# TOPFLAT®
# H05VVH6-F & H07VVH6-F

**Flat cables for lifts, cranes, hoists and conveyor systems.**

ACCORDING TO: EN 50214


## APPLICATION

The Topflat® H05VVH6-F & H07VVH6-F is a flat cable specially designed for cranes, lifts, hoists, drum reeling and conveyor systems.
The hanging length of the cable can reach up to 35 m and its pull out speed can reach up to 1,6 m/s (overlaying cables is not recommended when installing).

- Industrial use.
- Mobile services.
- Bridge cranes.
- Lifts, elevators.
- Conveyors.

## CONSTRUCTION

**Conductor**
Electrolytic annealed copper, class 5 (flexible) according to EN 60228 and IEC 60228.

**Insulation**
Flexible PVC, type TI2, according to EN 50363-3.
The standard identification of insulated conductors according to HD 308 and EN 50334, is the following:

| | |
|---|---|
| 4 G | Brown + Black + Grey + Green/yellow |
| 6 or more | Black numbered + Green/yellow |

**Lay-up**
Insulated conductors are placed side by side in parallel arrangement forming a flat cable.

**Outer sheath**
Flexible PVC, type TM2 according to EN 50363-4-1.
Black colour.
The ripcord allows you to gently tear the outer sheath.

## CHARACTERISTICS

**Electrical performance**
Low voltage: 300/500 V - 450/750 V
Nominal voltage:
H05VVH6-F (up to 1 $mm^2$): 300/500 V.
H07VVH6-F (from 1,5 $mm^2$): 450/750 V.

**Thermal performance**
Maximum conductor temperature: 70°C.
Maximum short circuit temperature: 160°C (maximum 5 s).
Minimum operating temperature: 0°C (mobile service).

**Fire performance**
Flame non-propagation according to EN 60332-1 / IEC 60332-1.
Low halogen emission. Chlorine < 15%.

**Mechanical performance**
Minimum bending radius on pulleys (to 20 ± 10°C):
Festooned as in gantry cranes: 10x smaller dimension
Deflected by pulleys: 10x smaller dimension
Free movement: 5x smaller dimension
Impact resistance: AG2 Medium severity.

**Environmental performance**
Chemical & Oil resistance: Acceptable.
Water resistance: AD5 Jets.

## STANDARDS / COMPLIANCE

**According to:**
EN 50214

**Standards and approvals**
HAR / AENOR / CE/ RoHS

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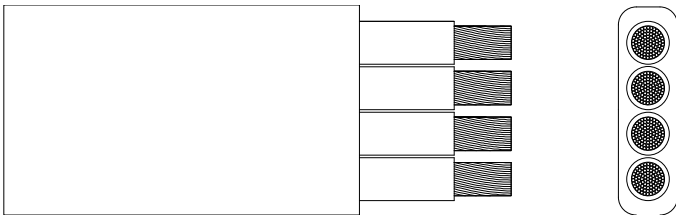
## DIMENSIONS & ADMISSIBLE INTENSITIES



TOPFLAT® H05VVH6-F

| Cross-section ($mm^2$) | Diameter (mm) | Weight (kg/km) | Open air (A) [1] | Voltage drop (V/A · km) [2] |
|---|---|---|---|---|
| 6 G 0,75 | 17 x 3,9 | 115 | 14 | 62,4 |
| 8 G 0,75 | 22 x 3,9 | 175 | 14 | 62,4 |
| 10 G 0,75 | 26 x 3,9 | 195 | 14 | 62,4 |
| 12 G 0,75 | 31 x 3,9 | 230 | 14 | 62,4 |
| 16 G 0,75 | 40 x 3,9 | 305 | 14 | 62,4 |
| 18 G 0,75 | 45 x 3,9 | 345 | 14 | 62,4 |
| 20 G 0,75 | 50 x 3,9 | 380 | 14 | 62,4 |
| 24 G 0,75 | 60 x 3,9 | 450 | 14 | 62,4 |
| 6 G 0,75 | 17 x 3,9 | 115 | 14 | 62,4 |
| 8 G 0,75 | 22 x 3,9 | 175 | 14 | 62,4 |
| 10 G 0,75 | 26 x 3,9 | 195 | 14 | 62,4 |
| 12 G 0,75 | 31 x 3,9 | 230 | 14 | 62,4 |
| *16 G 0,75 | 40 x 3,9 | 305 | 14 | 62,4 |
| 18 G 0,75 | 45 x 3,9 | 345 | 14 | 62,4 |
| 20 G 0,75 | 50 x 3,9 | 380 | 14 | 62,4 |
| 24 G 0,75 | 60 x 3,9 | 450 | 14 | 62,4 |
| 4 G 1 | 12 x 4,1 | 100 | 14 | 40,5 |
| 6 G 1 | 18 x 4,1 | 140 | 17 | 46,8 |
| 8 G 1 | 23 x 4,1 | 185 | 17 | 46,8 |
| 12 G 1 | 33 x 4,1 | 270 | 17 | 46,8 |
| 16 G 1 | 44 x 4,1 | 355 | 17 | 46,8 |
| 20 G 1 | 55 x 4,1 | 440 | 17 | 46,8 |
| 24 G 1 | 65 x 4,1 | 525 | 17 | 46,8 |

