# BiTflex®(N)TMCGCWOEU

RoHS 2015/863/EU

CPR

CPR 305/2011

Crane cables

High flexible, medium voltage, screened single core cable based on DIN VDE 0250-813


mining applications | industral application | EN 60332-1-2 | high flexibility | UV resistance | oil resistant EN 60811-404 | drag chains | mechanical resistance | low operating temperature | oxygen index >29

## Technical data:

***Thermal parameters:***

**Ambient temperature:**
fixed installation: -50 °C to 80 °C
flexible operation: -35 °C to 80 °C
**Max. permissible conductor temp.:** 90 °C
**Max. short-circuit temp. at conductor:** 200 °C

***Mechanical parameters:***

**Max. tensile load per conductor:** 15 N/mm²
**Bending radius:**
- fixed installation: ≥ 6 x outer-Ø
- free moving: ≥ 8 x outer-Ø

**Movement speed (typical values):**
- Shore-power systems: 6 m/min
- Energy chains on cranes: 70 – 240 m/min

## Design:

**Conductor:** tinned copper wires, finely stranded, class 5 acc. to DIN EN / IEC 60228

**Insulation:**
- inner semi-conductive stress control layer
- EPR compound with improved electrical and mechanical characteristics based on DIN VDE 0207-20
- outer semi-conductive insulation shield layer

**Protective conductor:** concentric ground conductor: spinning with tinned copper wire strands based on DIN VDE 0250-1, covering approx. 85 %

**Outer sheath:** heavy duty rubber compound, type 5GM5 acc. to DIN VDE 0207-21, flame retardant acc. to EN 60332-1-2, oil resistance acc. to EN 60811-404, unrestricted use indoors, outdoors, ozone, UV and moisture resistant, colour: red, inkjet marking

## Application:

Flexible voltage cable used in short lengths, e.g. as a connection in switch-gear or transformer houses where small bending radius is requested. Cable are also used in slow moving Offshore-Power-Systems: energy chains or reeling operation or power supply for large electrical applications and drives via cable carrier systems and Shore Power System for container vessels / energy chains on e.g. port / intermodal cranes

## Approvals:

UL. Certificate no.: UL-US-2322574-2 / E524140-20230601

## Chemical parameters:

| | |
|---|---|
| Resistance to oil: | DIN EN / IEC 60811-404 |
| Behaviour in case of fire: | DIN EN / IEC 60332-1-2 |
| Weather resistance: | unrestricted use indoors, outdoors, resistance to ozone, UV and moisture |
| Water resistance: | BiTflex®(N)TMCGCWOEU can be use at locations where the cables are completely covered with water and permanently subjected to a pressure ≤10 bar – covers protection class AD8 |

***Electrical parameters:***

| Rated voltage $U_0/U$ [kV] | 3.6/6 | 6/10 | 8.7/15 | 12/20 | 14/25 | 18/30 |
|---|---|---|---|---|---|---|
| Maximum permissible operating voltage $U_{b\,max}$ in AC systems [kV]: | 4.2/7.2 | 6.9/12 | 10.4/18 | 13.9/24 | 17.3/30 | 20.8/36 |
| Maximum permissible operating voltage $U_{b\,max}$ in DC systems [kV]: | 5.4/10.8 | 9/18 | 13.5/27 | 18/36 | 22.5/45 | 27/54 |
| AC. test voltage acc. to DIN VDE 0250-813 [kV]: | 11 | 17 | 24 | 29 | 36 | 43 |
| De-rating factors: acc. to DIN VDE 0298-4 | | | | | | |

Cable Factory BITNER reserves the right to modify specifications without prior notification.
Note: on customer's request other cross sections or number of cores can be produced

# BiTflex®(N)TMCGCWOEU

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## BiTflex®(N)TMCGCWOEU 3,6/6 kV

| Nr kat. | n x mm² | Maximum conductor resistance | Nominal diameter over insulation | Outer diameter min.-max. [mm] | Approximate cable weight [kg/km] | Current carrying capacity[1)] |
|---|---|---|---|---|---|---|
| BM1538 | 1x120/16 | 0,164 | 21,0 | 30-33 | 1880 | 383 |
| BM1539 | 1x185/25 | 0,132 | 24,0 | 35-38 | 2640 | 444 |
| BM1540 | 1x240/25 | 0,108 | 26,0 | 38-41 | 3250 | 510 |

