with moderate mechanical stress.

## Standards:

- IEC 60332-1-2
- IEC 60332-3 Cat. C resp. D
- IEC 60754-1 (halogen-free)
- IEC 60754-2 (corrosivity of gases)
- IEC 61034 (smoke density)
- NF C 32-070 C1 (fire performance acc. to French standard)
- NF X 70-100 (toxicity acc. to French standard)



Siège social et site de Liège :  
Rue du Chéra, 200  
B-4000 Liège  
Tél : +32(0)4.229.83.11  
Fax : +32(0)4.252.46.65  
site web : <http://www.isssep.be>

Site de Colfontaine :  
Zoning A. Schweitzer,  
rue de la Platinerie  
B-7340 Colfontaine  
Tél : +32(0)65.61.08.11  
Fax : +32(0)65.61.08.08

Liège, 12 September 2012.

## TEST REPORT Nr 3189/2012

|                             |                                                                                                                                                                                                                                                        |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NF C 32-070<br>Janvier 2001 | NORME FRANÇAISE ENREGISTRÉE<br>Essais de classification des conducteurs et câbles<br>du point de vue de leur comportement au feu<br>Essai de vérification effectué sur des conducteurs<br>et câbles de la catégorie C1<br><b>Cables of category C1</b> |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

1. Tests applied for by: Mrs N. Lütke-meier for SAB Bröckskes GmbH & Co. KG, Grefrath Str. 204-212b, D-41749 Viersen, Deutschland.
2. Type of cable (\*: information given by the sponsor):  
ISSEP nr: LCF/EE/12/66/1.  
Cable marking: SAB BROCKSKES D-VIERSEN SABIX R 691 FRNC cat 6 4x2x26 AWG CE.  
\*Reference: SABIX R 691 FRNC Cat 6 4x2x26 AWG – Art. Nr L6691-2604 – BA nr 199714.  
Diameter: ~ 9.4 mm.  
Colour: green.  
Date of samples reception: 16 July 2012.  
Compliance with the C2 category requirements acc. to NF C32-070: yes, checked by ourselves.
- 3 Sampling: not carried out by the laboratory.
- 4 Procedure: refer to § 2.2.7 of NF C 32-070 (2001) standard  
Number of 1.6 m long cables lengths for each test: 12.
- 5 Date of the test: 20 July 2012.

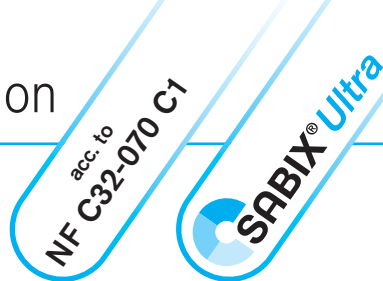


[www.sab-cable.com](http://www.sab-cable.com)

# Continuously flexible with highest fire protection

## SABIX® SD 705 FRNC C1

continuously flexible data cable with improved fire performance



ERSEN · SABIX® SD 705 FRNC C1 2 x 0,25 mm² CE



Marking for SABIX® SD 705 FRNC C1 67050225:

SAB BRÜCKSKES · D-VIERSEN · SABIX® SD 705 FRNC C1 2 x 0,25 mm² CE

**Application:** For flexible applications in areas with highest fire protection requirements e.g. power plant technology, railway applications.

### Construction:

|                         |                                       |
|-------------------------|---------------------------------------|
| <b>Conductor:</b>       | bare copper strands, extra fine wires |
| <b>Insulation:</b>      | SABIX®                                |
| <b>Colour code:</b>     | with reference to DIN 47100           |
| <b>Stranding:</b>       | in layers                             |
| <b>Wrapping:</b>        | non-woven tape                        |
| <b>Sheath material:</b> | SABIX®                                |
| <b>Sheath colour:</b>   | black (RAL 9005)                      |

### Outstanding features:



- halogen-free
- continuously flexible
- no flame propagation
- flame retardant and self-extinguishing
- oil and fuel resistant
- good acid and alkalines resistance
- NF C 32-070 C1

### Technical Data:

|                                              |                                                                                                                                                                                                                                             |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Peak operating voltage:</b>               | < 0,25 mm² = max. 350 V<br>≥ 0,25 mm² = max. 500 V                                                                                                                                                                                          |
| <b>Testing voltage:</b>                      | core/core 1500 V                                                                                                                                                                                                                            |
| <b>Min. bending radius</b>                   |                                                                                                                                                                                                                                             |
| <i>fixed laying:</i>                         | 4 x d                                                                                                                                                                                                                                       |
| <i>flexible application:</i>                 | 6 x d                                                                                                                                                                                                                                       |
| <i>continuously flexible:</i>                | 15 x d                                                                                                                                                                                                                                      |
| <b>Radiation resistance:</b>                 | 1 x 10 <sup>7</sup> cJ/kg (100 kGy)                                                                                                                                                                                                         |
| <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<br>acc. to IEC 60332-3-24 + VDE 0482-332-3-24<br>resp. IEC 60332-3-25 + VDE 0482-332-3-25<br>cat. C resp. D.<br>Flame retardant and self-extinguishing<br>acc. to IEC 60332-1-2 + VDE 0482-332-1-2 +<br>NF C 32-070 C1 |
| <b>Corrosiveness of conflagration gases:</b> | in compliance with<br>IEC 60754-2 + VDE 0482-754-2 -<br>no development of corrosive conflagration gases                                                                                                                                     |
| <b>Smoke density:</b>                        | acc. to IEC 61034 + VDE 0482-1034                                                                                                                                                                                                           |
| <b>Toxicity:</b>                             | acc. to NF X 70-100                                                                                                                                                                                                                         |
| <b>Oil and fuel resistance:</b>              | acc. to EN 50264-1 + VDE 0260-264-1                                                                                                                                                                                                         |
| <b>UV, ozone and weather resistance:</b>     | good                                                                                                                                                                                                                                        |
| <b>Mycological resistance:</b>               | good                                                                                                                                                                                                                                        |
| <b>Absence of harmful substances:</b>        | acc. to RoHS directive of the European Union                                                                                                                                                                                                |

