

Miguélez



electrical cables



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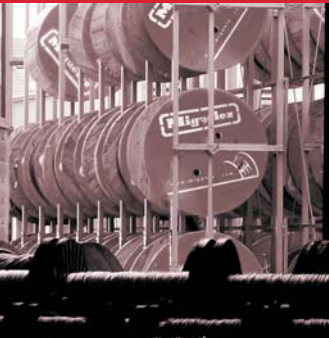


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1. Introduction

Miguélez is an industrial corporation established in 1951. Its main purpose is focused on a successful customer-manufacturer relationship, supported by human values such as fidelity and commitment.

Miguélez features and commercializes a wide range of cables providing:

Energy cables for industrial use, 0,6/1Kv with solid and flexible copper conductor under the trade name **Barrynax RV & Barryflex RV-K**.

Armoured cables such as **RVFAV/RVFV, RVMV, RVFAV-K/RVFV-K, RVMV-K, RZ1FAZ1-K/RZ1FZ1-K (AS), RZ1MZ1-K (AS)**.

Cables for domestic use with solid and flexible copper conductors under the trade name (**Barry H05V-U, Barry H07V-U, Barry H07V-R, Barryflex H05V-K, Barryflex H07V-K, Barryflex Man H05VV-F**, etc.).

Cables for indoor use and protected fixed installations, electrical equipments and fixed lighting(**Barry v2-u: H05V2-U, H07V2-U/R, y Barryflex v2-k: H05V2-K, H07V2-K**) *also made with silicon* (**Termosil, Termoflex, Termoflex SS, & Termoflex Man**) .

Cables for control, signposting, signalling
(**Barryflex VV-K, Barryflex oil H05VV5-F, Barryflex Múltiple ES05VV-F**).

Fire Performance cables (AS) Halogen-free Z1 type, under the trade name **AFIRENAS**(**Afirenas-L ES07Z1-K(AS), Afirenas-X RZ1K(AS) 0,6/1 kV y Afirenas CC-Z H07Z-R, AfirenasCC-Z1 ES07Z1-R(AS), Afirenas Ar-Fleje RZ1FAZ1-K/RZ1FZ1-K (AS), Afirenas Ar-Corona RZ1MZ1-K (AS), Afirenas Múltiple RZ1-K(AS), Afirenas man H05Z1Z1-F, Afirefácil(AS)**).

Fire Performance cables (AS+), fire resistant **Afirefénix SZ1-K (AS+) & Afirefenix Man (AS+)**.

RZ cables, insulated copper conductors, wired up with 0,6/1 kv voltage for **distribution lines, connections and analogous use**.

Bare copper for aerial and land network under the trade name **Terranax**.

2. Ongoing Growth

Miguélez manufacturing plant extends a 51.000 m² surface including 7000 m² of computerized stores and 9000 m² in peripheral warehouses.

The human team is based on 40 graduated qualified personnel, 40 administrative staff and sales representatives, and 270 technical and specialized employees.

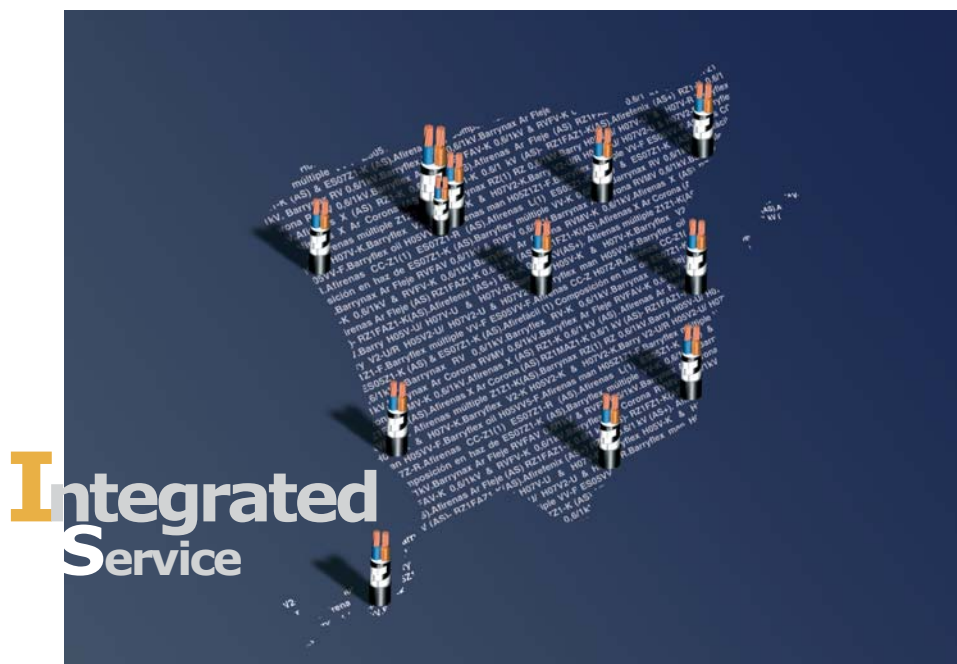
Miguélez industry serves an extensive productivity focused on satisfy our customers' needs.

All our wide cables range is identified by a **bar code EAN 13** with an integrated service resultant of the system optimization.

3. Integrated Service

Our searching of excellence on customer service is supported by a relevant implantation of a personalized distribution system, which clearly shorten the delivery time of our products providing the optimization of our stocks.

Miguélez operates a complete logistical network all around Spain, Portugal and the Canary Islands working as indoor customers, advancing any orders and manufacturing all the cables range until the delivery time. No place in Spain or Portugal is two hours far from our distribution points.



Integrated
Service

Miguélez benefits from online technology resources enabling the company to know on real time the detailed stocks in any of our warehouses: central or peripheral distribution.

We develop more than 40.5 million of meters of complete cables, distributed on more than 1200 references.

In short, we easily point that our **integrated service** achieves to provide our customers the broadest range of electrical cables available in southern Europe, and we may clearly define it as a real:



JUST IN TIME: the best advantage for our customers



4. *Quality*

Our main target and commitment are directed towards the achievement of **TOTAL QUALITY** in our manufacturing processes.


In addition we definitely consider our customer as the final referee to value the product service and quality.

Our company is certified by the Company Registration Certificate (ER) ISO 2002 since 1995.

AENOR (Spanish Association of Certification and Normalization), member of the International Certification Network (**IQNET**) is the organism adopted by Miguélez as close partner to achievement our commitments of quality.



Miguélez cables range has been accredited by the following certification boards:
AENOR and AENOR HAR, according to UNE standards.

Miguélez		AENOR Product Certification		
UNE 21123	P1	VV-K		
	P2	RV-K, RV, RVFV, RVFAV, RVMV		
	P4	RZ1-K		
IEC 60502-1		VV		
UNE-EN 60228 / EN 60228 IEC 60228		TERRANAX		
UNE 2110022		ES07Z1-K		

Miguélez		AENOR ◀ HAR ▶ Product Certification	
UNE 21031	H07V-U, H07V-R H07V-K, H05VV-F		
UNE 21027	H07Z-R		

Thereby Miguélez is considered as the electrical cables leader manufacturer for low voltage with the broadest number of certified products. Our quality has been gained by prestigious companies and institutions whose quality systems require the fulfilment of the standards:

RENFE, IBERDROLA, ETC...

In the European community we have been approved by French Institution Certification LCIE.

5. *R+D+i*

Miguélez Research and Development department is in constantly investment to build on its customers specific requirements.

We focus our efforts on the achievement of two targets:

1. Responding to the wishes and requirements of customers , and adapting them to the UNE standards and the Electro-Technical Regulation (LV)
2. Developing a broad new products brand with mechanical and insulation characteristics by improving the quality and security in installations and respecting our environmental policy.

In addition, we have Chemical, Fire and Material test laboratories, where a large number of qualified staff works in close co-operation between other departments such as suppliers, customers and standard institutions.



6. *Training*

Our company works through a continuous effort to achieve a high level of profitability and performance, managing and sharing the knowledge within a general culture of learning, ongoing innovation and improvements.

In this particular case, we should remark the implantation of a strategic programme of vocational training annually supervised by the **FORCEM** (Tripartite Entity for the Vocational Training Management)

These training programmes encourage employees to improve their personnel needs on professional growth and internal promotion. This strategy represents the best guarantee for the achievement of our purposes: **A perfect balance between management efficiency and human resources development.**



7. *Occupational Risks Prevention Programme*

Miguélez supports, since 1999, a modern Occupational Risks Prevention programme, periodically approved by the competent Labour Public Administration.

As a result of this application, our company has registered a reduction of 27% of the sinesterness, and better conditions in the professional relationships, existing values and a culture of confidence and assumption of responsibilities in order to achieve a close involvement.



8. *Society Commitment*

Business excellence depends on the needs satisfaction of all the excellent groups of interest of our organization. They are all relevant: human resources, customers, suppliers, associations, groupings and the society as a whole.

Miguélez participates actively in social programmes and in research projects through its belonging to institutions such as:

- **FACEL** (Spanish Association of manufacturers of insulated electrical conductors and optical fiber)

Member since 1983

Member of Board Direction

Member of the Technical Commission for Energy Cables

Member of Committee: Fire and Materials

Member of Committee: Cables with assigned voltage 0,6/1kv

Vocal member of Environmental Average Committee

Member of Quality-Marketing Committee

- **FUELE** (Companies-University Foundation) Sponsor member

- **EQUAL PROGRAM**: member of board direction of the grouping of municipal development leading the EQUAL programme for the social integration of women in job scope.

- **AENOR** (Spanish Association for the Normalization and Certification). Member of the technical committee of certification 042. Member of AEN/CTN 211 "Electrical Energy Cables"

Committee SC 20 A 'Electrical cables of use by electrical companies'

Committee SC 20 B 'Electrical cables of industrial use'



9. Environment



Aware of the necessity of a sustainable development, Miguélez starts up a continuous improvement of its environmental policy. These are shaped in the establishment of a **SGMA** (System of environmental Average Management) according to **ISO 14001** standards

Our environmental commitment is not limited to the management of the industrial remains but also the substitutions of other manufacturing systems, products and containers to other processes more respectful with environment.

Fire performance **(AS)** Halogen-Free **(AFIRENAS) Z1 type** is the best proof. The special characteristics of their insulation provides unquestionable properties for the people security and its surroundings

Miguélez successes to replace the classic cardboard packing by other recyclable packages more resistant, practical and with celluloses of vegetal origin free.

This improvement, pioneer in our country, has been very well valued by our customers. This solution places us as the company leader in environmental policy.

In addition Miguélez takes play in national initiatives of the electrical sector in collaboration with the Environmental Committee of **FACEL**.



10. Trademark



Miguélez owns the following registered trademarks for its use in the Spanish and Portuguese markets.

terranax barryflex afirenas afirefénix
barry barrynax afirefácil
termosil termoflex



11. Activities



4° Logroño Bridge (Logroño,La Rioja)
Aena. New Airport Terminal. Madrid-Barajas
Aena. Sabadell Airport (Barcelona)
Lightning P.I. Rubí
Extension and reform: Leon Hospital
Extension and reform: Las Palmas Hospital
Shipyards of Arenys de Marê (Barcelona)
Alfredo Kraus Auditorium - Las Palmas de Gran Canaria
Caja Duero Auditorium (Salamanca)
León Auditorium
Lleida Library(Lleida)
Wine Warehouse Cooperative Society of Borja (Zaragoza)
Wine Warehouse AGE Fuenmayor (La Rioja)
Wine Warehouse Herederos Marqués de Riscal. El Ciego (Alava)
Wine Warehouse Blancos de Castilla . Rueda (Valladolid)
Camp Nou Stadium (Barcelona)
Camping La Toredera (Girona)
Camping Rimbau (Platja d'Aro -Girona)
Golf Club de la Guajera. (Logroño)
León Cathedral
Alcampo Mall (Logroño)
Alcampo Mall (Sant Boi-Barcelona)
Carrefour Mall (Oviedo)
La Maquinista Mall (Barcelona)
International Center of Merchandise (CIM Valles)(Barcelona)
Postgrade Center Salamanca University
High Velocity Track Chestre de Valencia
City of Sciences and Arts of Valencia
Teknon Clinic(Barcelona)
Corte Inglés Alcorcón
Corte Inglés Arroyomolinos
Corte Inglés Avilés
Corte Inglés Badajoz
Corte Inglés Cadiz
Corte Inglés - Alcalá de Henares
Corte Inglés - Linares
Corte Inglés - Santander
Corte Inglés Guadalajara
Corte Inglés Las Glorías - Barcelona
Corte Inglés Las Salesas (Oviedo)
Corte Inglés León
Corte Inglés Pozuelo
Corte Inglés San Chinarro
Road N-II Variante de Cervera (Lleida)
Cardedeu water purifier (Barcelona)
Torroella de Montgri water purifier (Girona)
Besos water purifier (Barcelona)
Llobregat water purifier
León Delegation
Spanish TV Building - Logroño
Gestores de Proyectos Multimedia Company

Madrid Subway Stations
Water Purifiers - Las Palmas de Gran Canaria
Benfica Stadium- Eurocopa 2004 (Lisboa)
Fair of Valencia
Golf Club el Prat (Barcelona)
Clinic Hospital (Barcelona)
Mérida Hospital
Palamos Hospital (Girona)
Monte Príncipe de Madrid Hospital
San Juan de Dios Hospital (Almacelles -Lleida)
San Juan de Dios Hospital (Barcelona)
Hotel AC La Rioja
Hotel Caribe (Port Aventura)(Tarragona)
Hotel Diagonal (Barcelona)
Hotel Illa de Cel (Barcelona)
Hotel Marinaê (Barcelona)
Hotel Vega Real (Salamanca).
Capuchinos Institute Salamanca
Mecalux S.A. (Barcelona)
MUSAC - Contemporary Art Museum - León
New Manufacturing Plant Danone - Castellón
New Soccer Stadium - Gran Canaria
AVE (High Velocity Train-system) work sites
Parador Nacional de Salamanca
El Prat Airport Parking - Barcelona
Port Aventura Amusement Park Installations
Terra Mítica Amusement Park Installations
Port Aventura (Tarragona)
Psychiatric Hospital - Valencia
Bidasoa Fair
Calatrava Seminary(Salamanca)
Fecsa-Endesa Substation (Rubí -Barcelona)
LIDL Supermarket (Montcada- Barcelona)
Social Security General Treasury (Granollers- Barcelona)
Control Tower - Logroño Airport
Transport metropolitans de Barcelona -TMB-
Bilbao Tunnel. (Instaladora Llorente - Santander).
Julio Luengo Tunnel - Las Palmas de Gran Canaria
Mieres – Oviedo Highway Tunnels
Cantábrico Highway Tunnels. (Instaladora Llorente - Santander)
Estepona Tunnels
Cadí Tunnels (Andorra)
Guadarrama Tunnels
Urbanización Corralejo (Fuerteventura)





CABLES OF ASSIGNED VOLTAGE UP TO 750 V. :

In this chapter we present cables of assigned voltage up to 750 V.

As follows:

A.- Harmonised Cables - **UNE 21031** standard: cables of low or equal assigned voltage of 450/750 V, with thermoplastic isolation.

-For fixed installation:

BARRY	H05V-U/ H07V-U & H07V-R.
BARRYFLEX	H05V-K & H07V-K.
BARRY V2-U/R	H05V2-U/ H07V2-U & H07V2-R.
BARRYFLEX V2-K	H05V2-K & H07V2-K.

