

- Standards. Construction & tests: **EN 50525-3-31, UNE 211002.**
- Low voltage Directive: **2014/35/UE.**
- CPR Regulation (EU) n° 305/2011: Reaction to fire: **B2ca-s1a,d1,a1.**
- **AENOR <HAR>** certification.
- **RoHS** compliant.

## 1. TECHNICAL FEATURES

### Technical designation

H07Z1-K (AS) TYPE 2

### Rated voltage

450 / 750 V A.C. (Uo/U)

### Maximum admissible voltages (EN 50565-1):

Alternating current (A.C.)		Direct current (D.C.)	
Phase conductor and earth	Two phase conductors	Phase conductor and earth	Two phase conductors
480	825	620	1.240

### Maximum conductor temperature

- Normal Operation: 70 °C
- Short circuit (t≤5 s): 160 °C

### Voltage test

2,5 kV A.C

### Reaction to fire. Standards

- Declared performances:  
**B2ca-s1a, d1, a1** EN 50575:2014+A1:2016.
- Flame retardant  
EN 60332-1-2; IEC 60332-1 (H≤425 mm).
- Fire retardant  
EN 50399 (20,5 kW) → (Fs ≤ 1,5 m).
- Heat generation & FIGRA  
EN 50399 (20,5 kW): THR ≤ 15 MJ; Peak HRR ≤ 30 kW; FIGRA ≤ 150 W/s.
- Low production and opacity of emitted smokes:
  - **s1** (EN 50399): TSP ≤ 50 m<sup>2</sup> and Peak SPR ≤ 0,25 m<sup>2</sup>/s.
  - **s1a**: “s1” & transmittance ≥ 80 % (UNE-EN 61034-2; IEC 61034-2).
- Flaming droplets and/or particles
  - EN 50399 (20,5 kW)
  - **d1**: If no flaming droplets/particles persisting longer than 10 s occurs.
- Low acidity and conductivity of the emitted gases
  - EN 60754-2; IEC 60754-2.
  - **a1**: pH > 4,3; Conductivity < 2,5 µS/mm.
- System AVCP: 1+. Notified body: **0099 (AENOR S.A.U.).** DoP: **MB2H07Z1KTYPE2**
- Range: 1,5 / 2, 5 / 4 / 6 / 10 / 16 / 25 / 35 / 50 / 70 / 95 / 120 / 150 / 185 / 240 mm<sup>2</sup>

### Other fire performances (where CPR Regulation is not applicable):

- Fire retardant: EN 60332-3-24 / IEC 60332-3-24 (Cat. C).
- Halogen free: EN 60754-1 / IEC 60754-1 (HCl < 0,5 %; Fluor < 0,1 %)