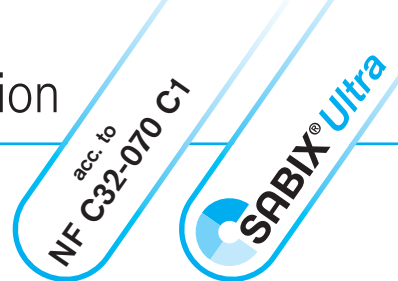
| item no. | no. of cores<br>x cross section<br>n x mm² | largest<br>single wire<br>ø mm | outer-ø<br>± 5%<br>mm | copper<br>figure<br>kg/km | cable<br>weight<br>≈ kg/km |
|----------|--------------------------------------------|--------------------------------|-----------------------|---------------------------|----------------------------|
| 67050214 | 2 x 0,14                                   | 0,11                           | 3,2                   | 2,7                       | 14                         |
| 67050314 | 3 x 0,14                                   | 0,11                           | 3,4                   | 4,0                       | 17                         |
| 67050514 | 5 x 0,14                                   | 0,11                           | 3,9                   | 6,7                       | 24                         |
| 67050714 | 7 x 0,14                                   | 0,11                           | 4,5                   | 9,4                       | 32                         |
| 67050225 | 2 x 0,25                                   | 0,11                           | 3,5                   | 4,8                       | 18                         |
| 67050325 | 3 x 0,25                                   | 0,11                           | 3,7                   | 7,2                       | 21                         |
| 67050425 | 4 x 0,25                                   | 0,11                           | 4,0                   | 9,6                       | 26                         |
| 67051025 | 10 x 0,25                                  | 0,11                           | 6,1                   | 24,0                      | 60                         |
| 67051225 | 12 x 0,25                                  | 0,11                           | 6,3                   | 28,8                      | 64                         |
| 67051425 | 14 x 0,25                                  | 0,11                           | 6,6                   | 33,6                      | 72                         |
| 67051825 | 18 x 0,25                                  | 0,11                           | 7,3                   | 43,2                      | 90                         |
| 67052525 | 25 x 0,25                                  | 0,11                           | 8,7                   | 60,0                      | 117                        |
| 67050234 | 2 x 0,34                                   | 0,11                           | 4,1                   | 6,5                       | 24                         |
| 67050534 | 5 x 0,34                                   | 0,11                           | 5,3                   | 16,3                      | 43                         |
| 67050734 | 7 x 0,34                                   | 0,11                           | 6,3                   | 22,8                      | 62                         |
| 67051034 | 10 x 0,34                                  | 0,11                           | 7,3                   | 32,6                      | 76                         |
| 67052534 | 25 x 0,34                                  | 0,11                           | 11,1                  | 81,6                      | 180                        |

Other dimensions and colours are possible on request.

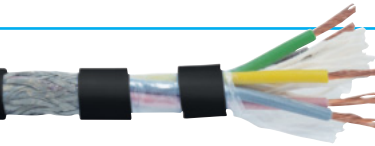
# Continuously flexible with highest fire protection

## SABIX® SD 715 C FRNC C1

continuously flexible data cable with improved fire performance and overall copper screen



SABIX® SD 715 C FRNC C1 7 x 0,25 mm² CE



Marking for SABIX® SD 715 C FRNC C1 6715725:

SAB BRÜCKSKES · D-VIERSEN · SABIX® SD 715 C FRNC C1 7 x 0,25 mm² CE

**Application:** For flexible applications in areas with highest fire protection requirements e.g. power plant technology, railway applications.

### Construction:

|                         |                                                   |
|-------------------------|---------------------------------------------------|
| <b>Conductor:</b>       | bare copper strands, extra fine wires             |
| <b>Insulation:</b>      | SABIX®                                            |
| <b>Colour code:</b>     | with reference to DIN 47100                       |
| <b>Stranding:</b>       | in layers                                         |
| <b>Wrapping:</b>        | non-woven tape                                    |
| <b>Screen:</b>          | tinned copper braiding,<br>optical coverage ≥ 85% |
| <b>Wrapping:</b>        | non-woven tape                                    |
| <b>Sheath material:</b> | SABIX®                                            |
| <b>Sheath colour:</b>   | black (RAL 9005)                                  |