* These cables are not covered by the reference standard, so that their marks do not carry the letter H of the Harmonized.

[1] Reference method E for multicore cables according to IEC 60364-5-52. One vertical cable with adequate ventilation in open air at 30°C ambient temperature.
[2] At maximum service temperature and $\cos\varphi=1$.
For cables having 4 conductors are supposed a three-phase circuits.
For cables having 6 or more conductors are supposed a single-phase circuit where not all conductors are fully charged.

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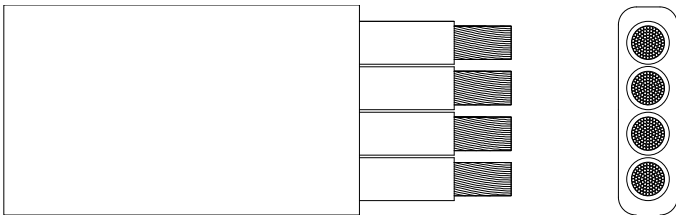
## DIMENSIONS & ADMISSIBLE INTENSITIES



TOPFLAT® H07VVH6-F

| Cross-section ($mm^2$) | Diameter (mm) | Weight (kg/km) | Open air (A) [1] | Voltage drop (V/A · km) [2] |
|---|---|---|---|---|
| 4 G 1,5 | 17 x 4,9 | 150 | 18,5 | 27,6 |
| 6 G 1,5 | 22 x 4,9 | 215 | 22 | 31,9 |
| 8 G 1,5 | 27 x 4,9 | 270 | 22 | 31,9 |
| 10 G 1,5 | 34 x 4,9 | 335 | 22 | 31,9 |
| 12 G 1,5 | 39 x 4,9 | 395 | 22 | 31,9 |
| *14 G 1,5 | 47 x 5,2 | 475 | 22 | 31,9 |
| *16 G 1,5 | 53 x 5,2 | 530 | 22 | 31,9 |
| 4 G 2,5 | 21 x 5,9 | 220 | 25 | 16,6 |
| 6 G 2,5 | 27 x 5,9 | 310 | 30 | 19,2 |
| 8 G 2,5 | 34 x 5,9 | 395 | 30 | 19,2 |
| 12 G 2,5 | 50 x 5,9 | 590 | 30 | 19,2 |
| 4 G 4 | 23 x 7,0 | 305 | 34 | 10,3 |
| 12 G 4 | 56 x 7,0 | 830 | 40 | 11,9 |
| 4 G 6 | 25 x 7,2 | 390 | 43 | 6,86 |
| 8 G 6 | 43 x 7,2 | 735 | 51 | 7,9 |
| 4 G 10 | 30 x 9,3 | 640 | 60 | 3,97 |
| 4 G 16 | 35 x 10,5 | 930 | 80 | 2,51 |
| 4 G 25 | 44 x 13,1 | 1.435 | 101 | 1,62 |
| *4 G 35 | 48 x 14,4 | 1.880 | 126 | 1,15 |
| *4 G 50 | 57 x 16,2 | 2.580 | 153 | 0,802 |
| *4 G 70 | 61 x 17,5 | 3.375 | 196 | 0,565 |
| *4 G 95 | 69 x 19,5 | 4.375 | 238 | 0,427 |

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## SHORT-CIRCUIT CURRENT-CARRYING CAPACITIES

| Time (s) | 0,1 | 0,2 | 0,3 | 0,5 | 1 | 1,5 | 2 | 2,5 | 3 |
|---|---|---|---|---|---|---|---|---|---|
| A/mm² | 364 | 257 | 210 | 163 | 115 | 94 | 81 | 73 | 66 |

## CORRECTION FACTORS FOR AIR TEMPERATURE

| Air T. (°C) | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
|---|---|---|---|---|---|---|---|---|---|
| Factor | 1,12 | 1,06 | 1 | 0,94 | 0,87 | 0,79 | 0,71 | 0,61 | 0,50 |

Other correction factors (for grouping cables, for harmonic currents), that are not in this specification, can be applied. Further information can be found in IEC 60364-5-52.