

# HALOGEN-FREE CABLES

EN 45545-2

Flame retardant acc. to  
UN/ECE R118

## SABIX® R 645 FRNC TP SABIX® Rail Data paired with overall copper screen



Marking for SABIX R 645 FRNC TP 66450325:  
SAB BRÖCKSKES · D-VIERSEN · SABIX R 645 FRNC TP 3 x 2 x 0,25 mm<sup>2</sup> CE

A  
53

### Construction:

|                         |   |
|-------------------------|---|
| <b>Conductor:</b>       | bare copper strands with reference to IEC 60228, EN 6028, 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®  |
| <b>Sheath colour:</b>   | grey (RAL 7032)   |

### Outstanding features:

- halogen-free
- no flame propagation
- good EMC characteristics\*
- flame retardant and self-extinguishing
- fulfils fire protection requirements R15 (EL1A) acc. to EN 45545-2 for hazard levels HL1-3
- tested acc. to American ASTM standard
- flame retardant acc. to UN/ECE R118
- good transmission rates and crosstalk attenuation
- EAC approval

\* Copper braiding should be connected circularly to optimize the EMC characteristics

### 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:                         | 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 EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0,5% acc. to DIN EN 50267-2-1. pH-value is > 4,3 acc. to DIN EN 50267-2-2. Conductivity is < 10,0 µS/mm acc. to DIN EN 50267-2-2. Fluoric content < 0,1% acc. to DIN EN 60684-2 |
| <b>Fire performance:</b>              | No flame propagation acc. to DIN EN 60332-3-24, DIN EN 60332-3-25 + DIN EN 50305 section 9.1.2. Flame retardant and self-extinguishing acc. to DIN EN 60332-1-2. Burning tests acc. to ASTM E 162-09. Flame retardant acc. to ISO 6722 (UN/ECE R118)   |
| <b>Toxicity:</b>                      | acc. to DIN EN 50305   |
| <b>Smoke density:</b>                 | acc. to DIN EN 61034 + ASTM E 662-09   |
| <b>Flexibility:</b>                   | good   |
| <b>Absence of harmful substances:</b> | acc. to RoHS directive of the European Union see page N/17   |