### Outstanding features:



- halogen-free
- continuously flexible
- good EMC characteristics
- no flame propagation
- flame retardant and self-extinguishing
- oil and fuel resistant
- good acid and alkalines resistance
- NF C 32-070 C1

### Technical Data:

|                                              |                                                                                                                                                                                                                                             |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Peak operating voltage:</b>               | < 0,25 mm² = max. 350 V<br>≥ 0,25 mm² = max. 500 V                                                                                                                                                                                          |
| <b>Testing voltage:</b>                      | core/core 1500 V<br>core/screen 1200 V                                                                                                                                                                                                      |
| <b>Min. bending radius</b>                   |                                                                                                                                                                                                                                             |
| fixed laying:                                | 4 x d                                                                                                                                                                                                                                       |
| flexible application:                        | 6 x d                                                                                                                                                                                                                                       |
| continuously flexible:                       | 15 x d                                                                                                                                                                                                                                      |
| <b>Radiation resistance:</b>                 | 1 x 10 <sup>7</sup> cJ/kg (100 kGy)                                                                                                                                                                                                         |
| <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<br>acc. to IEC 60332-3-24 + VDE 0482-332-3-24<br>resp. IEC 60332-3-25 + VDE 0482-332-3-25<br>cat. C resp. D.<br>Flame retardant and self-extinguishing<br>acc. to IEC 60332-1-2 + VDE 0482-332-1-2 +<br>NF C 32-070 C1 |
| <b>Corrosiveness of conflagration gases:</b> | in compliance with<br>IEC 60754-2 + VDE 0482-754-2 -<br>no development of corrosive conflagration gases                                                                                                                                     |
| <b>Smoke density:</b>                        | acc. to IEC 61034 + VDE 0482-1034                                                                                                                                                                                                           |
| <b>Toxicity:</b>                             | acc. to NF X 70-100                                                                                                                                                                                                                         |
| <b>Oil and fuel resistance:</b>              | acc. to EN 50264-1 + VDE 0260-264-1                                                                                                                                                                                                         |
| <b>UV, ozone and weather resistance:</b>     | good                                                                                                                                                                                                                                        |
| <b>Mycological resistance:</b>               | good                                                                                                                                                                                                                                        |
| <b>Absence of harmful substances:</b>        | acc. to RoHS directive of the European Union                                                                                                                                                                                                |

| item no. | no. of cores<br>x cross section<br>n x mm² | largest<br>single wire<br>ø mm | outer-ø<br>± 5%<br>mm | copper<br>figure<br>kg/km | cable<br>weight<br>≈ kg/km |
|----------|--------------------------------------------|--------------------------------|-----------------------|---------------------------|----------------------------|
| 67150214 | 2 x 0,14                                   | 0,11                           | 3,7                   | 13,5                      | 22                         |
| 67150314 | 3 x 0,14                                   | 0,11                           | 3,9                   | 15,0                      | 25                         |
| 67151214 | 12 x 0,14                                  | 0,11                           | 6,9                   | 38,3                      | 69                         |
| 67151814 | 18 x 0,14                                  | 0,11                           | 7,4                   | 49,4                      | 88                         |
| 67152514 | 25 x 0,14                                  | 0,11                           | 8,9                   | 62,8                      | 119                        |
| 67150225 | 2 x 0,25                                   | 0,11                           | 4,0                   | 15,8                      | 25                         |
| 67150425 | 4 x 0,25                                   | 0,11                           | 4,5                   | 24,7                      | 36                         |
| 67150525 | 5 x 0,25                                   | 0,11                           | 5,2                   | 27,6                      | 46                         |
| 67150625 | 6 x 0,25                                   | 0,11                           | 6,2                   | 33,0                      | 63                         |
| 67150725 | 7 x 0,25                                   | 0,11                           | 6,6                   | 38,1                      | 72                         |
| 67150825 | 8 x 0,25                                   | 0,11                           | 7,1                   | 41,6                      | 81                         |
| 67151225 | 12 x 0,25                                  | 0,11                           | 7,8                   | 54,6                      | 96                         |
| 67151825 | 18 x 0,25                                  | 0,11                           | 9,6                   | 89,7                      | 153                        |

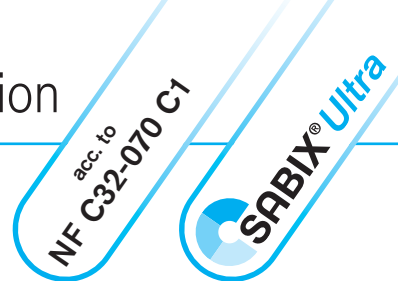
| item no. | no. of cores<br>x cross section<br>n x mm² | largest<br>single wire<br>ø mm | outer-ø<br>± 5%<br>mm | copper<br>figure<br>kg/km | cable<br>weight<br>≈ kg/km |
|----------|--------------------------------------------|--------------------------------|-----------------------|---------------------------|----------------------------|
| 67152525 | 25 x 0,25                                  | 0,11                           | 9,9                   | 110,4                     | 183                        |
| 67150434 | 4 x 0,34                                   | 0,11                           | 5,4                   | 28,9                      | 48                         |
| 67150534 | 5 x 0,34                                   | 0,11                           | 6,2                   | 35,7                      | 63                         |
| 67150734 | 7 x 0,34                                   | 0,11                           | 7,0                   | 45,1                      | 81                         |
| 67151234 | 12 x 0,34                                  | 0,11                           | 8,5                   | 65,0                      | 117                        |
| 67150250 | 2 x 0,50                                   | 0,11                           | 5,2                   | 25,2                      | 43                         |
| 67150350 | 3 x 0,50                                   | 0,11                           | 5,4                   | 30,3                      | 49                         |
| 67150450 | 4 x 0,50                                   | 0,11                           | 6,1                   | 38,5                      | 63                         |
| 67150550 | 5 x 0,50                                   | 0,11                           | 6,6                   | 45,3                      | 75                         |
| 67150475 | 4 x 0,75                                   | 0,11                           | 6,8                   | 50,8                      | 79                         |
| 67150575 | 5 x 0,75                                   | 0,11                           | 7,4                   | 57,7                      | 94                         |
| 67150775 | 7 x 0,75                                   | 0,11                           | 9,2                   | 79,9                      | 141                        |
| 67150785 | 7 x 1,50                                   | 0,11                           | 10,6                  | 153,3                     | 218                        |

