



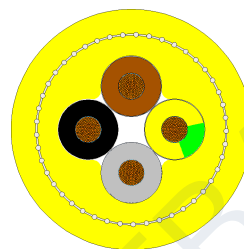
TEBAOFLEX CABLE

## DATA SHEET

Mining&Industrial cable

### NSHTOEU

0.6/1 kV LHD reeling cable for scoop operations



#### APPLICATION

Flexible underground reeling cable for frequently changing dynamic loads on scoops (LHDs), suitable for mono-spiral reels and cylindrical reels.

#### CONSTRUCTION

| Parameter           | Value                                                                                       |
|---------------------|---------------------------------------------------------------------------------------------|
| Conductor           | Electrolytic copper, very finely stranded, Class FS                                         |
| Insulation          | EPR, compound type 3GI3                                                                     |
| Core identification | Power cores black, grey, brown or natural with black figures; protective earth green/yellow |
| Support element     | Central aramid yarn support element with rubber covering                                    |
| Inner sheath        | 5GM5 compound, yellow or orange                                                             |
| Torsion protection  | Reinforced polyester braid in vulcanized bond, approx. 25% coverage                         |
| Outer sheath        | Synthetic elastomer such as CR, compound type 5GM5, yellow or orange                        |
| Cable design        | LHD reeling cable for scoop operations; mono-spiral and cylindrical reels                   |

#### ELECTRICAL AND CHEMICAL CHARACTERISTICS

| Parameter                           | Value                                            |
|-------------------------------------|--------------------------------------------------|
| Rated voltage U <sub>0</sub> /U     | 0.6/1 kV; also permitted for 640/1140 V          |
| Maximum AC operating voltage        | 0.7/1.2 kV                                       |
| Maximum DC operating voltage        | 0.9/1.8 kV                                       |
| AC test voltage                     | Main cores 2.5 kV for 5 min.; control cores 2 kV |
| Travel speed                        | Maximum 160 m/min                                |
| Fixed ambient temperature           | -40 °C to +90 °C                                 |
| Fully flexible ambient temperature  | -25 °C to +90 °C                                 |
| Conductor operating temperature     | +90 °C                                           |
| Short-circuit conductor temperature | +250 °C                                          |
| Tensile load on conductor           | 30 N/mm <sup>2</sup>                             |
| Torsional stress                    | +/- 25 deg/m                                     |
| S-type directional-change distance  | 20 x D                                           |
| Bending radii                       | According to DIN VDE 0298 Part 3                 |

#### PERFORMANCE AND USE

| Parameter          | Value                                                                   |
|--------------------|-------------------------------------------------------------------------|
| Fire performance   | EN 60332-1-2 / IEC 60332-1-2                                            |
| Oil resistance     | EN 60811-404 / IEC 60811-404                                            |
| Weather resistance | Outdoor and indoor use; resistant to ozone, UV and moisture             |
| Applications       | Underground mining scoops / LHDs with frequently changing dynamic loads |
| Reel types         | Mono-spiral reels and cylindrical reels                                 |

## TECHNICAL DATA

| DIMENSIONS, MECHANICAL AND ELECTRICAL DATA |        |                           |               |               |                 |                         |
|--------------------------------------------|--------|---------------------------|---------------|---------------|-----------------|-------------------------|
| Size                                       | Colour | Conductor dia.<br>max. mm | OD min.<br>mm | OD max.<br>mm | Weight<br>kg/km | Tensile force<br>max. N |
| 4x16 (6kN)                                 | Orange | 5.8                       | 28            | 31            | 1450            | 1920                    |
| 4x16 (6kN)                                 | Yellow | 5.8                       | 28            | 31            | 1450            | 1920                    |
| 4x25 (6kN)                                 | Yellow | 7.3                       | 34            | 37            | 2260            | 3000                    |
| 4x35 (12kN)                                | Yellow | 8.4                       | 38            | 41            | 2930            | 4200                    |
| 4x50 (12kN)                                | Yellow | 10.3                      | 44.8          | 47.8          | 4000            | 6000                    |
| 4x50 (30kN)                                | Yellow | 10.3                      | 42            | 44            | 3660            | 6000                    |
| 4x70 (20kN)                                | Yellow | 12                        | 48.3          | 51.3          | 5050            | 8400                    |
| 4x95 (50kN)                                | Yellow | 14                        | 51            | 53            | 6030            | 11400                   |

Current-carrying capacity is based on rubber cables laid on a surface at 30 deg C ambient temperature according to VDE 0298-4, Table 15. Use relevant derating factors for other installation

| ELECTRICAL VALUES |                                  |                      |                     |              |                     |
|-------------------|----------------------------------|----------------------|---------------------|--------------|---------------------|
| Size              | Resistance at<br>20 deg C Ohm/km | Capacitance<br>uF/km | Inductance<br>mH/km | Current<br>A | Short circuit<br>kA |
| 4x16 (6kN)        | 1.24                             | 0.50                 | 0.30                | 99           | 2.29                |
| 4x16 (6kN)        | 1.24                             | 0.50                 | 0.30                | 99           | 2.29                |
| 4x25 (6kN)        | 0.795                            | 0.54                 | 0.29                | 131          | 3.58                |
| 4x35 (12kN)       | 0.565                            | 0.60                 | 0.28                | 162          | 5.01                |
| 4x50 (12kN)       | 0.393                            | 0.62                 | 0.27                | 202          | 7.15                |
| 4x50 (30kN)       | 0.393                            | 0.62                 | 0.27                | 202          | 7.15                |
| 4x70 (20kN)       | 0.277                            | 0.71                 | 0.26                | 250          | 10.01               |
| 4x95 (50kN)       | 0.210                            | 0.72                 | 0.26                | 301          | 13.59               |

Electrical values correspond to the listed cable constructions and conductor sizes.

# TECHNICAL DATA

## THERMAL AND MECHANICAL DATA

| Parameter                                    | Value                            |
|----------------------------------------------|----------------------------------|
| Conductor operating temperature              | 90 deg C                         |
| Short-circuit conductor temperature          | 250 deg C                        |
| Fixed installation ambient temperature       | -40 deg C to +90 deg C           |
| Fully flexible operation ambient temperature | -25 deg C to +90 deg C           |
| Max. tensile load on conductor               | 30 N/mm <sup>2</sup>             |
| Torsional stress                             | +/- 25 deg/m                     |
| Bending radii                                | According to DIN VDE 0298 Part 3 |
| Minimum S-type directional-change distance   | 20 x D                           |
| Travel speed                                 | Max. 160 m/min                   |

## STANDARDS AND TESTS

| Parameter          | Value                                                       |
|--------------------|-------------------------------------------------------------|
| Construction       | DIN VDE 0250-814                                            |
| Approvals          | MSHA P-189-3; TR-Certificate; EAC-Certificate               |
| Fire performance   | EN 60332-1-2 / IEC 60332-1-2                                |
| Oil resistance     | EN 60811-404 / IEC 60811-404                                |
| Weather resistance | Outdoor and indoor use; resistant to ozone, UV and moisture |
| Additional tests   | Reversed bending test; roller bending test                  |

## CERTIFICATIONS



TEBAOFLEX CABLE