TOXFREE® ZH

ES05Z1-K (AS)/H05Z1-K (AS) & H07Z1-K(AS)

Flexible and halogen free power cable for electrical panel wiring.

ACCORDING TO: EN 50525-3-31

BASED ON: UNE 211002



B2ca

APPLICATION

Toxfree® ES05Z1-K (AS)/H05Z1-K & H07Z1-K (AS) Type 2 is a LSHF safety cable. In the event of fire, it does not emit toxic gases, nor does it give off corrosive gases, avoiding any possible damage to people or electronic equipment.
For these reasons it is highly recommended for use in public places such as: hospitals, schools, museums, airports, bus terminals, shopping malls, offices, laboratories, etc.

CONSTRUCTION

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

Insulation
Polyolefin, halogen free and low smoke under fire conditions, type TIZ1 according to UNE 211002 and type TI7 according to EN 50363-7.
The standard identification of insulated conductors is the following:

Blue	RAL 5015
Brown	RAL 8003
Black	RAL 9005
Red	RAL 3000
Green/Yellow	RAL 6018/1021
Grey	RAL 7000
Dark Blue	RAL 5010
White	RAL 9010

Other colors are available on request.

CHARACTERISTICS

Electrical performance
Low voltage: 300/500 V
450/750 V
Rated Voltage: ES05Z1-K/H05Z1-K (up to 1 mm^2): 300/500 V.
H07Z1-K (from 1,5 mm^2 onwards): 450/750 V.

Thermal performance
Maximum conductor temperature: 70°C.
Maximum short-circuit temperature: 160°C (max. 5 s).
Minimum service temperature: -40°C (fixed and protected installations).

Fire performance
Flame non-propagation according to EN 60332-1 / IEC 60332-1.
Fire non-propagation according to EN 60332-3 / IEC 60332-3 and EN 50399.
Reaction to fire CPR: B2ca-s1a, d1, a1 according to EN 50575.
Halogen free according to EN 60754-1 / IEC 60754-1.
Low corrosive gases emission according to EN 60754-2 / IEC 60754-2.
Low smoke emission according to EN 61034 / IEC 61034:
Light transmittance > 80%.

Mechanical performance
Minimum bending radius: 5x cable diameter.

Environmental performance
Chemical & Oil resistance: Acceptable.

STANDARDS / COMPLIANCE

According to
EN 50525-3-31
Based on
UNE 211002

Standards and approvals
HAR / AENOR / BUREAU VERITAS / RoHS / SEC / CE

CPR (Construction Products Regulation)
$B2_{ca}$-s1a, d1, a1

sales@topcable.com | www.topcable.com
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DIMENSIONS & ADMISSIBLE INTENSITIES



ES05Z1-K (AS) / H05Z1-K (AS) 300/500 V					
Cross-section (mm²)	**Diameter (mm)**	**Weight (Kg/km)**	**In conduit 2 cond. (A) [1]**	**In conduit 3 cond. (A) [1]**	**Voltage drop (V/A · km) [2]**
1 x 0,75	2,3	11	11	-	62,4
1 x 1	2,5	13	14	-	46,8

H07Z1-K (AS) 450/750 V					
Cross-section (mm²)	**Diameter (mm)**	**Weight (Kg/km)**	**In conduit 2 cond. (A) [1]**	**In conduit 3 cond. (A) [1]**	**Voltage drop (V/A · km) [2]**
1 x 1,5	2,9	20	17,5	15,5	31,9
1 x 2,5	3,6	30	24	21	19,2
1 x 4	4,1	45	32	28	11,9
1 x 6	4,7	65	41	36	7,92
1 x 10	6,0	110	57	50	4,58
1 x 16	7,0	160	76	68	2,90
1 x 25	8,8	250	101	89	1,87
1 x 35	9,9	340	125	110	1,33
1 x 50	11,8	480	151	134	0,926
1 x 70	13,5	660	192	171	0,653
1 x 95	15,6	875	232	207	0,494
1 x 120	17,0	1.100	269	239	0,386
1 x 150	18,9	1.375	300	262	0,310
1 x 185	21,5	1.680	341	296	0,254
1 x 240	24,5	2.205	400	346	0,192
1 x 300 *	26,9	2.695	458	394	0,153
1 x 400 *	31,2	3.260	545	470	0,116
1 x 500 *	34,7	4.550	626	540	0,0918

* 07Z1-K (these cables are outside of the range of the standard).

[1] Reference method B1 for two and three loaded conductors installed in conduit on a wall according to IEC60364-5-52 in open air at 30°C ambient temperature.
[2] At 70°C conductor temperature, cos φ= 1 and single-phase circuit.

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 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

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