Other dimensions and colours are possible on request.

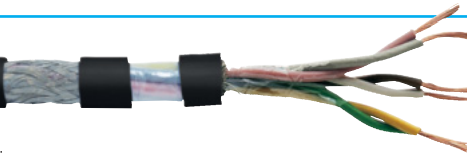
# Continuously flexible with highest fire protection

## SABIX® SD 745 C FRNC C1 TP

paired, continuously flexible data cable with improved fire performance and overall copper screen



45 C FRNC C1 TP 2 x 2 x 0,50 mm<sup>2</sup> CE



Marking for SABIX® SD 745 C FRNC C1 TP 67450250:

SAB BRÜCKSKES · D-VIERSEN · SABIX® SD 745 C FRNC C1 TP 2 x 2 x 0,50 mm<sup>2</sup> CE

**Application:** For flexible applications in areas with highest fire protection requirements e.g. power plant technology, railway applications.

### Construction:

|                         |                                                   |
|-------------------------|---------------------------------------------------|
| <b>Conductor:</b>       | bare copper strands, extra fine wires             |
| <b>Insulation:</b>      | SABIX®                                            |
| <b>Colour code:</b>     | with reference to DIN 47100                       |
| <b>Stranding:</b>       | pairwise, pairs in layers                         |
| <b>Wrapping:</b>        | non-woven tape                                    |
| <b>Screen:</b>          | tinned copper braiding,<br>optical coverage ≥ 85% |
| <b>Wrapping:</b>        | non-woven tape                                    |
| <b>Sheath material:</b> | SABIX®                                            |
| <b>Sheath colour:</b>   | black (RAL 9005)                                  |

### Outstanding features:



- halogen-free
- continuously flexible
- good EMC characteristics
- no flame propagation
- flame retardant and self-extinguishing
- oil and fuel resistant
- good acid and alkalines resistance
- NF C 32-070 C1

### Technical Data:

|                                              |                                                                                                                                                                                                                                             |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Peak operating voltage:</b>               | < 0,25 mm <sup>2</sup> = max. 350 V<br>≥ 0,25 mm <sup>2</sup> = max. 500 V                                                                                                                                                                  |
| <b>Testing voltage:</b>                      | core/core 1500 V<br>core/screen 1200 V                                                                                                                                                                                                      |
| <b>Min. bending radius</b>                   |                                                                                                                                                                                                                                             |
| fixed laying:                                | 4 x d                                                                                                                                                                                                                                       |
| flexible application:                        | 6 x d                                                                                                                                                                                                                                       |
| continuously flexible:                       | 15 x d                                                                                                                                                                                                                                      |
| <b>Radiation resistance:</b>                 | 1 x 10 <sup>7</sup> cJ/kg (100 kGy)                                                                                                                                                                                                         |
| <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<br>acc. to IEC 60332-3-24 + VDE 0482-332-3-24<br>resp. IEC 60332-3-25 + VDE 0482-332-3-25<br>cat. C resp. D.<br>Flame retardant and self-extinguishing<br>acc. to IEC 60332-1-2 + VDE 0482-332-1-2 +<br>NF C 32-070 C1 |
| <b>Corrosiveness of conflagration gases:</b> | in compliance with<br>IEC 60754-2 + VDE 0482-754-2 -<br>no development of corrosive conflagration gases                                                                                                                                     |
| <b>Smoke density:</b>                        | acc. to IEC 61034 + VDE 0482-1034                                                                                                                                                                                                           |
| <b>Toxicity:</b>                             | acc. to NF X 70-100                                                                                                                                                                                                                         |
| <b>Oil and fuel resistance:</b>              | acc. to EN 50264-1 + VDE 0260-264-1                                                                                                                                                                                                         |
| <b>UV, ozone and weather resistance:</b>     | good                                                                                                                                                                                                                                        |
| <b>Mycological resistance:</b>               | good                                                                                                                                                                                                                                        |
| <b>Absence of harmful substances:</b>        | acc. to RoHS directive of the European Union                                                                                                                                                                                                |