-For mobile installation:

BARRYFLEX MAN	H05VV-F.
BARRYFLEX OIL	H05VV5-F.
AFIRENAS MAN	H05Z1Z1-F.

B.- Harmonised cables - **UNE 21027**. Cables of low or equal assigned voltage of 450/750 V, with cross-linked isolation.

TERMOSIL	H05S-U.
TERMOFLEX S	H05S-K.
TERMOFLEX SS	H05SS-K.
TERMOFLEX MAN	H05SS-F.

C.- Harmonised cables - **UNE 21031-5 1 c.** standard:

BARRYFLEX MÚLTIPLE VV-F	ES05VV-F.
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D.- Harmonised cables- **UNE 21027** standard: insulated cables with rubber of inferior or equal rating voltage of 450/750 V:

AFIRENAS CC-Z	H07Z-R.
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E.- **UNE 211002** standard cables:

AFIRENAS CC-Z1 (1).....	ES07Z1-R (AS).
AFIRENAS L (1).....	ES05Z1-K (AS) & ES07Z1-K (AS).
AFIREFÁCIL (1).....	Composición en haz de ES07Z1-K (AS).

F.- **EA 025** standard cables:

AFIREFENIX MAN(AS+)	SZ1-K(AS+) PH90(300/500 V).
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Definition

Technical definitionH05V-U, H07V-U & H07V-R

Voltage rating:

H05V-U.....300/500 V.
 H07V-U.....450/750 V.
 H07V-R.....450/750 V.



Max. operative service:

operating.....70° C
 short circuit(5 s.).....160° C



Test voltage:

H05V-U-----2000 V. (15 min.)
 H07V-U-----2500 V. (15 min.)
 H07V-R-----2500 V. (15 min.)

Constructive description: according to UNE 21031- 3:

1 Solid electrolytic copper conductor class 1 (H05V-U & H07V-U) and class 2 (H07V-R), according to UNE-EN 60228/ EN 60228 /IEC 60228.

2 PVC insulation type TI 1 according to UNE 21031-1.

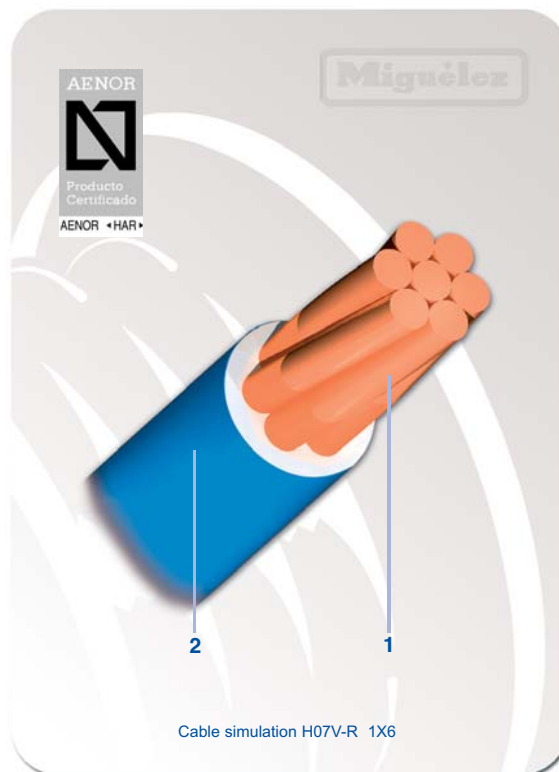
These cables are always single core



Rank of temperatures of storage, transport and handling:

Minimum T.°C: +5 Maximum T. °C: +40 (1)

(1) Exposed to the sun, the surface temperature of the cable can exceed the value given, but limited to a maximum of 60°C.



Cable simulation H07V-R 1X6

Applications

Installation type: FIXED

Users Guide:

H07V-U / H07V-R en "facilities in conducts, located on surfaces or embedded, or in closed systems analogous." Also recommended for fixed or protected light assembly, control, for voltages until 1000V in alternating current (or until 750V in DC). (UNE 21176).

H05V-U in "rigid installation protected inside systems and to, or on, fixed lights. They are adapted for facilities made in conducts placed superficially or embedded, only in the case of signal wirings or control." (UNE 21176). This is specially indicated for inner installations, since its high index of sliding facilitates its positioning under an embedded tube.

Suitable methods of installation:

H05V-U: In canals closed only in signal wirings and control. In internal wiring of equipment and electrical mechanisms in zones of normal temperature.

H07V-U: In closed and tubular tubes, canals. In internal wiring of equipment and electrical mechanisms in zones of normal temperature.

H07V-R: In closed and tubular tubes, canals. In internal wiring of equipment and electrical mechanisms in zones of normal temperature.

The Maximum temperature of the conductor to whom a cable in individual can work, depends on the temperature limit of other cables and accessories that are in contact with.

Functional characteristics

A) Extra-sliding:

The special composition of the isolation in cables BARRY H05/07 V-U, R, guarantees an optimal sliding, reducing the time of installation.



B) Non flame propagation test:

The isolation composition of PVC type TI 1, guarantees non-propagation of the flame according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



300 V-750 V



H05V-U, H07V-U & H07V-R



Dimensional characteristics and colours

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C	Colour available
	mm ²	mm	mm	Kg/km	Ohm/km	
H05V-U						
83243	1x1	2,3	0,6	13,7	18,1	
H07V-U						
83244	1x1,5	2,8	0,7	19,5	12,1	
83245	1x2,5	3,4	0,8	29,8	7,41	
83246	1x4	3,8	0,8	46,1	4,61	
H07V-R						
83247	1x6	4,6	0,8	66,4	3,03	
83248	1x10	5,8	1,0	113,0	1,83	
83249	1x16	6,9	1,0	170,0	1,15	
83250	1x25	8,6	1,2	268,0	0,727	
83251	1x35	9,6	1,2	369,0	0,524	
83252	1x50	11,1	1,4	484,0	0,387	
83253	1x70	12,6	1,4	660,0	0,268	
83254	1x95	14,7	1,6	934,0	0,193	

Available references of permanent stock and **Integrated Service** net

Presentation

boxes, packages and standard pallet sizes

Cable type	Nominal cross-section	M.Pallet	m./coils	m./packages
BARRY H05V-U	1x1	45.000	200	1000m
BARRY H07V-U	1x1,5	30.000	200	1000m
BARRY H07V-U	1x1,5	15.000	100	500m
BARRY H07V-U	1x2,5	27.000	200	600m
BARRY H07V-U	1x2,5	15.000	100	500m
BARRY H07V-U	1x4	18.000	100	400m
BARRY H07V-R	1x6	13.500	100	300m
BARRY H07V-R	1x10	7.200	100	100m
BARRY H07V-R	1x16	7.200	100	100m
BARRY H07V-R	1x25	4.200	100	100m
BARRY H07V-R	1x35	4.200	100	100m

PVC 70°C

300-750 V

barryflex

H05V-K & H07V-K

Definition

Technical definition:H05V-K, H07V-K

Voltage rating:

H05V-K.....3.00/500 V.
H07V-K.....450/750 V.



Max. operative temperature:

operating.....70°C
short-circuit (5 s.)..... 160°C



Tensión de ensayo: H05V-K-----2000 V. (15 min.)
H07V-K-----2500 V. (15 min.)

Constructive description:

 according to UNE 21031- 3:

1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228.

2 PVC insulation type TI 1 according to UNE 21031-1.

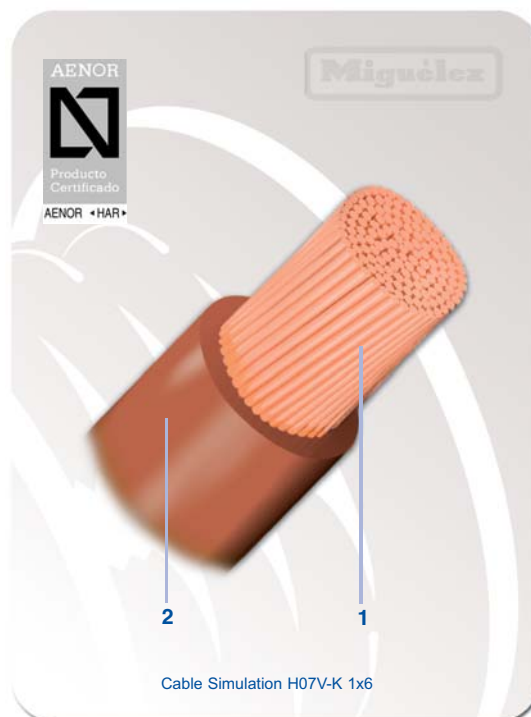
These cables are always single-core.



Rank of temperatures of storage, transport and handling:

T. minimum °C: +5 *T. maximum* °C: +40 (1)

(1) Exposed to the sun, the temperature of the surface of the cable can exceed the value given, but limited to a maximum of 60°C.



Cable Simulation H07V-K 1x6

Applications

Installation type:FIXED

Guía de utilización:

H07V-K en "facilities in conducts, located on surfaces or embedded, or in closed systems analogous."

Also recommended for fixed or protected light assembly, control, for voltages until 1000V in alternating current (or until 750V in DC)." (UNE 21176).

H05V-K in "rigid installation protected inside systems and to, or on, fixed lights. They are adapted for facilities made in conducts placed superficially or embedded, only in the case of signal wirings or control." (UNE 21176). This is specially indicated for inner installations, since its high index of sliding facilitates its positioning under an embedded tube.

Suitable methods of installation:

H05V-K: In tubes closed only in signal wirings and control.

In internal wiring of equipment and electrical mechanisms in zones with normal temperature.

H07V-K: In closed and tubular tubes, canals. In internal wiring of equipment and electrical mechanisms in zones with normal temp.

The highest temperatures of the conductor to whom a cable in individual can work, depends on the limit temperatures of other cables & accessories are in contact with.

Functional Characteristics

A) Non flame propagation test:

The composition of the isolation of PVC type TI 1, guarantees non flame propagation according to standard requirement:

UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1.

B) Extra-sliding:

Optimum sliding characteristics.It guarantees an optimal sliding, reducing the time of installation.

C) Flexibility:

The use of flexible copper conductor forming a rope yarn of several very fine threads in combination with the isolation equips these cables with exceptional degrees of flexibility.



300 V-750 V



H05V-K & H07V-K



Dimensional characteristics and colours

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C	Colours available
	mm ²	mm	mm	Kg/km	Ohm/km	
H05V-K						
80233	1x0.50	2,1	0,6	9,3	39	
80234	1x0.75	2,3	0,6	11,6	26	
80272	1x1	2,4	0,6	14,3	19,5	
H07V-K						
80273	1x1.5	2,9	0,7	19,5	13,3	
80274	1x2.5	3,6	0,8	30,8	7,98	
80275	1x4	4,2	0,8	45,7	4,95	
80276	1x6	4,7	0,8	65,0	3,3	
80277	1x10	6,2	1,0	111,0	1,91	
80278	1x16	7,3	1,0	173,0	1,21	
80279	1x25	9,3	1,2	261,0	0,78	
80280	1x35	10,4	1,2	354,0	0,554	
80281	1x50	12,0	1,4	498,0	0,386	
80282	1x70	14,2	1,4	682,0	0,272	
80283	1x95	15,7	1,6	897,0	0,206	

Available references of permanent stock and **Integrated Service** net

Presentation

Boxes, packages and standard pallet sizes

Cable type	Nominal section	M. pallet	m./coils	m./packages
BARRYFLEX H05V-K	1x0,50	45.000	200	1000m
BARRYFLEX H05V-K	1x0,75	45.000	200	1000m
BARRYFLEX H05V-K	1x1	45.000	200	1000m
BARRYFLEX H07V-K	1x1,5	30.000	200	1000m
BARRYFLEX H07V-K	1x2,5	18.000	200	600m
BARRYFLEX H07V-K	1x4	18.000	100	400m
BARRYFLEX H07V-K	1x6	13.500	100	300m
BARRYFLEX H07V-K	1x10	7.200	100	100m
BARRYFLEX H07V-K	1x16	7.200	100	100m
BARRYFLEX H07V-K	1x25	4.200	100	100m
BARRYFLEX H07V-K	1x35	3.600	100	100m

PVC 70°C

300-750 V

barry V2-U/R

H05V2-U & H07V2-U & H07V2-R

Definition

Technical definitionH05V2-U, H07V2-U, H07V2-R

Voltage rating:

H05V2-U.....300/500 V.
H07V2-U/R.....450/750 V.



Max. operative temperature:

operating service.....90°C
short-circuit (5 s.)160°C



Voltage test:

H05V2-U----- 2000 V. (15 min.)
H07V2-U/R----- 2500 V. (15 min.)

Constructive description: according to UNE 21031- 7:

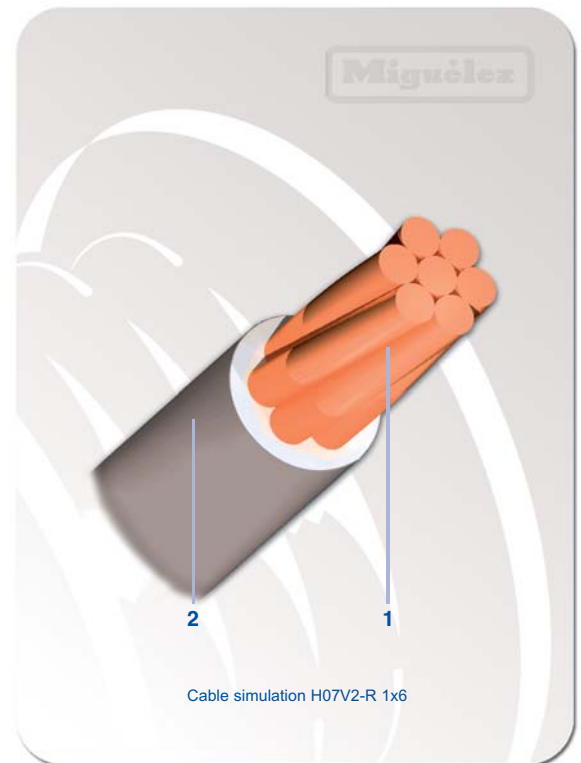
- 1 Solid electrolytic copper conductor class 1 (H05V2-U/ H07V2-U) & class 2 (H07V2-R). according to UNE-EN 60228/ EN 60228 /IEC 60228.
- 2 PVC insulation type TI 3 according to UNE 21031-1.
These cables are always single-core.



Rank of temperatures of storage, transport and handling:

T. minimum °C: +5 T. maximum °C: +40 (1)

(1) Exposed to the sun, the surface temperature of the cable can exceed the value given, but limited to a maximum of 60°C.



Applications

Installation type:FIXED

Users Guide:

H05V2-U: "use for internal wiring and installation fixes protected inside electrical equipment and in fixed lights. The highest temperature of the conductor in normal use is 90°C, do not use in contact with objects when exceeding 85°C".(UNE 21176). Not recommended for fixed installations in distribution systems, except(only in chapter 3, when temperature has to be 70°C).

H07V2-U/R: "recommended for fixed or protected light assembly, control, for voltages until 1000 V in alternating current".

Suitable methods of installation:

H05V-U: In tubes closed only in signal wirings and control.

In internal wiring of equipment and electrical mechanisms in zones of normal temperature.

H07V-U/R: In closed and tubular tubes, canals. In internal wiring of equipment and electrical mechanisms in zones of normal temperature. The maximum temperature of the conductor, depends on the temperature limits of other cables and accessories which are in contact with.

Functional characteristics

A) Non flame propagation test:

The composition of the isolation of PVC type TI3, guarantees non-flame propagation according to standard requirements: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1.

