## BiTflex®(N)TMCGCWOEU 6/10 kV

| Nr kat. | n x mm² | Maximum conductor resistance | Nominal diameter over insulation | Outer diameter min.-max. [mm] | Approximate cable weight [kg/km] | Current carrying capacity[1)] |
|---|---|---|---|---|---|---|
| BM1550 | 1x25/16 | 0.795 | 13,0 | 22-25 | 790 | 135 |
| BM1551 | 1x35/16 | 0.565 | 14,5 | 23-26 | 930 | 169 |
| BM1552 | 1x50/16 | 0.393 | 16,0 | 25-28 | 1130 | 207 |
| BM1553 | 1x70/16 | 0.277 | 18,0 | 27-30 | 1380 | 268 |
| BM1554 | 1x95/16 | 0.210 | 19,0 | 29-32 | 1640 | 328 |
| BM1555 | 1x120/16 | 0.164 | 21,0 | 31-34 | 1990 | 383 |
| BM1556 | 1x150/25 | 0.132 | 23,0 | 33-36 | 2320 | 444 |
| BM1557 | 1x185/25 | 0.108 | 25,0 | 35-38 | 2680 | 510 |
| BM1558 | 1x240/25 | 0.0817 | 27,0 | 38-41 | 3300 | 607 |
| BM1559 | 1x300/25* | 0.0654 | 29,0 | 40-43 | 3940 | 703 |

## BiTflex®(N)TMCGCWOEU 12/20 kV

| Nr kat. | n x mm² | Maximum conductor resistance | Nominal diameter over insulation | Outer diameter min.-max. [mm] | Approximate cable weight [kg/km] | Current carrying capacity[1)] |
|---|---|---|---|---|---|---|
| BM1565 | 1x25/16 | 0.795 | 17,0 | 26-29 | 1010 | 135 |
| BM1566 | 1x35/16 | 0.565 | 18,0 | 27-30 | 1160 | 169 |
| BM1567 | 1x50/16 | 0.393 | 19,0 | 28-31 | 1350 | 207 |
| BM1568 | 1x70/16 | 0.277 | 21,0 | 31-34 | 1670 | 268 |
| BM1569 | 1x95/16 | 0.210 | 23,0 | 33-36 | 1940 | 328 |
| BM1570 | 1x120/16 | 0.164 | 24,0 | 35-38 | 2230 | 383 |
| BM1571 | 1x150/25 | 0.132 | 26,0 | 37-40 | 2660 | 444 |
| BM1572 | 1x185/25 | 0.108 | 28,0 | 39-42 | 3040 | 510 |
| BM1573 | 1x240/25 | 0.0817 | 30,0 | 41-44 | 3580 | 607 |
| BM1574 | 1x300/25* | 0.0654 | 29,0 | 44-47 | 4240 | 703 |

## BiTflex®(N)TMCGCWOEU 18/30 kV

| Nr kat. | n x mm² | Maximum conductor resistance | Nominal diameter over insulation | Outer diameter min.-max. [mm] | Approximate cable weight [kg/km] | Current carrying capacity[1)] |
|---|---|---|---|---|---|---|
| BM1580 | 1x25/16 | 0.795 | 20,0 | 29-32 | 1240 | 135 |
| BM1581 | 1x35/16 | 0.565 | 21,5 | 32-34 | 1450 | 169 |
| BM1582 | 1x50/16 | 0.393 | 23,0 | 33-36 | 1660 | 207 |
| BM1583 | 1x70/16 | 0.277 | 24,5 | 35-38 | 1920 | 268 |
| BM1584 | 1x95/16 | 0.210 | 26,0 | 38-41 | 2300 | 328 |
| BM1585 | 1x120/16 | 0.164 | 28,0 | 39-42 | 2600 | 383 |
| BM1586 | 1x150/25 | 0.132 | 30,0 | 41-44 | 2970 | 444 |
| BM1587 | 1x185/25 | 0.108 | 32,0 | 43-46 | 3350 | 510 |
| BM1588 | 1x240/25 | 0.0817 | 34,0 | 45-48 | 3910 | 607 |
| BM1589 | 1x300/25* | 0.0654 | 36,0 | 47-50 | 4600 | 703 |

*Cross-sections outside of the UL approved range

[1)] acc. to IEC 60364-5-52, conductor temperature: 90 °C/Reference ambient temperature: 30 °C, free in air, based on installation method F, three loaded conductors trefoil, values for further installation methods on request

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