| item no. | no. of pairs<br>x cross section<br>n x 2 x mm <sup>2</sup> | largest<br>single wire<br>ø mm | outer-ø<br>± 10%<br>mm | copper<br>figure<br>kg/km | cable<br>weight<br>≈ kg/km |
|----------|------------------------------------------------------------|--------------------------------|------------------------|---------------------------|----------------------------|
| 67450214 | 2 x 2 x 0,14                                               | 0,11                           | 4,9                    | 18,6                      | 37                         |
| 67450414 | 4 x 2 x 0,14                                               | 0,11                           | 6,2                    | 27,5                      | 55                         |
| 67450514 | 5 x 2 x 0,14                                               | 0,11                           | 6,7                    | 32,4                      | 65                         |
| 67450614 | 6 x 2 x 0,14                                               | 0,11                           | 6,9                    | 35,3                      | 72                         |
| 67451014 | 10 x 2 x 0,14                                              | 0,11                           | 8,7                    | 52,0                      | 106                        |
| 67451414 | 14 x 2 x 0,14                                              | 0,11                           | 10,2                   | 83,4                      | 148                        |
| 67450225 | 2 x 2 x 0,25                                               | 0,11                           | 5,4                    | 23,3                      | 45                         |
| 67450425 | 4 x 2 x 0,25                                               | 0,11                           | 6,9                    | 38,4                      | 69                         |
| 67450625 | 6 x 2 x 0,25                                               | 0,11                           | 7,6                    | 50,0                      | 91                         |
| 67450725 | 7 x 2 x 0,25                                               | 0,11                           | 7,9                    | 53,4                      | 103                        |
| 67450825 | 8 x 2 x 0,25                                               | 0,11                           | 9,3                    | 63,9                      | 133                        |
| 67451025 | 10 x 2 x 0,25                                              | 0,11                           | 9,8                    | 88,3                      | 147                        |
| 67451225 | 12 x 2 x 0,25                                              | 0,11                           | 10,7                   | 105,5                     | 172                        |
| 67451425 | 14 x 2 x 0,25                                              | 0,11                           | 11,3                   | 118,1                     | 191                        |
| 67451625 | 16 x 2 x 0,25                                              | 0,11                           | 11,7                   | 122,5                     | 205                        |
| 67450234 | 2 x 2 x 0,34                                               | 0,11                           | 6,5                    | 30,3                      | 64                         |

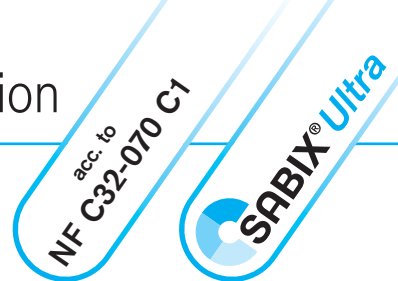
| item no. | no. of pairs<br>x cross section<br>n x 2 x mm <sup>2</sup> | largest<br>single wire<br>ø mm | outer-ø<br>± 10%<br>mm | copper<br>figure<br>kg/km | cable<br>weight<br>≈ kg/km |
|----------|------------------------------------------------------------|--------------------------------|------------------------|---------------------------|----------------------------|
| 67450634 | 6 x 2 x 0,34                                               | 0,11                           | 9,6                    | 57,4                      | 128                        |
| 67450734 | 7 x 2 x 0,34                                               | 0,11                           | 10,0                   | 87,6                      | 159                        |
| 67451034 | 10 x 2 x 0,34                                              | 0,11                           | 11,6                   | 110,9                     | 191                        |
| 67451834 | 18 x 2 x 0,34                                              | 0,11                           | 14,9                   | 184,0                     | 314                        |
| 67451934 | 19 x 2 x 0,34                                              | 0,11                           | 14,9                   | 190,6                     | 329                        |
| 67452734 | 27 x 2 x 0,34                                              | 0,11                           | 17,9                   | 286,4                     | 479                        |
| 67450250 | 2 x 2 x 0,50                                               | 0,11                           | 7,1                    | 38,6                      | 74                         |
| 67450350 | 3 x 2 x 0,50                                               | 0,11                           | 7,8                    | 51,0                      | 90                         |
| 67450450 | 4 x 2 x 0,50                                               | 0,11                           | 9,3                    | 64,1                      | 119                        |
| 67451050 | 10 x 2 x 0,50                                              | 0,11                           | 13,3                   | 155,1                     | 263                        |
| 67451850 | 18 x 2 x 0,50                                              | 0,11                           | 17,1                   | 279,3                     | 447                        |
| 67452550 | 25 x 2 x 0,50                                              | 0,11                           | 19,4                   | 358,2                     | 568                        |
| 67450275 | 2 x 2 x 0,75                                               | 0,11                           | 8,0                    | 51,3                      | 92                         |
| 67450475 | 4 x 2 x 0,75                                               | 0,11                           | 10,8                   | 103,4                     | 171                        |
| 67450875 | 8 x 2 x 0,75                                               | 0,11                           | 15,0                   | 186,4                     | 335                        |
| 67451075 | 10 x 2 x 0,75                                              | 0,11                           | 15,3                   | 237,0                     | 361                        |

Other dimensions and colours are possible on request.