Tested at reference types



Especially for use  
in rail vehicles

| item no. | no. of pairs<br>x cross section<br>n x 2 x mm <sup>2</sup> | outer-ø<br>± 10%<br>mm | copper<br>figure<br>kg/km | cable<br>weight<br>≈ kg/km | item no. | no. of pairs<br>x cross section<br>n x 2 x mm <sup>2</sup> | outer-ø<br>± 10%<br>mm | copper<br>figure<br>kg/km | cable<br>weight<br>≈ kg/km |
|----------|--|------------------------|---------------------------|----------------------------|----------|--|------------------------|---------------------------|----------------------------|
| 66450214 | 2 x 2 x 0,14   | 5,2                    | 19,1                      | 38                         | 66450834 | 8 x 2 x 0,34   | 10,6                   | 80,7                      | 159                        |
| 66450314 | 3 x 2 x 0,14   | 5,7                    | 23,4                      | 44                         | 66451234 | 12 x 2 x 0,34  | 13,4                   | 133,1                     | 248                        |
| 66450414 | 4 x 2 x 0,14   | 6,5                    | 27,8                      | 54                         | 66451634 | 16 x 2 x 0,34  | 14,6                   | 165,0                     | 305                        |
| 66450514 | 5 x 2 x 0,14   | 7,0                    | 31,9                      | 64                         | 66451834 | 18 x 2 x 0,34  | 15,1                   | 178,3                     | 334                        |
| 66450614 | 6 x 2 x 0,14   | 7,2                    | 36,2                      | 71                         | 66452434 | 24 x 2 x 0,34  | 17,6                   | 255,1                     | 449                        |
| 66450814 | 8 x 2 x 0,14   | 7,8                    | 43,4                      | 83                         | 66450250 | 2 x 2 x 0,50   | 7,2                    | 39,3                      | 72                         |
| 66451014 | 10 x 2 x 0,14  | 8,9                    | 50,6                      | 105                        | 66450350 | 3 x 2 x 0,50   | 7,9                    | 50,1                      | 92                         |
| 66451214 | 12 x 2 x 0,14  | 9,7                    | 58,2                      | 121                        | 66450450 | 4 x 2 x 0,50   | 9,4                    | 64,6                      | 119                        |
| 66451614 | 16 x 2 x 0,14  | 10,5                   | 71,4                      | 147                        | 66450550 | 5 x 2 x 0,50   | 10,2                   | 76,3                      | 141                        |
| 66451814 | 18 x 2 x 0,14  | 11,1                   | 92,8                      | 174                        | 66450650 | 6 x 2 x 0,50   | 10,4                   | 86,0                      | 155                        |
| 66452414 | 24 x 2 x 0,14  | 12,8                   | 114,8                     | 223                        | 66450850 | 8 x 2 x 0,50   | 11,4                   | 126,6                     | 179                        |
| 66450225 | 2 x 2 x 0,25   | 5,7                    | 24,9                      | 46                         | 66451050 | 10 x 2 x 0,50  | 13,2                   | 146,5                     | 252                        |
| 66450325 | 3 x 2 x 0,25   | 6,4                    | 31,4                      | 61                         | 66451250 | 12 x 2 x 0,50  | 14,4                   | 175,6                     | 294                        |
| 66450425 | 4 x 2 x 0,25   | 7,2                    | 39,3                      | 72                         | 66451650 | 16 x 2 x 0,50  | 16,3                   | 241,3                     | 380                        |
| 66450525 | 5 x 2 x 0,25   | 7,7                    | 45,8                      | 83                         | 66451850 | 18 x 2 x 0,50  | 16,9                   | 261,0                     | 436                        |
| 66450625 | 6 x 2 x 0,25   | 7,9                    | 50,7                      | 92                         | 66452450 | 24 x 2 x 0,50  | 19,0                   | 330,4                     | 508                        |
| 66450825 | 8 x 2 x 0,25   | 9,0                    | 62,1                      | 119                        | 66450275 | 2 x 2 x 0,75   | 8,5                    | 52,4                      | 102                        |
| 66451025 | 10 x 2 x 0,25  | 9,8                    | 73,9                      | 138                        | 66450375 | 3 x 2 x 0,75   | 9,4                    | 69,4                      | 128                        |
| 66451225 | 12 x 2 x 0,25  | 10,9                   | 101,9                     | 173                        | 66450475 | 4 x 2 x 0,75   | 10,9                   | 101,9                     | 166                        |
| 66451625 | 16 x 2 x 0,25  | 11,9                   | 126,8                     | 213                        | 66450575 | 5 x 2 x 0,75   | 11,7                   | 121,9                     | 201                        |
| 66451825 | 18 x 2 x 0,25  | 12,7                   | 136,6                     | 245                        | 66450675 | 6 x 2 x 0,75   | 12,5                   | 136,5                     | 239                        |
| 66452425 | 24 x 2 x 0,25  | 14,2                   | 170,3                     | 296                        | 66450875 | 8 x 2 x 0,75   | 13,7                   | 170,1                     | 279                        |
| 66450234 | 2 x 2 x 0,34   | 6,8                    | 31,5                      | 63                         | 66451275 | 12 x 2 x 0,75  | 17,1                   | 261,2                     | 419                        |
| 66450334 | 3 x 2 x 0,34   | 7,4                    | 39,7                      | 79                         | 66451675 | 16 x 2 x 0,75  | 18,6                   | 329,9                     | 522                        |
| 66450434 | 4 x 2 x 0,34   | 8,8                    | 49,8                      | 102                        | 66451875 | 18 x 2 x 0,75  | 19,3                   | 369,3                     | 580                        |
| 66450534 | 5 x 2 x 0,34   | 9,5                    | 58,5                      | 121                        | 66452475 | 24 x 2 x 0,75  | 21,8                   | 469,2                     | 714                        |
| 66450634 | 6 x 2 x 0,34   | 9,7                    | 65,1                      | 125                        |          |  |                        |                           |                            |

Other dimensions and colours are possible on request.