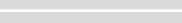



B) Extra-Sliding:

Optimum sliding characteristic. Guarantees an optimal sliding, reducing the time of installation.





Dimensional characteristics and colours

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C	Colour available
						
	mm ²	mm	mm	Kg/km	Ohm/km	
H05V2-U						
81611	1x0,5	2,1	0,6	9,3	36	
81612	1x0,75	2,3	0,6	11,6	24,5	
81613	1x1	2,4	0,6	14,3	18,1	
H07V2-U / H07V2-R						
81614	1x1,5	2,9	0,7	19,5	12,1	
81615	1x2,5	3,6	0,8	30,8	7,41	
81616	1x4	4,2	0,8	45,7	4,61	
81617	1x6	4,7	0,8	65,0	3,08	
81618	1x10	6,2	1,0	111,0	1,83	
81619	1x16	7,3	1	173,0	1,15	
81620	1x25	9,3	1,2	261,0	0,727	
81621	1x35	10,4	1,2	354,0	0,524	

Presentation

Boxes, packages and standard pallet sizes

cable type	Nominal section	M. pallet	m./coils	m./packages
BARRYFLEX H05V2-U	1x1	45.000	200	1000m
BARRYFLEX H07V2-U	1x1,5	30.000	200	1000m
BARRYFLEX H07V2-U	1x2,5	27.000	200	600m
BARRYFLEX H07V2-U	1x4	18.000	100	400m
BARRYFLEX H07V2-R	1x6	13.500	100	300m
BARRYFLEX H07V2-R	1x10	7.200	100	100m
BARRYFLEX H07V2-R	1x16	7.200	100	100m
BARRYFLEX H07V2-R	1x25	4.200	100	100m
BARRYFLEX H05V2-R	1x35	3.600	100	100m

barryflex V2-K

H05V2-K & H07V2-K

Definition

Technical definitionH05V2-K, H07V2-K

Voltage rating:

H05V2-K.....300/500 V.
H07V2-K.....450/750 V.



Max. operating temperature:

operating service.....**90°C**
short -circuit (5 s.).....160°C



Voltage test:

H05V2-K-----2000 V. (15 min.)
H07V2-K-----2500 V. (15 min.)

Constructive description: according to UNE 21031- 7:

- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228.
- 2 PVC insulation type TI 3 according to UNE 21031-1.

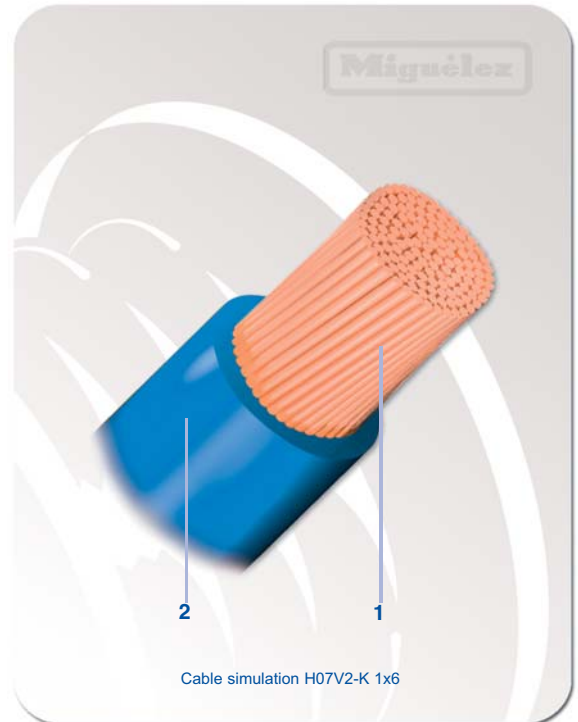
These cables are always single-core.



Rank of temperatures of storage, transport and handling:

T. minimum °C: +5 T. maximum °C: +40 (1)

(1) Exposed to the sun, the surface temperature of the cable can exceed the value given, but limited to a maximum of 60°C.



Applications

Installation type:FIXED

Users Guide:

H05V2-K: "use for internal wiring and fixed installation protected inside electrical equipment and in fixed lights. Because of the highest temperature in normal conditions is 90°C, do not use in contact with objects when exceeding 85°C".(UNE 21176). Not recommended for fixed installations in distributing systems, except (only in chapter 3), when temperature has to be 70°C.

H07V2-K: "Recommended for rigid or protected light assembly, control,...for voltage until 1000 V in alternating current". Or until 750V in DC. (UNE 21176)

Suitable methods of installation:

H05V2-K: In tubes closed only in signal wirings and control.

In internal wiring of equipment and electrical mechanisms in zones of normal temperature.

H07V2-K: In closed and tubular tubes, canals. In internal wiring of equipment and electrical mechanisms in zones of normal temperature.

The highest temperature of the conductor to whom a cable in individual can work, depends on the limit temperature of other cables and accessories that are in contact with.

Functional Characteristics

A) Non flame propagation test:

The composition of PVC isolation type TI 3, guarantees non flame propagation according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



B) Extra-sliding:

Optimum sliding characteristics. Guarantees an optimal sliding, reducing the time of installation.























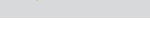
C) Flexibility:

The use of flexible copper conductors forming a rope yarn of some very fine threads in combination with the isolation equips these cables with exceptional degrees of flexibility.





Dimensional characteristics and colours

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C	Colour available
						
	mm ²	mm	mm	Kg/km	Ohm/km	
H05V2-K						
81560	1x0,5	2,1	0,6	9,3	39,0	
81561	1x0,75	2,3	0,6	11,6	26,0	
81562	1x1	2,4	0,6	14,3	19,5	
H07V2-K						
81563	1x1,5	2,9	0,7	19,5	13,3	
81564	1x2,5	3,6	0,8	30,8	7,98	
81565	1x4	4,2	0,8	45,7	4,95	
81566	1x6	4,7	0,8	65,0	3,30	
81567	1x10	6,2	1,0	111,0	1,91	
81568	1x16	7,3	1	173,0	1,21	
81569	1x25	9,3	1,2	261,0	0,780	
81570	1x35	10,4	1,2	354,0	0,554	
81571	1x50	13,9	1,4	498	0,386	
81572	1x70	16	1,4	682	0,272	
81573	1x95	18,2	1,6	897	0,206	

Presentation

Boxes, packages and standard pallet sizes

cable type	Nominal section	M. pallet	m./coils	m./packages
BARRYFLEX H05V2-K	1x1,5	30.000	200	1000m
BARRYFLEX H05V2-K	1x2,5	18.000	200	600m
BARRYFLEX H05V2-K	1x4	18.000	100	400m
BARRYFLEX H05V2-K	1x6	13.500	100	300m
BARRYFLEX H05V2-K	1x10	7.200	100	100m
BARRYFLEX H05V2-K	1x16	7.200	100	100m
BARRYFLEX H05V2-K	1x25	4.200	100	100m
BARRYFLEX H05V2-K	1x35	3.600	100	100m

barryflex man

H05VV-F

Definition

Technical definition: H05VV-F

Voltage rating: 300/500 V



Max. operative temperature:

operating service:60°C
short-circuit (5 s.):150°C



Voltage test: H05VV-F-----2000 V (5 min.)

Constructive description: according to UNE 21031- 5:

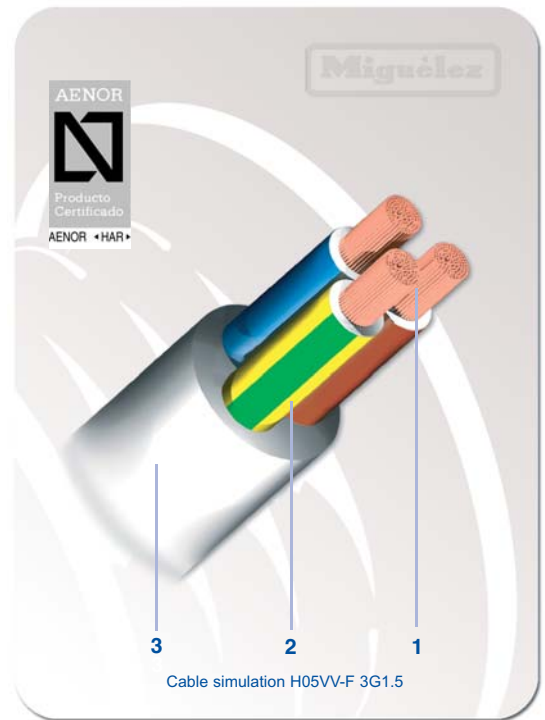
- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 PVC insulation type TI 2 according to UNE 21031-1.
- 3 PVC sheathed type TM2 according to UNE 21031-1. They appear in multipolar core formation of 2 to 5 insulated phases, depending on the installation necessities.



Rank of temperatures of storage, transport and handling:

T. minimum °C: +5 T. maximum °C: +40 (1)

(1) Exposed to the sun, the surface temperature of the cable can exceed the value given, but limited to a maximum of 60°C.



Applications

Type of installation:MOBILE

Ordinary or normal service. Use when risks of mechanical injuries and mechanical efforts are weak and when the risk of mechanical injury is weak, situation which can be found in the use of machines of small and medium dimensions in domestic commercial equipment, and light industry.

Users Guide:

H05VV-F in "specially designed for connecting small home appliances such as vacuum cleaners, washing machines, refrigerators, etc. It is recommended for household installations and can also be used for light mobile services". (UNE 21176)
They can be used for heating and baking appliances whenever there is no risk of contact with hot parts, and are not put under radiations...Do not use permanently outdoors, in industrial or agricultural factories, or for the feeding of portable tools (non domestic).

Functional Characteristics

A) Flexibility:

The use of flexible copper conductor forming a rope yarn of several very fine threads in combination with the isolation equips these cables with exceptional degrees of flexibility.



B) Non flame propagation test:

The composition of the isolation of PVC type TM2, guarantees the non flame propagation according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



C) Suitable for mobile uses:

Standard UNE 21176 qualify it as can also be used for light mobile services, extra light, ordinary even staying temporarily outdoors.



D) Water resistant:

Use condition AD2 (Probability of rain drops falling vertically) according to UNE 21176 ANEXO C standard.



E) Optimal chemical & oil attack resistance:

Use condition AF3 (under the attack of intermittent/accidental corrosive or polluting substances) according to UNE 21176 ANEXO C standard.





Dimensional characteristics

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km
H05VV-F					
80284	2x0,75	6,7	0,6	60	26
80285	2x1	7,0	0,6	75	19,5
80286	2x1.5	7,8	0,7	94,3	13,3
80287	2x2.5	9,6	0,8	142,4	7,98
80288	2x4	11,0	0,8	195,2	4,95
81049	3G0.75	7,0	0,6	71,9	26
80292	3G1	7,5	0,6	86,2	19,5
80293	3G1.5	8,8	0,7	118,7	13,3
80294	3G2.5	10,5	0,8	176	7,98
80295	3G4	11,9	0,8	243,6	4,95
81039	4G0,75	7,5	0,6	87,8	26
80310	4G1	8,3	0,6	104	19,5
80311	4G1.5	9,4	0,7	142	13,3
80312	4G2.5	11,3	0,8	213	7,98
80313	4G4	13,1	0,8	301	4,95



Available references of permanent stock and **Integrated Service net**

Presentation

Boxes, packages and standard pallet sizes

Cable type	M. pallet	Nominal section	m./coils
BARRYFLEX MAN H03VV-F	7.200	2x0,75	100
BARRYFLEX MAN H05VV-F	7.200	2x1	100
BARRYFLEX MAN H05VV-F	7.200	2x1,5	100
BARRYFLEX MAN H05VV-F	4.200	2x2,5	100
BARRYFLEX MAN H03VV-F	7.200	3G0,75	100
BARRYFLEX MAN H05VV-F	7.200	3G1	100
BARRYFLEX MAN H05VV-F	4.800	3G1,5	100
BARRYFLEX MAN H05VV-F	3.600	3G2,5	100
BARRYFLEX MAN H03VV-F	7.200	4G0,75	100
BARRYFLEX MAN H05VV-F	6.000/4.200	4G1,5	100
BARRYFLEX MAN H05VV-F	3.600	4G2,5	100
BARRYFLEX MAN H05VV-F	3.000	4G4	100

Colours



Definition

Technical definition: H05VV5-F

Voltage rating: 300/500 V



Max. operative temperature:

operating service:60°C

short-circuit (5 s.) :.....150°C



Voltage test: H05VV5-F-----2000 V (5 min.)

Constructive description: according to UNE 21031-13:

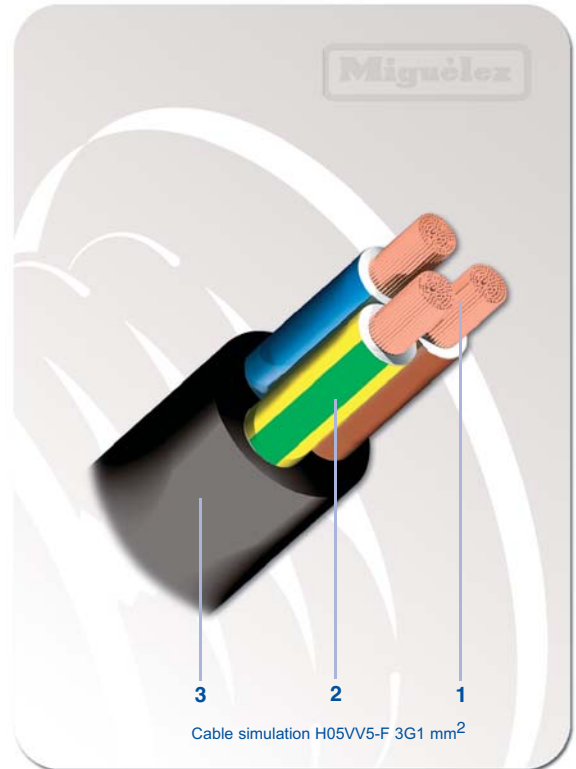
- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 PVC insulation type T1 2 according to UNE 21031-1.
- 3 PVC outer sheath, special nitroxil / PVC compound type TM 5 according to UNE 21031-1 standard. They appear in multi core formation of 2 to 5 isolated phases of 1 mm².



Rank of temperatures of storage, transport and handling

T. minimum °C: +5 *T. maximum* °C: +40 (1)

(1) Exposed to the sun, the surface temperature of the cable can exceed the value given, but limited to a maximum of 60°C.



Cable simulation H05VV5-F 3G1 mm²

Applications

Installation type:MOBILE Ordinary or normal service. Use when risks of mechanical injuries and efforts are weak, and when risk of mechanical injury is weak, a situation which can be found in the use of machinery of small / medium dimensions in domestic commercial equipment.

Users Guide:

H05VV5-F: use "for the interconnection of parts of equipment used for manufacturing, including machines tool.

Whenever the cable does not undergo mechanical efforts during its movement, can be moved once installed, in special for the replaced one, maintenance, fits and inspection of the machinery...

The cables are resistant to mineral oils of general use, but they are not designed to stay in a continuous oil immersion.

They are prepared for using inside constructions. The contamination by acid hydrocarbons must be avoided and alkalis and the cables must be protected from mechanical damages. (UNE 21176)

Functional characteristics

A) Flexibility:

The use of flexible copper conductor forming a rope yarn of some very fine threads in the combination with the isolation equips these cables with exceptional degrees of flexibility.



B) Non flame propagation test:

The composition of the isolation of PVC type TM5, guarantees the non flame propagation according to UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



C) Suitable for mobile uses:

Standard UNE 21176 recommends its use for light mobile services, extra-light, ordinary even staying temporarily outdoors.