# Continuously flexible with highest fire protection

## SABIX® S 710 FRNC C1

continuously flexible control cable with improved fire performance



Marking for SABIX® S 710 FRNC C1 67100415:  
SAB BRÜCKSKES · D-VIERSEN · SABIX® S 710 FRNC C1 4 x 1,5 mm² CE

**Application:** For flexible applications in areas with highest fire protection requirements e.g. power plant technology, railway applications.

### Construction:

|                         |                                                                                                                  |
|-------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Conductor:</b>       | bare copper strands<br>acc. to IEC 60228, VDE 0295, class 6                                                      |
| <b>Insulation:</b>      | SABIX®                                                                                                           |
| <b>Colour code:</b>     | black cores with consecutive numbers<br>acc. to EN 50334 + VDE 0293-334,<br>green-yellow earth wire from 3 cores |
| <b>Stranding:</b>       | in layers                                                                                                        |
| <b>Wrapping:</b>        | non-woven tape                                                                                                   |
| <b>Sheath material:</b> | SABIX®                                                                                                           |
| <b>Sheath colour:</b>   | black (RAL 9005)                                                                                                 |

### Outstanding features:

- halogen-free
- continuously flexible
- no flame propagation
- flame retardant and self-extinguishing
- oil and fuel resistant
- good acid and alkalines resistance
- NF C 32-070 C1

### Technical Data:

|                                              |                                                                                                                                                                                                                                             |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Nominal voltage:</b>                      | Uo/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                                                                                                                                                                                                                                       |
| <i>continuously flexible:</i>                | 15 x d                                                                                                                                                                                                                                      |
| <b>Radiation resistance:</b>                 | 1 x 10 <sup>7</sup> cJ/kg (100 kGy)                                                                                                                                                                                                         |
| <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<br>acc. to IEC 60332-3-24 + VDE 0482-332-3-24<br>resp. IEC 60332-3-25 + VDE 0482-332-3-25<br>cat. C resp. D.<br>Flame retardant and self-extinguishing<br>acc. to IEC 60332-1-2 + VDE 0482-332-1-2 +<br>NF C 32-070 C1 |
| <b>Corrosiveness of conflagration gases:</b> | in compliance with<br>IEC 60754-2 + VDE 0482-754-2 -<br>no development of corrosive conflagration gases                                                                                                                                     |
| <b>Smoke density:</b>                        | acc. to IEC 61034 + VDE 0482-1034                                                                                                                                                                                                           |
| <b>Toxicity:</b>                             | acc. to NF X 70-100                                                                                                                                                                                                                         |
| <b>Oil and fuel resistance:</b>              | acc. to EN 50264-1 + VDE 0260-264-1                                                                                                                                                                                                         |
| <b>UV, ozone and weather resistance:</b>     | good                                                                                                                                                                                                                                        |
| <b>Mycological resistance:</b>               | good                                                                                                                                                                                                                                        |
| <b>Absence of harmful substances:</b>        | acc. to RoHS directive of the European Union                                                                                                                                                                                                |

| item no. | no. of cores<br>x cross section<br>n x mm <sup>2</sup> | largest<br>single wire<br>ø mm | outer-ø<br>± 5%<br>mm | copper<br>figure<br>kg/km | cable<br>weight<br>≈ kg/km |
|----------|--------------------------------------------------------|--------------------------------|-----------------------|---------------------------|----------------------------|
| 67100205 | 2 x 0,50                                               | 0,16                           | 6,4                   | 9,6                       | 62                         |
| 67100505 | 5 x 0,50                                               | 0,16                           | 8,2                   | 24,0                      | 97                         |
| 67100507 | 5 x 0,75                                               | 0,16                           | 9,0                   | 36,0                      | 121                        |
| 67100707 | 7 x 0,75                                               | 0,16                           | 10,7                  | 50,4                      | 170                        |
| 67100310 | 3 x 1,00                                               | 0,16                           | 7,9                   | 28,8                      | 92                         |
| 67100510 | 5 x 1,00                                               | 0,16                           | 9,3                   | 48,0                      | 137                        |
| 67100710 | 7 x 1,00                                               | 0,16                           | 11,1                  | 67,2                      | 193                        |
| 67101210 | 12 x 1,00                                              | 0,16                           | 13,6                  | 115,2                     | 284                        |
| 67101810 | 18 x 1,00                                              | 0,16                           | 16,1                  | 172,8                     | 406                        |
| 67100215 | 2 x 1,50                                               | 0,16                           | 8,6                   | 28,8                      | 112                        |
| 67100315 | 3 x 1,50                                               | 0,16                           | 9,2                   | 43,2                      | 127                        |
| 67100415 | 4 x 1,50                                               | 0,16                           | 9,7                   | 57,6                      | 151                        |
| 67100515 | 5 x 1,50                                               | 0,16                           | 10,9                  | 72,0                      | 189                        |
| 67100715 | 7 x 1,50                                               | 0,16                           | 13,1                  | 100,8                     | 276                        |