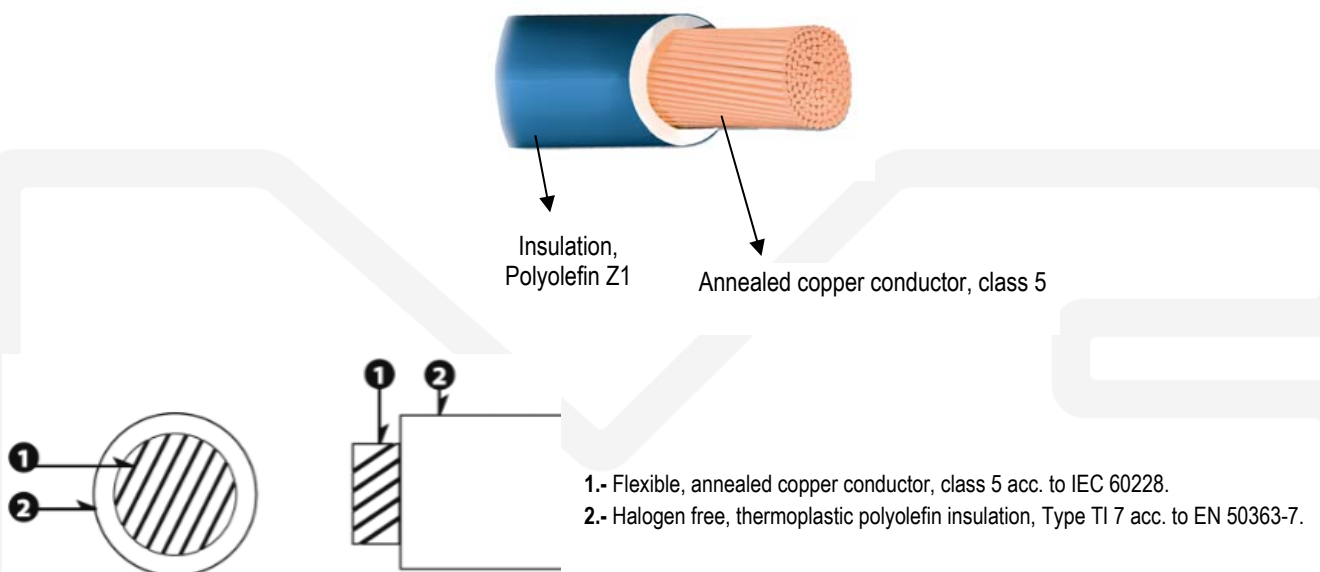
## 2. CABLE DESCRIPTION

### 2.1. Construction

Based on the European standard EN 50525-3-31 & Spanish standard UNE 211002.

- Conductor  
Flexible, annealed copper conductor, class 5 acc. to the International & Spanish standard IEC 60228; UNE-EN 60228.
- Insulation  
Halogen free, thermoplastic polyolefin insulation, Type TI 7 acc. to the European standard EN 50363-7.

### 2.2. Picture



### 2.3. Marking

$S = 1,5 \text{ a } 6 \text{ mm}^2$ :

AENOR <HAR> MIGUELEZ AFIRENAS-L H07Z1-K(AS) TYPE2 1xS<sub>mm2</sub> 0.45/0.75kV 70°C E-022-01-84795  
clase B2ca-s1a,d1,a1 EN 50575 MADE IN SPAIN

$S = 10 \text{ mm}^2$ :

AENOR <HAR> MIGUELEZ AFIRENAS-L H07Z1-K(AS) TYPE2 1xS<sub>mm2</sub> 0.45/0.75kV 70°C E-022-01-84795  
clase B2ca-s1a,d1,a1 EN 50575 MADE IN SPAIN **MM/YY**

$S \geq 16 \text{ mm}^2$ :

AENOR <HAR> MIGUELEZ AFIRENAS-L H07Z1-K(AS) TYPE2 1xS<sub>mm2</sub> 0.45/0.75kV 70°C  
clase B2ca-s1a,d1,a1 EN 50575 MADE IN SPAIN **MM/YY**

- **S**: Cross sectional area of core (mm<sup>2</sup>)
- **MM/YY**: Month and year of manufacturing.

The packaging labels (drums, coils...) of these cables include the CE marking according to the articles 8 and 9 of Construction Product Regulation (UE) n° 305/2011.

### 3. APPLICATIONS<sup>1</sup>

#### 3.1. Type of installation

Fixed

#### 3.2. User's guide

It is specially indicated for its use in public concurrence places (airports, museums, malls, hospitals, cinemas, schools...) and, in general, whenever an important fire risk exists or where it's required a low smoke emission and corrosive gases in case of fire. Its special fire performance protects public health, fireman works and avoids any possible damage to electronic equipment.

EN 50565-2:

*"Locations where a low level of emission of smoke and corrosive gases are required in case of fire or burning; installation in surface-mounted or embedded conduits, or similar closed systems.*

*Type 2 cables are for use where special fire performance is necessary, or where local conditions or regulations require increased levels of public safety. They are especially suitable where cables are installed in bunches.*

*Suitable for fixed protected installation in, lighting and control gear for voltages up to and including 1 000 V A.C. or up to 750 V D.C. to earth.*

*The defined tests for smoke and halogen free gases relates only to the cables, and not to cable and conduit together. These cables are not intended to provide circuit integrity in case of fire."*

#### 3.3. Suitable methods of installation

AFIRENAS-L H07Z1-K(AS) TYPE 2 must be installed in cable ducts (tube, conduit, cable ducting or similar closed systems).