D) Water resistant:

Use condition AD2 (probability of rain drops falling vertically) according to UNE 21176 ANEXO C standard.



E) Sheath resistance to mineral oil:

Its presence is allowed in mineral oils according to EN 60811-2-1(*).



(*) The Barryflex-oil cables fulfill the exigencies of the norm IN 60811-2-1 in section 10 (Test of resistance to the mineral oil, for covers). This norm specifies for the resistance test a mineral oil with the following characteristics: - aniline Point: 93°C+3°C (colorant additive of habitual use in oils and varnishes for wood); - Viscosity to 100 OC: 20 centistokes + - 1 centistokes; - Flash point: 245°C +6°C.v. In most of oils of industrial use, we found inferior values (less aggressive) to the determined ones for the test. Any type of oil, whose characteristics surpass the indicated ones, would entail a variation of the conditions of test, not being able to make sure the integrity of the cable in the presence of this oil. In such case it must be consulted with cable manufacturer.

300 V - 500 V



H05VV5-F



Dimensional characteristics

Code	Nominal Cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

H05VV5-F

	82401	2x1	7.08	0,6	70,7	19,5
	82402	3G1	7.15	0,6	76,0	19,5
	82403	4G1	7.95	0,6	92,5	19,5
	81105	5G1	8.9	0,6	112	19,5



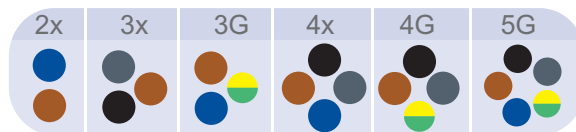
Available references of permanent stock and **Integrated Service** net

Presentation

Boxes, packages and standard pallet sizes

Cable type	M. pallet	Nominal cross section	m./coils
BARRYFLEX oil H05VV5-F	7.200	2x1	100
BARRYFLEX oil H05VV5-F	7.200	3G1	100
BARRYFLEX oil H05VV5-F	6.000	4G1	100
BARRYFLEX oil H05VV5-F	4.800	5G1	100

Colours



PVC 60°C

300-500 V

barryflex múltiple VV-F

ES05VV-F

Definition

Technical definition: ES05VV-F

Voltage rating: 300/500 V



Max. operative temperature:

operating service: 60°C

short-circuit (5 s.): 150°C



Voltage test: ES05VV-F -----2000 V (5 min.)

Constructive description: according to UNE 21031-5:

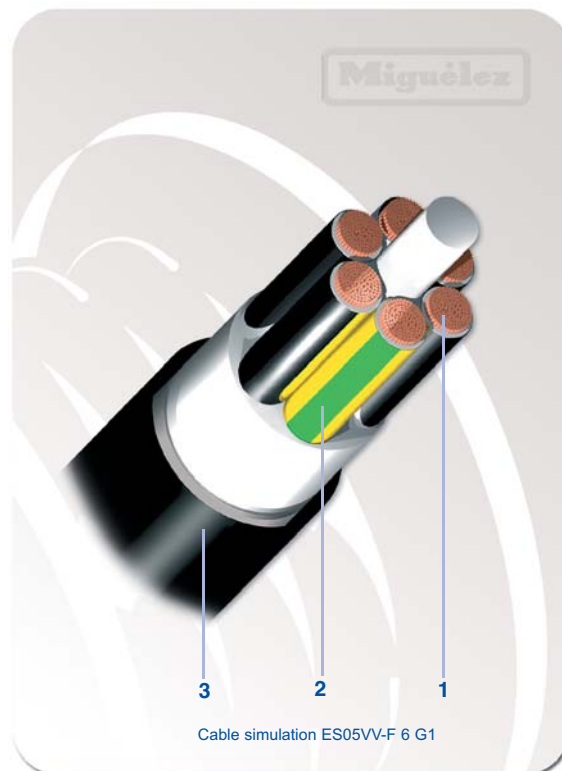
- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 PVC insulation type TI 2 according to UNE 21031-1.
- 3 PVC outer sheath type TM 2 according to UNE 21031-1. They appear in multicore formation of 6 to 60 insulated phases of 1 mm² section. Preferent number of conductors 6,7,12,18,27,36,48,60.



Rank of temperatures of storage, transport and handling:

T. minimum °C: +5 T. maximum °C: +40 (1)

(1) Exposed to the sun, the temperature of the surface of the cable can exceed the value given, but limited to a maximum of 60°C.



Applications

Installation type:MOBILE Regular or ordinary service

Users Guide (1):

ES05VV-F: " its use is recommended when a special resistance to the action of mineral oils is not required: for the interconnection of parts of machinery used for the manufacture, including tool machines. Whenever the cable does not undergo mechanical efforts during its movement, can be moved once installed, in special for the repstoration, maintenance, fits and inspection of the machine. Provided to be used inside buildings. Must avoid contamination by acid hydrocarbons and alkalis and cables must be protected from mechanical damages. Its installation in conduits is recommended when its movement in use is not necessary." (UNE 21176)

(1) Cables BARRYFLEX Múltiple VV-F, technical definition: ES05VV-F are not armonized cables. Its construction and use is regulated by the Spanish norm UNE 21031-5 first complement. However, this norm says that its use is the anticipated one for cables according to norm UNE 21031 part 13 chapter 3, when a special resistance to the action of mineral oils is not required, being left its guide of use assigned to this norm with the indicated reservation.

Functional characteristics

A) Flexibility:

The use of flexible copper conductor forming a rope yarn of several very fine threads in combination with the isolation equips these cables with exceptional indices of flexibility.



B) Non flame propagation test:

The composition of the isolation of PVC type TI 1, assures the nonpropagation of the flame according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



C) Suitable for mobile uses:

Standard UNE 21176 recommends its use for light mobile services, extra light,ordinary even staying temporarily outdoors.



D) Water resistance:

Use condition AD2 (Probability of rain drops falling vertically) according to UNE 21176 ANNEXED C .





Dimensional Characteristics

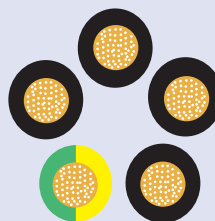
Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km
ES05VV-F UNE 21031.5 Standard First Complement					
81106	6G1	10.2	0,6	161	19,5
81107	7G1	11.5	0,6	168.3	19,5
81600	8G1	12.8	0,6	201	19,5
81108	10G1	13	0,6	237	19,5
81109	12G1	13.6	0,6	287	19,5
81110	14G1	15.4	0,6	314	19,5
81111	16G1	15.9	0,6	349	19,5
81112	18G1	16.3	0,6	384	19,5
81113	19G1	16.5	0,6	397	19,5
82400	20G1	17	0,6	420	19,5
81114	24G1	19	0,6	489	19,5
81115	27G1	19.6	0,6	551	19,5
81116	30G1	20.8	0,6	598	19,5
81119	37G1	21.9	0,6	718	19,5



Available references of permanent stock and **Integrated Service** net

Colours

Identified according to the color code harmonized norm **UNE EN 50334** being made up of green a yellow grounding wire (if it's available) and the rest of the black conductors with numeration in white or yellow, at intervals of 50 mm.



Presentation

Boxes, packages and standard pallet sizes

Cable type	M. pallet	Nominal cross section	m.coil
BARRYFLEX múltiple vv-f	4.800	6G1	100
BARRYFLEX múltiple vv-f	4.800	7G1	100

* Rest of sizes: available in drums

afirefácil (AS)

TWIN cable of: ES07Z1-K(AS)

Definition

Technical definition:twin cable of ES07Z1-K(AS)

Voltage rating:..... 450/750 V
(from 1.5 mm² section).



Max. operating temperature:

operating service: 70°C
shor-circuit (5 s.): 160°C



Voltage test: ES07Z1-K ----- 2500 V (15 min.)

Constructive description: according to
UNE 211002 standard:



- 1 Flexible electrolytic copper conductor class 5
according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 Thermoplastic polyolefine insulation HFFR type T1Z1
according to UNE 211002 ANNEXED 1 standard.



Rank of temperatures of storage, transport and handling:

T. minimum °C: +5 *T. maximum* °C: +40 (1)

(1) Exposed to the sun, the temperature of the surface of the cable can exceed the value given, but limited to a maximum of 60°C.



Applications

Type of instalation: FIXED

For individual uses in facilities of connection in all type of houses and buildings.
Exclusively for single-phase installations.

Functional characteristics

A) Non flame propagation test:

The composition of the isolation of thermoplastic polyolefine HFFR type T1Z1, guarantees the non-flame propagation of the flame according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



B) Non fire propagation test:

According to UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3 standards.



C) Density of smoke (smoke-screening):

In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to UNE EN 61034-2 / EN 61034-2 / IEC 61034-2 standards.



D) Halogenous determination:

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: UNE EN 50267-2-1/ EN 50267-2-1 / IEC 60754-1 standards.



E) Acidity and gases corrosivity:

In case of fire, the index acidity and the conductivity the emanated gases according to UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1 standards. minimum PH ≥ 4,3 / maximum conductivity (µS/cm) ≤100.



450V-750 V



TWIN cable of: ES07Z1-K(AS)



Dimensional Characteristics

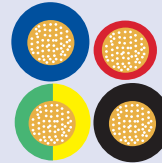
Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km
ES07Z1-K (AS)					
SI 84121	3G6+1x1.5	9,35	0,8 - 0,7	211,24	3,3 - 13,3
SI 84122	3G10+1.5	11,95	1 - 0,7	342,4	1,91 - 13,3
SI 84123	3G16+1.5	14,3	1 - 0,7	511,54	1,21 - 13,3
SI 84124	3G25+1.5	17,0	1,2 - 0,7	760,24	0,78 - 13,3



Available references of permanent stock and Integrated Service net

Colours and marking

Standard UNE 211002 section. 2.6: Marked it says: "the cables object of this norm must be marked with the abbreviations AS = high security) indicating their characteristic of non fire propagation".



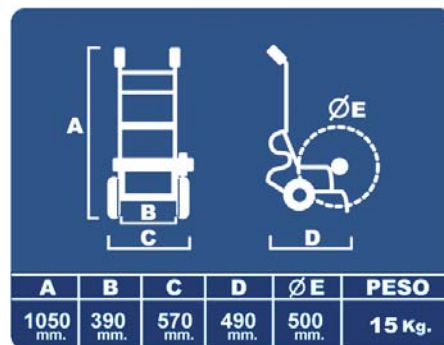
Presentation

Boxes, Packages and standard pallet sizes

Cable type	Coil diameter	nominal cross section	m./drums
AFIREFÁCIL	500	3G6+1x1,5	400
AFIREFÁCIL	500	3G10+1,5	300
AFIREFÁCIL	500	3G16+1,5	200
AFIREFÁCIL	500	3G25+1,5	100



It is provided in drums of 500 diameter (weight aprox 100 kg.) In order to enable transport and manipulation of the drum, Cars specially designed for this application are available.



Z1 70°C

450-750 V

Definition

Technical definition: H07Z-R

Voltage rating: 450/750 V



Max. operative temperature:

permanent service: **90°C**

short-circuit (5 s.): **250°C(1)**

(1) In case of joints by soft weld or terminals, the temperatures limit for conditions of short circuits are reduced to 160°C.



Voltage test: H07Z-R-----2500 V (15 min.)

Constructive description: according to UNE 21027-9, HD 22.9 S2:



1 Solid electrolytic copper conductor class 2 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.



2 Isolation of material cross-linked of polyolefine type E15.

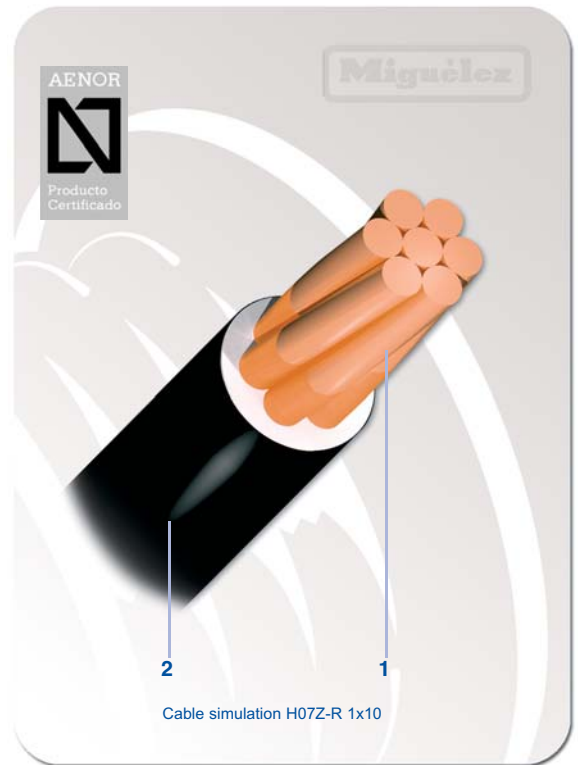


These cables are always single-core

Rank of temperatures of storage, transport and handling:

T. minimum °C: +5 T. maximum°C: +40 (1)

(1) Exposed to the sun, the temperature of the surface of the cable can exceed the value given, but limited to a maximum of 60°C.



Cable simulation H07Z-R 1x10

Applications

Installation type:FIXED

Users Guide:

H07Z-R en " facilities in conduits, located on surfaces or embedded, or in closed systems analogous, special when one requires low smoke-screening and corrosive gases." They are recommended for protected fixed assembly in, or on lights and apartamenta of control, for voltage until 1000V in alternating current, (or until 750V in DC) with respect to earth." And for "installation it fixes protected inside machinery and to, or on, fixed lights, in special when she requires low smoke-screening and corrosive gases." They are adapted for facilities made in placed conduits superficially or interlocked, only in the case of signal wirings or control."the highest temperature of the conductor in normal use of cables is 90°C. Must be avoided the contact with the skin when they work with high temperature. These cables are prepared to equip the circuit of integrity in case of fire. The tests defined for smoke and corrosive gases are applied only to cables and not to the whole cable conduit". (UNE 21176).

Suitable methods of installation:

In closed and tubular tubes, canals. In internal wiring of equipment and electrical mechanisms in zones of normal temperature. The Maximum temperature of the conductor a cable in individual can work, depends on the temperature limit of other cables and accessories that are in contact with.

Functional characteristics

A) Non flame propagation test:

The composition of the isolation of material cross-linked polyolefine type E15, guarantees the non flame propagation according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



B) Density of smoke (smoke-screening):

In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to UNE EN 61034-2 / EN 61034-2 / IEC 61034-2 standards.



C) Halogenous determination:

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: UNE EN 50267-2-1/ EN 50267-2-1 / IEC 60754-1 standards.



D) Acidity and gases corrosivity:

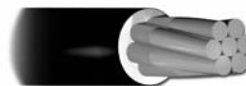
In case of fire, the index acidity and the conductivity the emanated gases according to UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1 standards. minimum PH ≥ 4,3 / maximum conductivity (µS/cm) ≤100.



E) High service temperature:

The isolation of material cross-linked of polyolefine type E15, improves the capacity of power transmission, when elevating the permanent service temperature to 90°C and the short circuit(5 s.) to 250°C, in contrast to 70/160°C of the PVC or other no thermoplastic polyolefine.