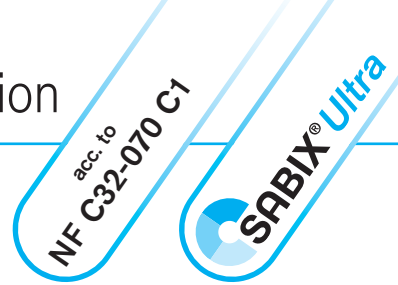
| item no. | no. of cores<br>x cross section<br>n x mm <sup>2</sup> | largest<br>single wire<br>ø mm | outer-ø<br>± 5%<br>mm | copper<br>figure<br>kg/km | cable<br>weight<br>≈ kg/km |
|----------|--------------------------------------------------------|--------------------------------|-----------------------|---------------------------|----------------------------|
| 67101215 | 12 x 1,50                                              | 0,16                           | 15,8                  | 172,8                     | 390                        |
| 67101815 | 18 x 1,50                                              | 0,16                           | 18,7                  | 259,2                     | 562                        |
| 67102415 | 24 x 1,50                                              | 0,16                           | 21,8                  | 345,6                     | 721                        |
| 67102515 | 25 x 1,50                                              | 0,16                           | 22,1                  | 360,0                     | 735                        |
| 67100325 | 3 x 2,50                                               | 0,16                           | 10,8                  | 72,0                      | 183                        |
| 67100425 | 4 x 2,50                                               | 0,16                           | 12,1                  | 69,0                      | 240                        |
| 67100525 | 5 x 2,50                                               | 0,16                           | 13,5                  | 120,0                     | 294                        |
| 67100725 | 7 x 2,50                                               | 0,16                           | 15,8                  | 168,0                     | 408                        |
| 67101225 | 12 x 2,50                                              | 0,16                           | 19,2                  | 288,0                     | 584                        |
| 67100440 | 4 x 4,00                                               | 0,16                           | 13,5                  | 153,6                     | 321                        |
| 67100460 | 4 x 6,00                                               | 0,21                           | 15,4                  | 230,4                     | 427                        |
| 67100461 | 4 x 10,00                                              | 0,21                           | 19,2                  | 384,0                     | 769                        |
| 67100462 | 4 x 16,00                                              | 0,21                           | 22,1                  | 614,4                     | 1005                       |
| 67100465 | 4 x 50,00                                              | 0,31                           | 35,9                  | 1920,0                    | 2747                       |

Other dimensions and colours are possible on request.

# Continuously flexible with highest fire protection

## SABIX® S 712 C FRNC C1

continuously flexible control cable with improved fire performance and overall copper screen



Marking for SABIX® S 712 C FRNC C1 67120315:

SAB BRÜCKSKES · D-VIERSEN · SABIX® S 712 C FRNC C1 3 x 1,5 mm² CE

**Application:** For flexible applications in areas with highest fire protection requirements e.g. power plant technology, railway applications.

### Construction:

|                         |                                                                                                                  |
|-------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Conductor:</b>       | bare copper strands<br>acc. to IEC 60228, VDE 0295, class 6                                                      |
| <b>Insulation:</b>      | SABIX®                                                                                                           |
| <b>Colour code:</b>     | black cores with consecutive numbers<br>acc. to EN 50334 + VDE 0293-334,<br>green-yellow earth wire from 3 cores |
| <b>Stranding:</b>       | in layers                                                                                                        |
| <b>Wrapping:</b>        | non-woven tape                                                                                                   |
| <b>Screen:</b>          | tinned copper braiding,<br>optical coverage ≥ 85%                                                                |
| <b>Wrapping:</b>        | non-woven tape                                                                                                   |
| <b>Sheath material:</b> | SABIX®                                                                                                           |
| <b>Sheath colour:</b>   | black (RAL 9005)                                                                                                 |

### Outstanding features:



- halogen-free
- continuously flexible
- good EMC characteristics
- no flame propagation
- flame retardant and self-extinguishing
- oil and fuel resistant
- good acid and alkalines resistance
- NF C 32-070 C1

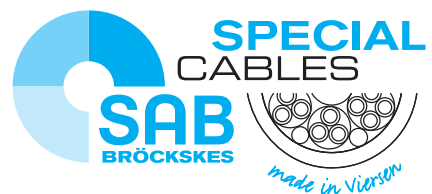
### Technical Data:

|                                              |                                                                                                                                                                                                                                             |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Nominal voltage:</b>                      | Uo/U 0,6/1 kV                                                                                                                                                                                                                               |
| <b>Testing voltage:</b>                      | core/core 4000 V<br>core/screen 4000 V                                                                                                                                                                                                      |
| <b>Min. bending radius</b>                   |                                                                                                                                                                                                                                             |
| fixed laying:                                | 4 x d                                                                                                                                                                                                                                       |
| flexible application:                        | 6 x d                                                                                                                                                                                                                                       |
| continuously flexible:                       | 15 x d                                                                                                                                                                                                                                      |
| <b>Radiation resistance:</b>                 | 1 x 10 <sup>7</sup> cJ/kg (100 kGy)                                                                                                                                                                                                         |
| <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<br>acc. to IEC 60332-3-24 + VDE 0482-332-3-24<br>resp. IEC 60332-3-25 + VDE 0482-332-3-25<br>cat. C resp. D.<br>Flame retardant and self-extinguishing<br>acc. to IEC 60332-1-2 + VDE 0482-332-1-2 +<br>NF C 32-070 C1 |
| <b>Corrosiveness of conflagration gases:</b> | in compliance with<br>IEC 60754-2 + VDE 0482-754-2 -<br>no development of corrosive conflagration gases                                                                                                                                     |
| <b>Smoke density:</b>                        | acc. to IEC 61034 + VDE 0482-1034                                                                                                                                                                                                           |
| <b>Toxicity:</b>                             | acc. to NF X 70-100                                                                                                                                                                                                                         |
| <b>Oil and fuel resistance:</b>              | acc. to EN 50264-1 + VDE 0260-264-1                                                                                                                                                                                                         |
| <b>UV, ozone and weather resistance:</b>     | good                                                                                                                                                                                                                                        |
| <b>Mycological resistance:</b>               | good                                                                                                                                                                                                                                        |
| <b>Absence of harmful substances:</b>        | acc. to RoHS directive of the European Union                                                                                                                                                                                                |

