HELUWIND® WK 135-TORSION

extremely abrasion-resistant

TECHNICAL DATA

Torsion resistant cable acc. to UL-Std. 758 (AWM) Style 10553, CSA-Std. C22.2 No. 210 - AWM I/II A/B

Temperature range	flexible -40°C to +90°C fixed -40°C to +90°C UL (AWM) flexible to +80°C
Permissible operating temperature of the conductor	+90°C
Nominal voltage	VDE AC U_0/U 600/1000 V UL (AWM) AC 1000 V
Max. permissible operating voltage	alternating current (AC) conductor/earth 700 V three-phase alternating current (AC) conductor/conductor 1200 V direct current (DC) conductor/earth 900 V direct current (DC) conductor/conductor 1800 V
Test voltage core/core	4000 V
Minimum bending radius	flexible 8x Outer-Ø fixed 4x Outer-Ø

CABLE STRUCTURE

- Copper wire bare acc. to DIN VDE 0295 / IEC 60228
- Core insulation: special compound
- Core identification: see table
- G = with protective conductor GN-YE, x = without protective conductor
- Outer sheath: special compound
- Sheath colour: see table

PROPERTIES

- resistant to: oil, UV radiation
- extremely abrasion-resistant, low adhesion
- Torsion tested
- halogen-free
- recyclable
- highly flame-retardant
- Suitable for use in multiple climates
- Designed for CCV applications
- Suitable for offshore applications
- Torsion angle: +/- 150°/m

TESTS

- halogen-free acc. to DIN VDE 0482-754-1 / DIN EN 60754-1 / IEC 60754-1
- flame-retardant acc. to CSA FT1
- bundle fire test acc. to DIN VDE 0482-332-3-24 / DIN EN 60332-3-24 / IEC 60332-3-24
- smoke density acc. to DIN VDE 0482-1034-1+2 / DIN EN 61034-1+2 / IEC 61034-1+2
- oil resistant in alignment with UL Oil Res II, IEC 60502-1

APPLICATION

Designed for flexible use, especially for torsional stress in the cable loop of a wind turbine. Thanks to its halogen-free design and extremely abrasion-resistant sheath, it is ideal for use in offshore wind turbines. The voltage level for all dimensions is designed for 0.6/1 kV. This means that the cable can also be laid in parallel in accordance with UL standards; spatial separation of the cable routes is not necessary. The HELUKABEL WK series has been successfully tested with over 18,000 torsion cycles and therefore offers optimum functional reliability far beyond the service life of a wind turbine. Advantages of the WK 135 torsion compared to H07BN4-F: Fire behaviour according to IEC 60332-3-24, higher abrasion resistance.

NOTES

- the conductor is metrically (mm²) constructed, AWG numbers are approximated, and are for reference only
- Further details, as well as information regarding custom solutions and suitable connection technology, can be found at wind@helukabel.de

Sheath color: black; Core identification: black

Part no.	No. cores x cross-sec. mm²	AWG, approx.	Outer Ø mm, approx.	Cu factor per km	Weight kg/km, approx.
707129	1 x 25	4	11.4	240.0	323.0
704741	1 x 35	2	12.9	336.0	437.0
708688	1 x 50	1	15.2	480.0	480.0
703317	1 x 70	2/0	17.7	672.0	880.0
703318	1 x 95	3/0	19.2	912.0	1096.0
703319	1 x 120	4/0	21.3	1152.0	1404.0

Part no.	No. cores x cross-sec. mm²	AWG, approx.	Outer Ø mm, approx.	Cu factor per km	Weight kg/km, approx.
703320	1 x 150	300 kcmil	24.7	1440.0	1844.0
703321	1 x 185	350 kcmil	25.7	1776.0	2125.0
703322	1 x 240	450 kcmil	30.2	2304.0	2744.0
703323	1 x 300	500 kcmil	32.8	2880.0	3500.0
704745	1 x 400	750 kcmil	39.3	3840.0	4500.0

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Sheath color: green-yellow; Core identification: green-yellow

Part no.	No. cores x cross-sec. mm²	AWG, approx.	Outer Ø mm, approx.	Cu factor per km	Weight kg/km, approx.
17007276	1 G 10	8	8.3	96.0	131.0
17007277	1 G 16	6	9.7	154.0	216.0
17007278	1 G 25	4	11.4	240.0	323.0
17007279	1 G 35	2	12.9	336.0	437.0
712568	1 G 50	1	15.2	480.0	620.5
17007280	1 G 70	2/0	17.7	672.0	880.0
17007281	1 G 95	3/0	19.2	912.0	1096.0

Part no.	No. cores x cross-sec. mm²	AWG, approx.	Outer Ø mm, approx.	Cu factor per km	Weight kg/km, approx.
17007282	1 G 120	4/0	21.3	1152.0	1404.0
17007283	1 G 150	300 kcmil	24.7	1440.0	1844.0
17007284	1 G 185	350 kcmil	25.7	1776.0	2125.0
17007285	1 G 240	450 kcmil	30.2	2304.0	2744.0
17007286	1 G 300	500 kcmil	32.8	2880.0	3517.0
17007287	1 G 400	750 kcmil	39.3	3840.0	4500.0