Dimensional characteristics and colours

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C	Colour available
	mm ²	mm	mm	Kg/km	Ohm/km	
H 0 7 Z - R						
84220	1x1.5	3	0,7	22,5	12,1	
84221	1x2.5	3,6	0,8	35	7,41	
84222	1x4	4,2	0,8	50	4,61	
84223	1x6	4,6	0,8	70	3,08	
84224	1x10	5,8	1	114	1,83	
84225	1x16	6,8	1	170	1,15	



Available references of permanent stock and **Integrated Service** net

Presentation

Boxes, packages and standard pallet sizes

Cable type	Nominal cross section	M.Pallet	m./drums	m./packages
AFIRENAS CC-Z	1x1,5	45.000	200	1000m
AFIRENAS CC-Z	1x2,5	27.000	200	600m
AFIRENAS CC-Z	1X4	18.000	100	400m
AFIRENAS CC-Z	1X6	13.500	100	300m
AFIRENAS CC-Z	1X10	7.200	100	100m
AFIRENAS CC-Z	1X16	7.200	100	100m

Definition

Technical definition: H05Z1Z1-F

Voltage rating: 300/500 V



Max. operating temperature:

operating service:60°C

short-circuit (5 s.):150°C



Voltage test: H05Z1Z1-F-----2000 V (5 min.)

Constructive description: according to UNE 21031-14:

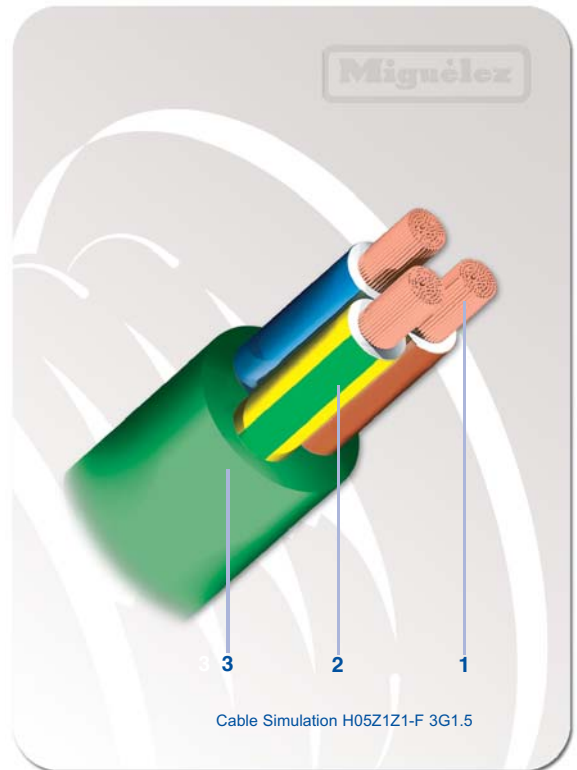
- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
 - 2 Isolation mixture of thermoplastic material type TI6, according to UNE 21031-14 standard.
 - 3 Sheath mixture of thermoplastic material type TM7, according to UNE 21031-14 standard.
- They appear in multi-core formation of 2 to 5 insulated phases, depending on the installation necessities.



Rank of temperatures of storage, transport and handling:

T. minimum °C: +5 T. maximum °C: +40 (1)

(1) Exposed to the sun, the temperature of the surface of the cable can exceed the value given, but limited to a maximum of 60°C.



Applications

Installation type: MOBILE Regular or ordinary service.

Use when the mechanical risks of injuries and efforts are weak and when the risk of mechanical injury is weak, situation that can be found in the normal use of machinery of small and medium dimensions in business / domestic premises and in light industry.

Users guide:

H05Z1Z1-F: "it prescribes its use when conductors are required to have a low level of smoke emission and corrosive gases in case of fire" Domestic Uses, premises destined to kitchens, offices; household-electric appliances, even in humid places; (for average, for example washing, drying and refrigerating services). It can be used in cooking ,heating coming up that is not risk of contact with hot parts and subject to radiation."

Unsuitable: use in zones in which lights reaches high temperatures.

Unsuitable: use outdoors, in buildings of industrial or agricultural use or for portable tools of non-domestic use, it is not recommended for the wiring of fixed facilities.

Functional characteristics

A) Flexibility:

The use of flexible copper conductor forming a rope yarn of several very fine threads in combination with the isolation and sheath type TM7 equips these cables with an exceptional degree of flexibility.



B) Non flame propagation test:

The composition of the isolation of PVC type TM7, guarantees the non-flame propagation of the flame according to UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



C) Suitable for mobile use:

Standard UNE 21176 recommends its use for light mobile services, extra light, ordinary even staying temporarily outdoors.



D) Water resistant:

Use condition AD2 (Probability of rain drops falling vertically) according to UNE 21176 ANEXO C.



E) Suitable for use in presence of corrosive or polluting substances:

Condition of use AF3 (subject of intermittent or accidental form to corrosive or polluting substances) according to UNE. 21176 ANEXO C standards.



**F) Density of smoke (smoke-screening):**

In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to UNE EN 61034-2 / EN 61034-2 / IEC 61034-2 standards.

**G) Halogenous determination:**

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: UNE EN 50267-2-1/ EN 50267-2-1 / IEC 60754-1 standards.

**H) Acidity and gases corrosivity:**

In case of fire, the index acidity and the conductivity the emanated gases according to UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1 standards. minimum PH $\geq 4,3$ / maximum conductivity ($\mu\text{S}/\text{cm}$) ≤ 100 .

*Dimensional characteristics*

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

H 0 5 Z 1 Z 1 - F					
84505	2x0,75	6,2	0,6	67,6	26
84506	2x1	6,6	0,6	77,7	19,5
84507	2x1.5	7,3	0,7	99,2	13,3
84508	2x2.5	9	0,8	151,8	7,98
84509	2x4	10,6	0,8	213,2	4,95
84515	3G0.75	6,5	0,6	67	26
84516	3G1	7	0,6	79,3	19,5
84517	3G1.5	7,9	0,7	104,5	13,3
84518	3G2.5	9,7	0,8	161,4	7,98
84519	3G4	11,4	0,8	231,4	4,95
84525	4x0,75	7,1	0,6	80,7	26
84526	4G1	7,8	0,6	98,6	19,5
84527	4G1.5	8,9	0,7	132,3	13,3
84528	4G2.5	10,6	0,8	196	7,98
84529	4G4	12,5	0,8	283,2	4,95



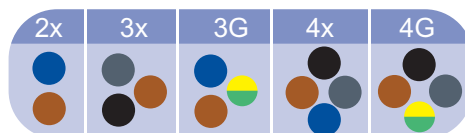
H 0 5 Z 1 Z 1 - F

Presentation

Boxes, packages and standard pallet sizes

Cable type	M. pallet	Nominal cross-section	m./coil
AFIRENAS MAN H05Z1Z1-F	7200	2x0,75	100
AFIRENAS MAN H05Z1Z1-F	7200	2x1	100
AFIRENAS MAN H05Z1Z1-F	7200	2x1,5	100
AFIRENAS MAN H05Z1Z1-F	4200	2x2,5	100
AFIRENAS MAN H05Z1Z1-F	3000	2x4	100
AFIRENAS MAN H05Z1Z1-F	7200	3G0,75	100
AFIRENAS MAN H05Z1Z1-F	7200	3G1	100
AFIRENAS MAN H05Z1Z1-F	4800	3G1,5	100
AFIRENAS MAN H05Z1Z1-F	3600	3G2,5	100
AFIRENAS MAN H05Z1Z1-F	3000	3G4	100
AFIRENAS MAN H05Z1Z1-F	7200	4x0,75	100
AFIRENAS MAN H05Z1Z1-F	6000	4G1	100
AFIRENAS MAN H05Z1Z1-F	4200/3600	4G2,5	100
AFIRENAS MAN H05Z1Z1-F	3000	4G4	100

Colours





City of León Auditorium (León, Spain)
Building made with Miguélez electrical cables.



afirenas L(AS)

ES05Z1-K(AS) - ES07Z1-K(AS)

Definition

Technical definition: ES05Z1-K (AS) / ES07Z1-K (AS)

Voltage rating:

ES05Z1-K(AS).....300/500 V(until 1mm²)
ES07Z1-K(AS).....450/750 V(over 1.5 mm²)



Max.operative temperature:

operating service:70°C
short-circuit (5 s.) :160°C



Voltage test: ES07Z1-K-----2500 V (15 min.)

Constructive description: according to UNE 211002 standard:

- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 Thermoplastic isolation of polyolefine HFFR type TIZ1 according to UNE 211002 ANEXO 1 standard.

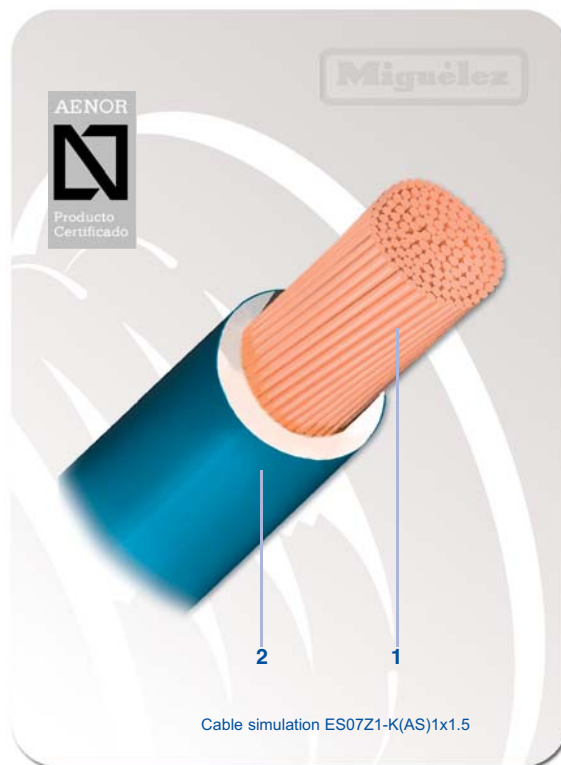
These cables are always single core



Rank of temperatures of storage, transport and handling:

T. minimum °C: +5 T. maximum°C: +40 (2)

- (1) 160°C for sections up to 300 mm², 140°C for sections over 300 mm².
(2) Exposed to the sun, the temperature of the surface of the cable can exceed the value given, but limited a maximum of 60°C.



Applications

Installation type:FIXED.

Users guide:

ES05Z1-K & ES07Z1-K: "when special characteristics of low smoke-screening and corrosive gases in case of fire are required." Specially recommended for public places wirings, individual uses in buildings and any other installation that requires these special characteristics in case of fire "

Functional characteristics

A) Non flame propagation test:

The composition of the isolation of thermoplastic polyolefine HFFR type TIZ1, guarantees the non-flame propagation of the flame according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



B) Non fire propagation test:

According to UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3 standards.



C) Density of smoke (smoke-screening):

In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to UNE EN 61034-2 / EN 61034-2 / IEC 61034-2 standards.



D) Halogenous determination:

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: UNE EN 50267-2-1/ EN 50267-2-1 / IEC 60754-1 standards.



E) Acidity and gases corrosivity:

In case of fire, the index acidity and the conductivity the emanated gases according to UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1 standards. minimum PH ≥ 4,3 / maximum conductivity (μS/cm) ≤100.



F) Flexibility:

The use of flexible copper conductor (class 5) forming a rope yarn of several very fine threads in combination with the isolation of thermoplastic polyolefine HFFR type TIZ1 equips these cables with exceptional degrees of flexibility.



G) Extra-sliding:

The composition of the sheath, guarantees an optimal sliding, enabling an easier installation.



Marked

Standard UNE 211002 part 2.6 says: "the cables object of this standard.....must be noticeable with abbreviations (AS = high security) signaling their characteristic of non-fire propagation ".

300 V-750 V



ES05Z1-K(AS)-ES07Z1-K(AS)



Dimensional characteristics and colours

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C	Colour available
	mm ²	mm	mm	Kg/km	Ohm/km	
ES05Z1-K						
84099	1x1	2,54	0,6	14,3	19,5	
ES07Z1-K						
84100	1x1,5	2,95	0,7	18,9	13,3	
84101	1x2,5	3,63	0,8	30	7,98	
84102	1x4	4,24	0,8	44,2	4,95	
84103	1x6	4,75	0,8	61,7	3,3	
84104	1x10	6	1	106,1	1,91	
84105	1x16	7,35	1	160,2	1,21	
84106	1x25	9,14	1,2	247,4	0,78	
84107	1x35	10,4	1,2	332,4	0,554	
84108	1x50	11,9	1,4	482	0,386	
84109	1x70	14,2	1,4	657,2	0,272	
84110	1x95	15,5	1,6	888,1	0,206	

Available references of permanent stock and **Integrated Service** net

Presentation

Boxes, packages and standard pallet sizes

Cable type	Nominal cross section	M.Pallet	m./coils	m./packages
AFIRENAS L	1x1	45.000	200	1000m
AFIRENAS L	1x1,5	30.000	200	1000m
AFIRENAS L	1x2,5	18.000	200	600m
AFIRENAS L	1x4	18.000	100	400m
AFIRENAS L	1x6	13.500	100	300m
AFIRENAS L	1x10	7.200	100	100m
AFIRENAS L	1x16	7.200	100	100m
AFIRENAS L	1x25	4.200	100	100m
AFIRENAS L	1x35	3.600	100	100m

Z1 70°C

300-750 V

afirenas cc-Z1(AS)

ES07Z1-R(AS)

Definition

Technical definition: ES07Z1-R(AS)

Voltage rating: 450/ 750 V



Max. operative temperature:

operating service:70°C

short-circuit (5 s.): 160°C



Constructive description: Built according to UNE 211002 standard Annexed 2:



1 Solid electrolytic copper conductor class 2 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.



2 Thermoplastic isolation of polyolefine HFFR type TIZ1 according to UNE 211002 ANNEXED 1.



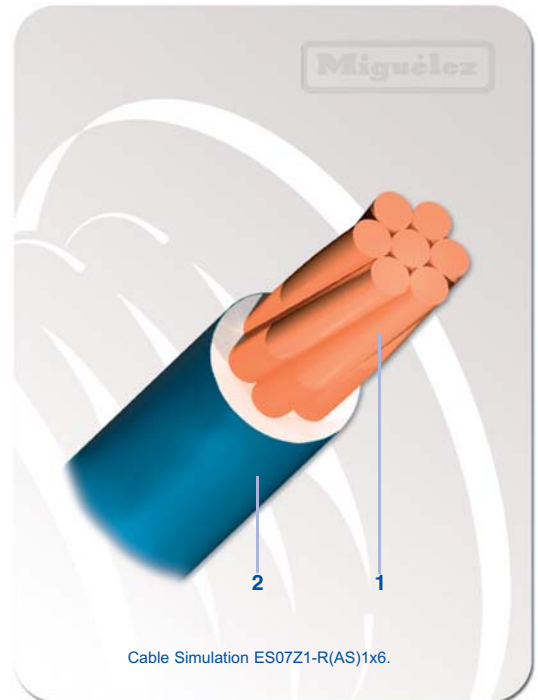
These cables are always single-core

Rank of temperatures of storage, transport and handling:

T. mínima °C: +5

T. máxima °C: +40 (1)

(1) Exposed to the sun, the temperature of the surface of the cable can exceed the value given, but limited to a maximum of 60°C.



Applications

Installation type:FIXED

Users guide:

ES07Z1-R(AS): " Cables with conductor class 2 and thermoplastic isolation of low smoke-screening and corrosive gases are included in ITC-BT-16 Facilities of connection, meters: Location and systems of installation."

Functional characteristics

A) Non flame propagation test:

The composition of the isolation of thermoplastic polyolefine HFFR type TIZ1, guarantees the non-flame propagation of the flame according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



B) Non fire propagation test:

According to UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3 standards.