| item no. | no. of cores<br>x cross section<br>n x mm <sup>2</sup> | largest<br>single wire<br>ø mm | outer-ø<br>± 5%<br>mm | copper<br>figure<br>kg/km | cable<br>weight<br>≈ kg/km |
|----------|--------------------------------------------------------|--------------------------------|-----------------------|---------------------------|----------------------------|
| 67120205 | 2 x 0,50                                               | 0,16                           | 7,1                   | 29,2                      | 80                         |
| 67120505 | 5 x 0,50                                               | 0,16                           | 8,8                   | 49,9                      | 121                        |
| 67120507 | 5 x 0,75                                               | 0,16                           | 9,6                   | 65,4                      | 147                        |
| 67120707 | 7 x 0,75                                               | 0,16                           | 11,4                  | 103,2                     | 212                        |
| 67120510 | 5 x 1,00                                               | 0,16                           | 9,8                   | 77,6                      | 162                        |
| 67120710 | 7 x 1,00                                               | 0,16                           | 12,2                  | 123,6                     | 250                        |
| 67121210 | 12 x 1,00                                              | 0,16                           | 14,3                  | 184,0                     | 337                        |
| 67121810 | 18 x 1,00                                              | 0,16                           | 17,0                  | 285,9                     | 491                        |
| 67120215 | 2 x 1,50                                               | 0,16                           | 8,9                   | 55,7                      | 131                        |
| 67120315 | 3 x 1,50                                               | 0,16                           | 9,5                   | 72,5                      | 149                        |
| 67120415 | 4 x 1,50                                               | 0,16                           | 10,5                  | 105,7                     | 192                        |
| 67120515 | 5 x 1,50                                               | 0,16                           | 12,0                  | 127,9                     | 246                        |
| 67121215 | 12 x 1,50                                              | 0,16                           | 16,7                  | 285,0                     | 475                        |
| 67121815 | 18 x 1,50                                              | 0,16                           | 19,6                  | 391,5                     | 661                        |

| item no. | no. of cores<br>x cross section<br>n x mm <sup>2</sup> | largest<br>single wire<br>ø mm | outer-ø<br>± 5%<br>mm | copper<br>figure<br>kg/km | cable<br>weight<br>≈ kg/km |
|----------|--------------------------------------------------------|--------------------------------|-----------------------|---------------------------|----------------------------|
| 67122515 | 25 x 1,50                                              | 0,16                           | 23,1                  | 527,6                     | 865                        |
| 67120225 | 2 x 2,50                                               | 0,16                           | 10,9                  | 101,0                     | 201                        |
| 67120325 | 3 x 2,50                                               | 0,16                           | 11,5                  | 127,7                     | 227                        |
| 67120425 | 4 x 2,50                                               | 0,16                           | 12,8                  | 155,5                     | 287                        |
| 67120525 | 5 x 2,50                                               | 0,16                           | 14,2                  | 188,6                     | 347                        |
| 67121225 | 12 x 2,50                                              | 0,16                           | 20,2                  | 431,5                     | 696                        |
| 67120440 | 4 x 4,00                                               | 0,16                           | 14,2                  | 222,2                     | 374                        |
| 67120540 | 5 x 4,00                                               | 0,16                           | 16,1                  | 302,5                     | 481                        |
| 67120740 | 7 x 4,00                                               | 0,16                           | 18,9                  | 395,6                     | 652                        |
| 67120260 | 2 x 6,00                                               | 0,21                           | 14,0                  | 183,4                     | 340                        |
| 67120460 | 4 x 6,00                                               | 0,21                           | 16,6                  | 339,6                     | 513                        |
| 67120462 | 4 x 16,0                                               | 0,21                           | 23,1                  | 775,6                     | 1131                       |
| 67120463 | 4 x 25,0                                               | 0,21                           | 27,2                  | 1127,0                    | 1615                       |
| 67120464 | 4 x 35,0                                               | 0,21                           | 30,9                  | 1541,2                    | 2171                       |

Other dimensions and colours are possible on request.



**SAB BRÖCKSKES GMBH & CO. KG**  
GREFRATHER STR. 204 - 212 B  
41749 VIERSEN · GERMANY  
TEL.: +49/2162/898-0  
FAX: +49/2162/898-101  
[WWW.SAB-WORLDWIDE.COM](http://WWW.SAB-WORLDWIDE.COM)  
[INFO@SAB-BROECKSKES.DE](mailto:INFO@SAB-BROECKSKES.DE)