AFIRENAS-L H07Z1-K(AS) TYPE 2 can be used as internal wiring for electrical apparatus in areas under normal temperatures<sup>2</sup>.

- Maximum storage temperature: +40 °C.
- Maximum installation and handling temperature: +5 °C.
- Minimum temperature: -15°C (permanently installed without mechanical exigencies, vibrations and movements)
- Minimum bending radii (in mm) at cable temperature of 20 °C +/- 10 °C:
  - 4xD (D ≤ 8 mm); 5xD (8 mm < D ≤ 12 mm); 6xD (D > 12 mm);
  - D= Overall diameter of the insulated conductor in mm.
- The tension applied to a cable shall not exceed the following values of tensile stress per conductor, subject to a total maximum tensile force of 1.000 N.
  - 50 N/ mm<sup>2</sup> (during installation)<sup>3</sup>
  - In circumstances where a stress exceeding these values would result, a separate stress-bearing member or device shall be used. The method of attaching such a member or device to the cable shall be such that the cable is not damaged.

Account shall be taken of the possibility of damage to cables and their supports due to the disruptive effects of the electromechanical forces caused by any current which the cables might have to carry in service, including short circuit currents.

<sup>1</sup> It must be respected the methods of installation established by the standards and regulations that will affect each individual case

<sup>2</sup> The maximum temperature for a conductor depends on the maximum temperature of the other cables or accessories around them.

<sup>3</sup> A mass of 1 kg is approximately equal to 10 N.

**4. DIMENSIONAL CHARACTERISTICS**

Code	Cross sectional area	Thickness insulation	Overall Diameter*	Total weight *	Maximum electrical resistance at 20°C (D.C)	Max. Allowable Current-carrying capacities 30°C (NOTE 1)	Max. Allowable Current-carrying capacities 30°C (NOTE 2)
	mm <sup>2</sup>	mm	mm	Kg/km	Ω/km	A	A
82040101-50	1x1,5	0,7	3,0	19	13,3	17,5	15,5
82040102-50	1x2,5	0,8	3,7	31	7,98	24	21
82040100040	1x4	0,8	4,2	45	4,95	32	28
82040100060	1x6	0,8	4,7	64	3,30	41	36
82040100100	1x10	1,0	6,0	108	1,91	57	50
82040100160	1x16	1,0	7,1	160	1,21	76	68
82040100250	1x25	1,2	8,7	248	0,780	101	89
82040100350	1x35	1,2	10,0	338	0,554	125	110
82040100500	1x50	1,4	11,8	482	0,386	151	134
82040100700	1x70	1,4	13,7	670	0,272	192	171
82040100950	1x95	1,6	15,7	901	0,206	232	207
82040101200	1x120	1,6	17,0	1.112	0,161	269	239
82040101500	1x150	1,8	19,2	1.387	0,129	300	262
82040101850	1x185	2,0	21,8	1.700	0,106	341	296
82040102400	1x240	2,2	24,4	2.248	0,0801	400	346

\*Values shown (overall diameter and weight) are approximate and subject to normal manufacturing tolerances

\*\* Product codes must be completed with the terminations corresponding to the colour code and presentation code.

**NOTE 1**

Installation method: **B1** (HD 60364-5-52 / IEC 60364-5-52).

Ambient temperature: 30°C in air.

Two loaded conductors.

**NOTE 2**

Installation method: **B1** (HD 60364-5-52 / IEC 60364-5-52).

Ambient temperature: 30°C in air.

Three loaded conductors.

**5. COLOURS**
Identification by colours.

The identification of the conductors is according to the European standards EN 50525-1.

Black (code 92), brown (code 91), gray (code 89), light blue (code 82) and yellow-green (code 86).

Other colours on request.