C) Density of smoke (smoke-screening):

In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to UNE EN 61034-2 / EN 61034-2 / IEC 61034-2 standards.



D) Halogenous determination:

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: UNE EN 50267-2-1/ EN 50267-2-1 / IEC 60754-1 standards.



E) Acidity and gases corrosivity:

In case of fire, the index acidity and the conductivity the emanated gases according to UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1 standards. minimum PH \geq 4,3 / maximum conductivity (μ S/cm) \leq 100.



F) Extra-sliding:

The composition of the sheath, guarantees optimal sliding, enabling installation.



450 V-750 V



E S 0 7 Z 1 - R (A S)



Dimensional characteristics and colour

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C	Colour available
	mm ²	mm	mm	Kg/km	Ohm/km	

E S 0 7 Z 1 - R

	84200	1x1.5	3,3	0,7	29	12,1	
	84203	1x6	1x6	0,8	82	3,08	
	84204	1x10	1x10	1	134	1,83	
	84205	1x16	1x16	1	194	1,15	

Available references of permanent stock and **Integrated Service net**

Marked

Standard UNE 211002 section 2.6: "Cables object of this standard, ...must be mark with the abbreviations AS= High Security indicating their characteristic of non-fire propagation".

Presentation

Boxes, packages and standard pallet sizes

Cable type	Nominal section	M. pallet	m./coils	m./packages
AFIRENAS CC-Z1	1x1,5	30.000	200	1000m
AFIRENAS CC-Z1	1x6	13.500	100	300m
AFIRENAS CC-Z1	1x10	7.200	100	100m
AFIRENAS CC-Z1	1x16	7.200	100	100m

Z1 70°C

450-750 V

afirefenix man (AS+)

SZ1-K(AS+) 300/500V PH90

Definition

Technical definition:SZ1-K (AS+) 300/500V PH90

Voltage rating:..... 300/ 500 V

Max. operating temperature:

operating service:90°C

short-circuit(5 s.) :250°C

Voltage test:2000V (15 min)

Constructive description: according to AENOR EA 025

1 flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.

Conductors: 2,3,4,5 & +5

Nominal cross-section: 0,5 a 4 mm²

2 Halogen free cross-linked special compound.

The isolated conductors may be identified according to UNE 21089-1 standard.

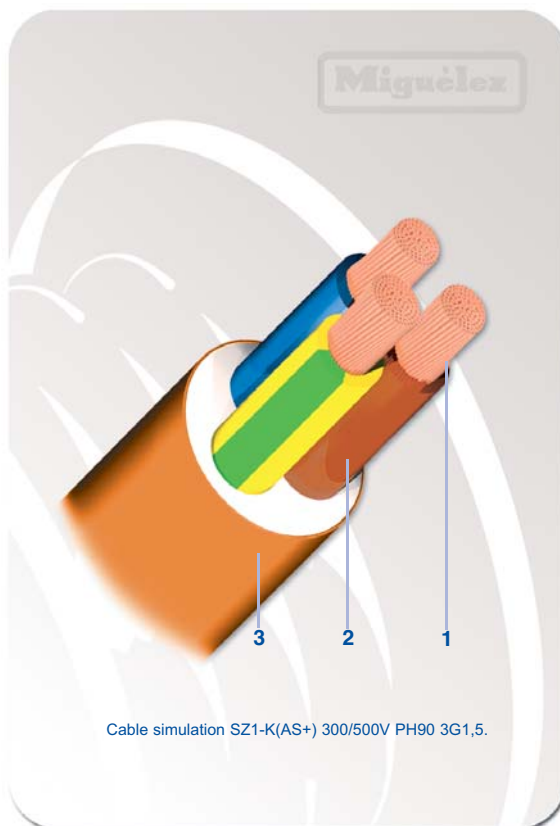
+5 conductors cables: Identification can be made with numbering system, according to UNE-EN 50334 standard. In both conductors, red & black are available.

3 Thermoplastic polyolefine sheath. Sheath color: Orange.

Rank of temperatures of storage, transport and handling:

T. minimum °C: +5 *T. maximum*°C: +40 (1)

(1) Exposed to the sun, the temperature of the surface of the cable can exceed the value given, but limited to a maximum of 60°C.



Applications

Type of installation:FIXED

Users Guide:

SZ1-K 300/500V PH90(AS+): These cables are highly recommended for all those installations in which circuit integrity needs to be maintain, even in situations when are directly affected by fire. Suitable for security circuits, for example: signaling, detection and alarm circuits, evacuation & fight against fire services circuits, ect.

Functional characteristics

A) Non flame propagation test:

The composition of the isolation of thermoplastic polyolefine HFFR type TIZ1, guarantees the non-flame propagation of the flame according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.

B) Non fire propagation test:

According to UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3 standards.

C) Density of smoke (smoke-screening):

In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to UNE EN 61034-2 / EN 61034-2 / IEC 61034-2 standards.

D) Halogenous determination:

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: UNE EN 50267-2-1/ EN 50267-2-1 / IEC 60754-1 standards.

E) Acidity and gases corrosivity:

In case of fire, the index acidity and the conductivity the emanated gases according to UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1 standards. minimum PH ≥ 4,3 / maximum conductivity (µS/cm) ≤100.







F) Fire resistant:

According to UNE-EN 50200 standards.





Dimensional characteristics and colour

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
					
	mm ²	mm	mm	Kg/km	Ohm/km

SZ1-K(AS+) 300/500V PH90

85600	2X0,75	6,2	0,6	64	26
85601	2X1	6,8	0,6	77,3	19,5
85602	2X1,5	8,1	0,8	112,3	13,3
85603	2X2,5	9,7	0,9	165,1	7,98
85604	2X4	11,5	1	236,9	4,95
85605	3G0,75	6,7	0,6	66,3	26
85606	3G1	7,2	0,6	78,8	19,5
85607	3G1,5	8,6	0,8	114,2	13,3
85608	3G2,5	10,3	0,9	168,5	7,98
85609	3G4	12,2	1	246	4,95
85610	4G0,75	7,3	0,6	79,3	26
85611	4G1	7,8	0,6	93,8	19,5
85612	4G1,5	9,6	0,8	142,7	13,3
85613	4G2,5	11,5	0,9	210,1	7,98
85614	4G4	13,6	1	306,5	4,95
85615	5G0,75	8,2	0,6	108,7	26
85616	5G1	8,8	0,6	129,3	19,5
85617	5G1,5	10,4	0,8	184,8	13,3
85618	5G2,5	12,8	0,9	285,2	7,98
85619	5G4	15,1	1	414,2	4,95

Marked

This cables must have printed a mark on its sheath:

- Trademark or name of manufacturer
- Voltage assigned
- Designation code

Definition

Technical definition:H05S-U

Voltage rating:300/ 500 V



Max. operating temperature:

operating service:180°C
short-circuit (5 s.):350°C



Voltage test: 2000V(15 min.)

Constructive description: according to
UNE 21027-3; HD 22.3 standards.



1 Solid electrolytic copper conductor class 1
according to UNE-EN 60228/ EN 60228 /IEC 60228 standard. 2



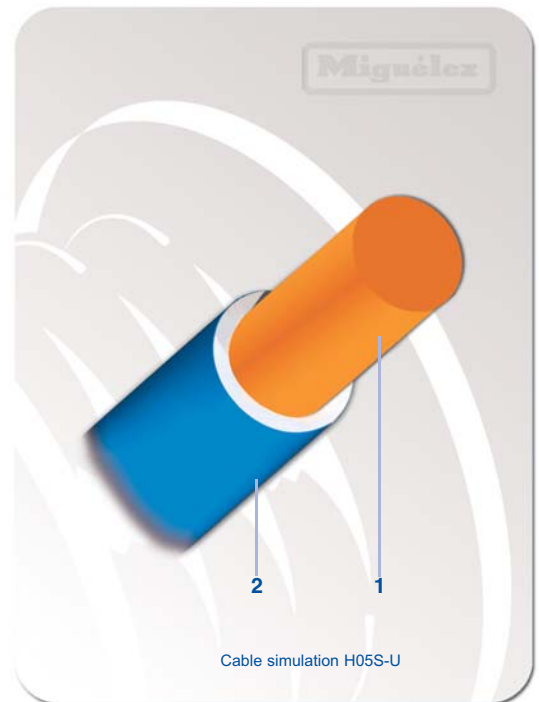
Insulation made by a silicon rubber compound
type EI2, UNE 21027-1 (HD 22.1) standard.



These cables are always single-core.

Rank of temperature of storage, transport and handling:

T. minimum °C: -25 T. maximum °C: +40 (1)



Cable simulation H05S-U

Applications

Installation type:FIXED

Users guide:

H05S-U: "For internal wiring in high environmental temperatures and protected places. The maximum temperature of the conductor in normal use is 180° C. Cable can be damaged for abrasion. It is convenient to have well-taken care of to avoid this in use and installation." (UNE 21176)

Suitable installation methods:

H05S-U: "In internal wiring of mechanisms and electrical equipment. For use in temperature zones. The water presence is not accepted in contact with the cable."

Marked


Cable must have mark **H05S-U**, printed on sheath
Mark must be perfectly legible.

300 V- 500 V

 
H 0 5 S - U



Dimensional characteristics and colour

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C	Colour available
						
	mm ²	mm	mm	Kg/km	Ohm/km	
H 0 5 S - U						
82900	1x0.5	2,4	0,8	8,5	36	
82901	1x0.75	2,6	0,8	13,9	24,5	
82902	1x1	2,8	0,8	16	18,1	
82903	1x1,5	3,2	0,9	22	12,1	
82904	1x2,5	3,8	1	33	7,41	

180°C

300-500 V

Definition

Technical definition:H05S-K

Voltage rating:300/ 500 V



Max. operating temperature:

operating service:180°C

short-circuit (5 s.) :350°C



Voltage test: 2000V(15 min.)

Constructive description: According to UNE 21027-3; HD 22.3 standards.



1 Flexible electrolytic copper conductor class 1 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.



2 Insulation made by a silicon rubber compound type EI2, UNE 21027-1 (HD22.1) standards.

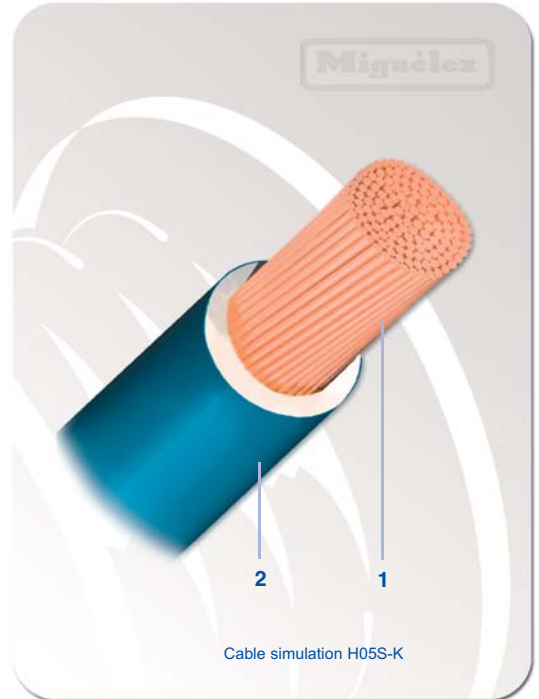
These cables are always single core.



Rank of temperature of storage, transport and handling:

T. minimum °C: -25

T. maximum °C: +40 (1)



Applications

Installation typeFIXED

Users guide:

H05S-K: "For internal wiring in high environmental temperatures and protected places. The maximum temperature of the conductor in normal use is 180° C. Cable can be damaged for abrasion. It is convenient to have well-taken care of to avoid this in use and installation." (UNE 21176)

Suitable installation methods:

H05S-K: "In internal wiring of mechanisms and electrical equipment. For use in temperature zones. The water presence is not accepted in contact with the cable."

Marked

Cable must have mark H05S-K, printed on sheath.
Mark must be perfectly legible.

300 V- 500 V



H 0 5 S - K



Dimensional characteristics and colour

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C	Colour available
	mm ²	mm	mm	Kg/km	Ohm/km	
H05S-K						
82930	1x0.5	2,6	0,8	10,86	39	
82931	1x0.75	2,7	0,8	13,15	26	
82932	1x1	2,9	0,8	15,81	19,5	
82933	1x1,5	3,3	0,9	21,78	13,3	
82934	1x2,5	4	1	33,36	7,98	

180°C

300-500 V

termoflex ss

H05SS-K

Definition

Technical definition:H05SS-K

Voltage rating:300/ 500 V



Max. operating temperature:

operating service:180°C

short-circuit (5 s.):250°C



Voltage test: 1500V up to 0,6 mm. thickness (15 min.)
2000V over 0,6 mm. thickness (15 min.)

Constructive description: according to
UNE 21027-3 ; HD 22.3 standards.



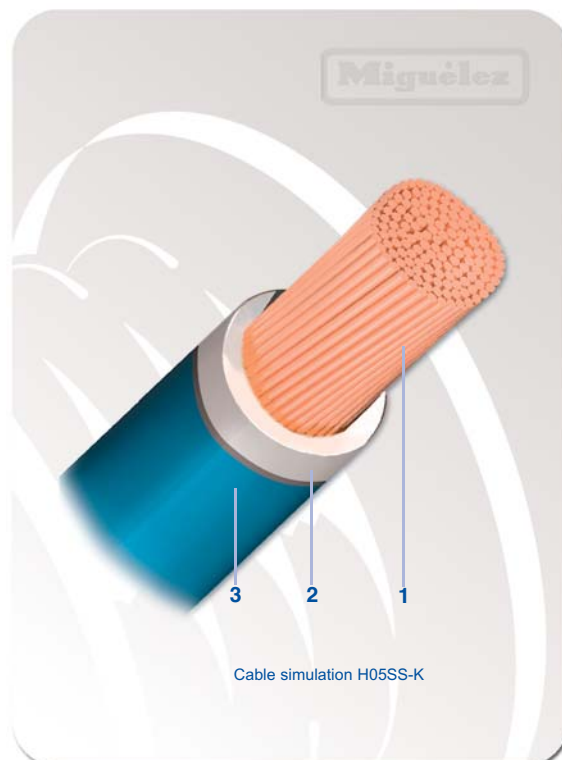
- 1 Flexible electrolytic copper conductor class 5
according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 Insulation made by a cross-linked compound type EI2,
according to UNE 21027-1 (HD 22.1) standard.
- 3 Sheath made by a cross-linked compound type EM9,
according to UNE 21027-1 (HD 22.1) standard.



Rango de Temperaturas de almacenaje, transporte y manejo:

T. mínima °C: -25

T. máxima °C: +40 (1)



Cable simulation H05SS-K

Applications

Installation type:FIXED

Users Guide:

H05SS-K: "With high temperature for fixed facilities in and on lamps in equipment, specially when one requires a cable isolated and covered. The maximum temperature of the conductor in normal use is 180° C. Cable can be damaged for abrasion. It is convenient to have well-taken care of to avoid this in use and installation." (UNE 21176)

Suitable installation methods:

H05SS-K: In tubes (1) only in sections 1,5 mm² or over.

In closed canals(1) only in sections 1,5 mm² or over.

In manifolds (1) only in sections 1,5 mm² or over.

(1) The maximum temperature of the conductor to whom a cable can work depends on the temperature limit of other cables and accessories that are in contact with it.

Functional characteristics

A) Non flame propagation test:

Isolation and sheath composition , guarantees non flame propagation according to:
UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



Marked

Cable must have H05SS-K, printed on sheath.
Mark must be perfectly legible.

300 V- 500 V



Dimensional characteristics and colour

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C	Colour available
	mm ²	mm	mm	Kg/km	Ohm/km	
H05SS-K						
82950	1x0.75	3,9	0,6	22,5	26	
82951	1x1	4,3	0,6	27,8	19,5	
82952	1x1,5	5,1	0,8	39,6	13,3	
82953	1x2,5	6	0,9	57	7,98	

180°C

300-500 V

Definition

Technical definition:H05SS-F

Voltage rating:300/ 500 V



Max. operating temperature:

operating service:180°C
short-circuit (5 s.) :.....350°C



Voltage test: 1500V up to 0,6 mm.thickness (15 min.)
2000V over 0,6 mm. thickness (15 min.)

Constructive description: according to
UNE 21027-15 ; HD 22.15



1 Flexible electrolytic copper conductor class 5
according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
Number of conductors: 2,3,4 ó 5



Nominal cross-section : 0,75 mm² up to 2,5 mm² for 2 & 5 cond.
0,75 mm² up to 6 mm² for 3 y 4 cond.

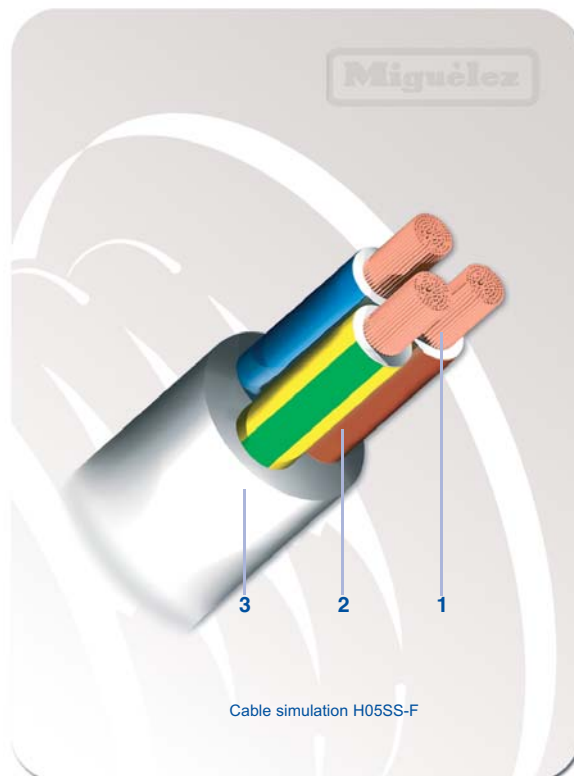


2 Insulation made by a cross-linked compound type EI2,
according to UNE 21027-1 (HD 22.1) standard.

3 Sheath made by a cross-linked compound type EM9,
according to UNE 21027-1 (HD 22.1) standard.

Rank of temperatures of storage, transport and handling

T. minimum °C: -25 T. maximum °C: +40 (1)



Applications

installation type:FIXED

Users Guide:

H05SS-F: " On high temperature or in contact with hot surfaces:

- For fixed installations or incorporated in lamps used on industrial facilities, whenever mechanical protection is guaranteed.
- For use in equipment that requires certain flexibility and put under slight mechanical actions.

This cable can be damaged by abrasion. Better be very careful on installation process to avoid any kind of problems.

Maximum factored load allowed: 15N/mm² copper nominal cross-section.

Suitable for a maximum temperature degree of 180 °C .

Contact with the skin must be avoided when operates on high temperature " (UNE 21176)

Functional characteristics

A) Non flame propagation test:

Isolation and sheath composition, guarantees non flame propagation according to:
UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.









Marked

Cable must have H05SS-F, printed on sheath.
Mark must be perfectly legible.



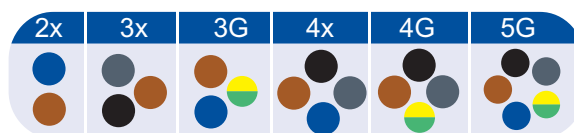
Dimensional characteristics

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
					
	mm ²	mm	mm	Kg/km	Ohm/km

H05SS-F

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
82970	2x0,75	6,2	0,6	64	26
82971	2x1	6,8	0,6	77,3	19,5
82972	2x1,5	8,2	0,8	114,3	13,3
82973	2x2,5	9,8	0,9	167,3	7,98
82974	3x0,75	6,7	0,6	66,3	26
82975	3x1	7,2	0,6	78,8	19,5
82976	3x1,5	8,7	0,8	115,7	13,3
82977	3x2,5	10,4	0,9	170,4	7,98
82978	3x4	12,2	1	246	4,95
82979	3x6	13,7	1	327,7	3,3
82980	4x0,75	7,3	0,6	79,3	26
82981	4x1	7,8	0,6	93,8	19,5
82982	4x1,5	9,7	0,8	144,3	13,3
82983	4x2,5	11,6	0,9	212	7,98
82984	4x4	13,6	1	306,5	4,95
82985	4x6	15,2	1	409,2	3,3
82986	5x0,75	8,2	0,6	108,7	26
82987	5x1	8,8	0,6	129,3	19,5
82988	5x1,5	10,6	0,8	189,4	13,3
82989	5x2,5	12,9	0,9	287,7	7,98

Colours







CABLES WITH ASSIGNED VOLTAGE 0,6/1 kV:

In the following chapter, we present cables assigned to UNE 21123 standard:
ELECTRICAL CABLES OF INDUSTRIAL USE WITH ASSIGNED VOLTAGE 0,6/1 kV.
As follows:

A.-Cables according to **UNE 21123 Part 1:** cables with isolation and polyvinyl sheathed chloride (PVC):

BARRYFLEX MULTIPLE VV-K VV-K 0,6/1kV.

B.- Cables according to **UNE 21123 Part 2:** cables with cross-linked polyethylene isolation (XLPE) y polyvinyl chloride sheathed (PVC):

BARRYNAX RVRV 0,6/1kV.
BARRYFLEX RV-K RV-K 0,6/1kV.
BARRYNAX AR FLEJE.....RVFAV 0,6/1kV & RVFV 0,6/1kV.
BARRYNAX AR CORONA RVMV 0,6/1kV.
BARRYFLEX AR FLEJE.....RVFAV-K 0,6/1kV & RVFV-K 0,6/1kV.
BARRYFLEX AR CORONA RVMV-K 0,6/1kV.

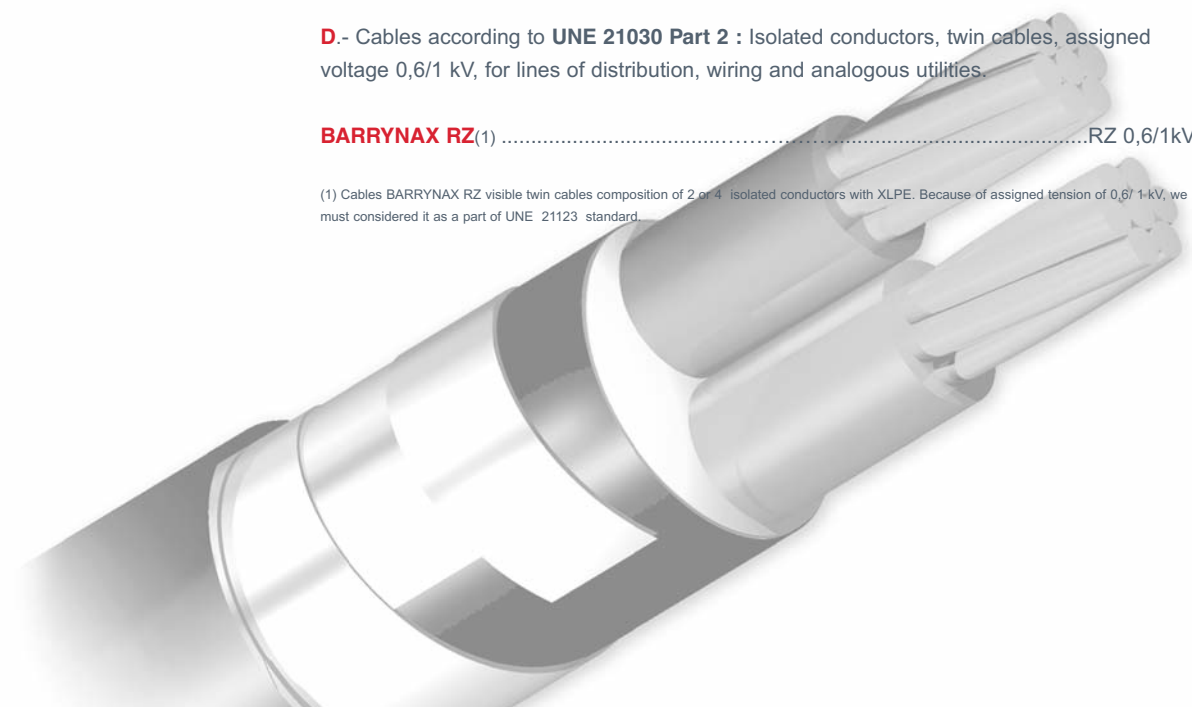
C.- Cables according to **UNE 21123 Part 4:** cables with cross-linked polyethylene isolation (XLPE) and polyolefine sheathed:

AFIRENAS X (AS)RZ1-K(AS) 0.6/1 kV.
AFIRENAS AR FLEJE (AS).....RZ1FAZ1-K(AS) 0.6/1 kV - RZ1FZ1-K(AS).
AFIRENAS AR CORONA (AS)RZ1MZ1-K(AS) 0.6/1 kV.
AFIREFENIX (AS+)SZ1-K(AS+) 0.6/1 kV.
AFIREFENIX AR FLEJE (AS+)RZ1FAZ1-K(AS+) / RZ1FZ1-K (AS+) 0.6/1 kV.
AFIREFENIX AR CORONA (AS+)RZ1MZ1-K (AS+) 0.6/1 kV.
AFIRENAS MÚLTIPLE (AS).....RZ1-K(AS).

D.- Cables according to **UNE 21030 Part 2 :** Isolated conductors, twin cables, assigned voltage 0,6/1 kV, for lines of distribution, wiring and analogous utilities.

BARRYNAX RZ⁽¹⁾RZ 0,6/1kV.

(1) Cables BARRYNAX RZ visible twin cables composition of 2 or 4 isolated conductors with XLPE. Because of assigned tension of 0,6/ 1-kV, we must considered it as a part of UNE 21123 standard.



barrynax RV

RV 0,6 / 1 kV

Definition

Technical definition: RV 0.6/1 kV

Voltage rating: 0.6/1 kV



Max. operative temperature:

operating service: 90°C

short-circuit (5 s.)..... 250°C

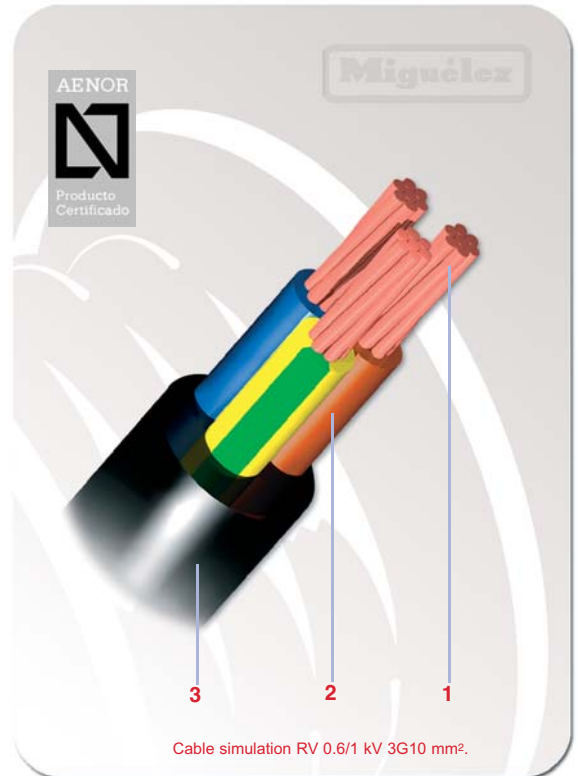


Voltage test: Alternating current..... 3.5 kV.
Direct current 8.5 kV.

Constructive description:

Built according to UNE 21123-2 standard:

- 1 Solid electrolytic copper conductor class 1 and/or 2 according to UNE-EN 60228/ EN 60228 /IEC 60228



Applications

Installation type:FIXED

Users guide:

RV: "for the transport and distribution of electrical energy in fixed facilities, protected or not. Adapted for inner and outer facilities, on outdoors supports to the air, inside tubes or buried." (UNE 21123-2)

This is specially indicated for the installation of distribution networks, public lighting installations and industrial facilities. Appropriate when it is not required a high level of flexibility and cable is required to display high benefits forehead to overloads and short circuits.

Suitable methods of installation:

The horizontal range between the clips will not be more than 20 times the diameter of the cable. The distance also is valid between points of support in case of tending on grids carries cables or on trays. In no case this distance must exceed 80 cm.

Functional characteristics

A) Non flame propagation test:

The composition of the isolation of PVC type DMV-18, guarantees non flame propagation according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



B) Outdoors behaviour:

It offers a good protection face to possible environmental agents, allowing its installation outdoors, under earth, even in the presence of non-permanent humidity.








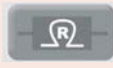
C) High service temperature:


















The isolation of XLPE, improves the capacity of power transmission, when elevating the permanent service temperature up to 90 ° C. and short-circuit (5 s.) up to 250 °C, contrary to 70/160° C of PVC.





Dimensional characteristics

Code	Nominal cross-section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
					
	mm ²	mm	mm	Kg/km	Ohm/km

RV 0,6/1KV					
80714	1x1,5	5,91	0,7	44,5	12,1
 80715	1x2,5	6,31	0,7	59,74	7,41
80716	1x4	6,63	0,7	74	4,61
 80717	1x6	7,38	0,7	98	3,08
 80718	1x10	8,36	0,7	143	1,83
 80719	1x16	9,23	0,7	205	1,15
 80720	1x25	10,8	0,9	310	0,727
 80721	1x35	11,8	0,9	408	0,524
 80722	1x50	13,5	1	526	0,387
 80723	1x70	15,3	1,1	726	0,268
 80724	1x95	17,1	1,1	988	0,193
 80725	1x120	18,8	1,2	1231	0,153
 80726	1x150	21	1,4	1495	0,124
 80727	1x185	22,9	1,6	1860	0,0991
 80728	1x240	25,9	1,7	2413	0,0754
80729	1x300	29,5	1,8	3000	0,0601
80731	2x1,5	8,71	0,7	102	12,1
 80732	2x2,5	9,4	0,7	122	7,41
80733	2x4	10	0,7	169	4,61
 80734	2x6	13,2	0,7	275	3,08
 80735	2x10	14,9	0,7	390	1,83
 80736	2x16	17,2	0,7	565	1,15
80737	2x25	20,2	0,9	832	0,727
80740	3G1,5	9,08	0,7	138	12,1
80741	3G2,5	10,4	0,7	152	7,41



Available references of permanent stock and **Integrated Service** net



RV 0,6 / 1 kV

Next

Code	Nominal cross-section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km
80743	3x4	10,7	0,7	204	4,61
80744	3x6	14,2	0,7	323	3,08
80745	3x10	15,7	0,7	498	1,83
80746	3x16	18,3	0,7	701	1,15
80747	3x25	21,4	0,7	1056	0,727
80765	4x1,5	9,8	0,7	136	12,1
80766	4x2,5	10,8	0,7	183	7,41
80767	4x4	11,2	0,7	152	4,61
80768	4x6	15	0,7	406	3,08
80769	4x10	17,3	0,7	599	1,83
80770	4x16	19,8	0,7	875	1,15
86271	5G1,5	11,5	0,7	178	12,1
86272	5G2,5	12,3	0,7	260	7,41
86273	5G4	13	0,7	360	4,61
86274	5G6	16,8	0,7	502	3,08
86275	5G10	19,1	0,7	735	1,83
86276	5G16	22,2	0,7	1001	1,15
86280	5G25	26,7	0,9	1665	0,727



Available references of permanent stock and **Integrated Service** net.

RV 0,6 / 1 kV



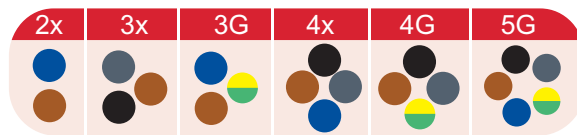
Presentation

Boxes, packages, and standard pallet sizes

Cable type	M. pallet	Nominal section	meters
BARRYNAX RV 0,6/1Kv	5.400	3x1,5	100
BARRYNAX RV 0,6/1Kv	3.600	3x2,5	100

* Rest of sizes: available in drums.

Colours



XLPE 90°C

0,6 / 1 kV

barrynax RZ

RZ 0,6/ 1 kV

Definition

Technical definition: RZ 0.6/1 kV

Voltage rating:..... 0.6/1 kV



Max. operative temperature:

operating service:90°C

short-circuit (5 s.)250°C



Voltage test: Alternating current.....3.5 kV.
Direct current 8.5 kV.

Constructive description:



Applications

..... d or embedded structures.

Suitable methods of installation:

If requires to have an installation tightened between supports these same cables will be able to be used fixing them with clips, each 0,5 m to a wire fastener or steel cord previously installed. The damages in form of penetrating tracks will have to be avoided, due to the thermal expansions.

Functional characteristics

A) Outdoors behaviour:

The isolation of XLPE of the cables Barrynax RZ with black overload of smoke offers an exceptional resistance to the deterioration caused by atmospheric ultra-violet rayses and other agents.



B) High temperature on service:

The isolation of XLPE, improves the capacity of power transmission,elevating temperature in permanent service up to 90 ° C and short - circuit (5 s.) up to 250 °C, in contrast with 70/160 °C del PVC.





Dimensional characteristics

Code	Nominal cross-section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

RZ 0,6/1KV

82199	2x2,5	8,38	1,2	69	7,41
82204	2x4	9,26	1,2	96	4,61
82200	2x6	10,8	1,2	138	3,08
82201	2x10	12,4	1,2	213	1,83
82202	2x16	14,4	1,2	327	1,15
82208	4x2,5	10,1	1,2	129	7,41
82209	4x4	11,2	1,2	196	4,61
82210	4x6	13	1,2	276	3,08
82211	4x10	15	1,2	425	1,83
82212	4x16	17,5	1,2	665	1,15



Available references of permanent stock and **Integrated Service** net

Presentation

Only available in drums

Colours

Black colour isolation with corelative numeration printed on sheath.

- The conductors take on the outer surface of the insulating sheath within the following marks: phase conductor, numbers 1, 2 or 3 with a dash in its base, inverted alternatively 180°.
- Neutral conductor, letter **N** printed + identification of the manufacturer + the two last numbers of the manufacturing year and the cable section / size.

barrynax AR-Fleje

RVFAV/RV FV 0,6/1 kV

Definition

Technical definition: RVFAV/RV FV 0.6/1 kV

Voltage rating:..... 0.6/1 kV



max. operative service:

operating service: 90°C

short-circuit (5 s.).....250°C



Voltage test: Alternating

curre



Cable simulation RVFAV/RV FV 0,6/1kV 2 x 10 mm².

Applications

Installation type:FIXED.

Users guide:

RVFAV/RV FV: " for the transport and distribution of electrical energy in fixed facilities, protected or not. Adapted for inner and outer facilities, on supports (outdoors), in tubes or buried. Non suitable for facilities of feeding of submerged pumps." (UNE 21123-2)

It's specially indicated for its use in fixed facilities that can be put under possible mechanical aggressions. It is recommended to use in production plants or facilities where the presence of rodents can suppose a threat for the integrity of the cable. Also it is recommended to use on public lightning installations.

Suitable methods of installation:

The horizontal range between clips will not be more than 20 times the diameter of the cable. Also, the distance is valid between points of support in case of tending on grids carries cables or on trays. In no case this distance must exceed 80 cm

Functional characteristics

A) mechanical protection:

The application of an armor of double steel tape armour (or aluminum for the single-core ones) provides an excellent protection against accidental blows, crushing or possible perforations.



B) Non flame propagation test:

The composition of the isolation of PVC type DMV-18, guarantees the non-flame propagation according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



**C) High temperature on service:**

The isolation of XLPE, improves the capacity of power transmission, elevating temperature in operating service up to 90 °C and short - circuit (5 s.) up to 250 °C, in contrast to 70/160 °C of PVC.

**D) Behaviour outdoors:**

Provides a good protection face to possible environmental agents, allowing its installation outdoors, underground, even in the presence of non-permanent humidity.

*Dimensional characteristics*

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km
RVFAV 0,6/1KV					
85770	1x16	14.4	0,7	344	1,15
80775	1x25	15.7	0,9	482	0,727
80776	1x35	16.9	0,9	592	0,524
80777	1x50	18.3	1	740	0,387
80778	1x70	20.5	1,1	1030	0,268
80779	1x95	21.5	1,1	1223	0,193
80780	1x120	24	1,2	1527	0,153
80781	1x150	25.1	1,4	1797	0,124
80782	1x185	27.7	1,6	2400	0,0991
80783	1x240	30.7	1,7	2760	0,0754
80784	1x300	34.3	1,8	3446	0,0601
RVFV 0,6/1KV					
80785	2x1.5	12,2	0,7	203,29	12,1
80786	2x2.5	13,4	0,7	230,15	7,41
80787	2x4	14,6	0,7	300	4,61
80788	2x6	16	0,7	363,12	3,08
80789	2x10	17,7	0,7	472,22	1,83
80790	2x16	20.6	0,7	772	1,15
80791	2x25	23	0,9	1100	0,727
80792	3x1.5	13.2	0,7	280	12,1



Available references of permanent stock and **Integrated Service** net



RVFAV/RV FV 0,6/1 kV

Next

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km
80793	3x2,5	13,7	0,7	347	7,41
80794	3x4	14,8	0,7	367	4,61
80820	3x6	16,9	0,7	525	3,08
80796	3x10	18,5	0,7	658	1,83
80797	3x16	20,2	0,7	893	1,15
80798	3x25	23,6	0,9	1286	0,727
80810	4x1,5	13,7	0,7	311	12,1
80811	4x2,5	15	0,7	368	7,41
80812	4x4	15,5	0,7	445	4,61
80813	4x6	17,7	0,7	576	3,08
80814	4x10	20	0,7	810	1,83
80815	4x16	22,6	0,7	1069	1,15
80870	5G1,5	14,6	0,7	341	12,1
80883	5G2,5	16	0,7	483	7,41
80550	5G4	17,9	0,7	517	4,61
80551	5G6	19,8	0,7	682	3,08
80867	5G10	21,7	0,7	1002	1,83
80868	5G16	23,8	0,7	1311	1,15
80869	5G25	29,3	0,9	2019	0,727



Available references of permanent stock and **Integrated Service** net

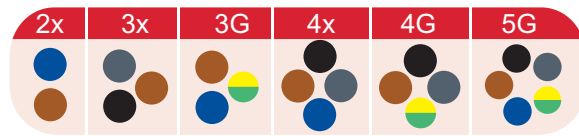
RVFAV/RV FV 0,6/1 kV



Presentation

* Only available in drums

Colours



XLPE 90°C

0,6 / 1 kV

barrynax AR-Corona

RVMV 0,6/1 kV

Definition

Technical definition: RVMV 0.6/1 kV

Voltage rating: 0.6/1 kV



Max. operative temperature:

operating service:90°C
short-circuit(5 s.)..... 250°C



Voltage test: Alternating current..... 3.5 kV.
Direct current..... 8.5 kV.

Constructive description:

Built according to UNE 21123-2 standard:

- 1 Solid electrolytic copper conductor class 1 and/or 2 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 XLPE Insulation type DIX 3 according to UNE HD 603-1 tabla 2A.
- 3 Stuffed of PVC (for multicore from 10 mm² size).
- 4



Cable simulation RVMV 0,6/1 kV 5G10 mm²

Applications

Installation type:FIXED.

Users Guide:

RVMV: " for the transport and distribution of electrical energy in fixed facilities, protected or not. Adapted for inner and outer facilities, on supports (outdoors), in tubes or buried. Unsuitable for facilities of feeding of submerged pumps." (UNE 21123-2)

On the other hand, it's specially indicated for its use in fixed facilities, in which a high risk of explosion exists; gas stations or pyrotechnics warehouses or with inflammable products. Its use in fixed facilities is recommended that can be put under possible mechanical aggressions, and tensile stress.

Suitable methods of installation:

The horizontal range between the clips will not be more than 20 times the diameter of the cable. The distance also is valid between points of support in case of tending on grids carries cables or on trays. In no case this distance must exceed 80 cm.

Functional characteristics

A) Mechanical protection:

The application of a double steel wire armour (or aluminum for the single-core ones) provides an excellent protection against accidental blows, crushing or possible perforations.



B) Tensile strength:

Tensile strength: The galvanized steel wire armour allows cable putting under permanent tensile stress.



C) Non flame propagation test:

The composition of the isolation of PVC type DMV-18, guarantees the non-propagation of the flame according to UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



**D) Non fire propagation test:**

According to UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3 standards.

**E) High temperature on service:**

The isolation of XLPE, improves the capacity of power transmission, elevating temperature in permanent service up to 90 °C and short - circuit (5 s.) up to 250 °C, in contrast with 70/160 °C of PVC.

**F) Behaviour outdoors:**

It provides an optimal protection against possible environmental agents, allowing its installation outdoors, underground, even in the presence of non-permanent humidity.

*Dimensional characteristics*

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

RVMV 0,6/1 kV					
80670	2x1.5	13,4	0,7	317	12,1
80671	2x2.5	13,9	0,7	381	7,41
80672	2x4	15,3	0,7	441	4,61
80673	2x6	17	0,7	539	3,08
80674	2x10	18,6	0,7	679	1,83
80675	2x16	20,8	0,7	880	1,15
80676	2x25	22,8	0,9	1500	0,727
80680	3x1.5	13,4	0,7	351	12,1
80700	3x2.5	14,5	0,7	410	7,41
80681	3x4	15,6	0,7	480	4,61
80682	3x6	17,5	0,7	601	3,08
80683	3x10	19,4	0,7	786	1,83
80684	3x16	23,3	0,7	1321	1,15
80685	3x25	26	0,9	1768	0,727
80701	4x1.5	14	0,7	397	12,1
80702	4x2.5	15,6	0,7	459	7,41
80703	4x4	16,8	0,7	557	4,61
80704	4x6	18,2	0,7	611,12	3,08



Available references of permanent stock and **Integrated Service** net



RVMV 0,6/1kV

Next

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

RVMV 0,6/1KV						
	80705	4x10	19,7	0,7	950	1,83
	80706	4x16	25,7	0,7	1661	1,15
	80620	5x1.5	15,8	0,7	441	12,1
	80633	5x2.5	17	0,7	544	7,41
	80619	5x4	16,7	0,9	653	4,61
	80618	5x6	20,1	0,7	817	3,08
	80615	5x10	23,7	0,7	1261	1,83
	80616	5x16	26,1	0,7	1423	1,15
	80617	5x25	30,4	0,9	1787	0,727



Available references of permanent stock and **Integrated Service** net

Presentation

* Only available in drums

Colours





barryflex multiple VV-K

VV-K 0,6/1 kV

Definition

Technical definition:VV-K 0.6/1 kV

Voltage rating: 0.6/1 kV



Max. operative temperature:

operating service:70°C

Size ≤ 300mm² - In short-circuit (5 s.).....160°C

Size > 300mm² - In short-circuit (5 s.).....140°C



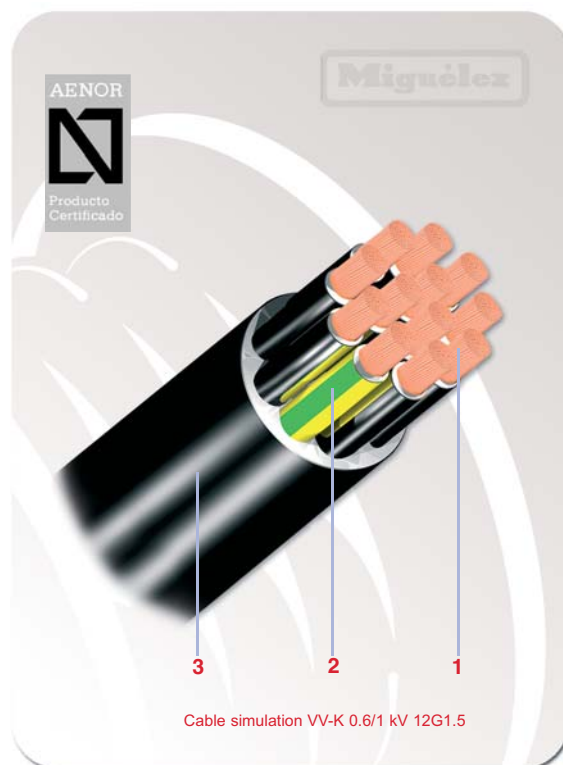
Voltage test: Alternating current:.....3.5 kV.

Direct current:.....8.5 kV.

Constructive description:

Built according to UNE 21123-1:

- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228



Cable simulation VV-K 0.6/1 kV 12G1.5

Applications

Installation type:FIXED

Users Guide:

VV-K: Perfect for Instrumentation & control systems, for the feeding of fixed facilities in buildings and industries. Its great flexibility makes it very practical in complex geometry facilities.

Suitable methods of installation:

The horizontal range between the clips will not be more than 20 times the diameter of the cable.

The distance also is valid between points of support in case of tending on grids carries cables or on trays.

In no case this distance must exceed 80 cm.

Functional characteristics

A) Flexibility:

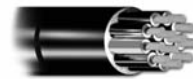
The use of flexible copper conductor forming a rope yarn of several very fine threads in combination with the isolation and PVC sheath provides these cables with exceptional degrees of flexibility.



B) Non flame propagation test:

The composition of the PVC sheath type ST 1, guarantees the non-flame propagation according to UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.





Dimensional characteristics

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

VV-K 0,6/1 kV

	81771	6G1.5	13,7	0,8	213,4	13,3
	81772	6G2.5	15,3	0,8	291,76	7,98
	81776	7G1.5	15,5	0,8	240,04	13,3
	81777	7G2.5	16,8	0,8	305,5	7,98
	81781	8G1.5	16,3	0,8	282,01	13,3
	81782	8G2.5	17	0,8	443	7,98
	81701	10G1.5	16,5	0,8	303,39	13,3
	81702	10G2.5	17,4	0,8	424,02	7,98
	81705	12G1.5	17,1	0,8	440	13,3
	81706	12G2.5	19,2	0,8	618	7,98
	81711	14G1.5	18,2	0,8	492	13,3
	81712	14G2.5	20,1	0,8	643	7,98
	81716	16G1.5	18,3	0,8	516	13,3
	81717	16G2.5	21,1	0,8	717	7,98
	81721	18G1.5	20,9	0,8	578	13,3
	81722	18G2.5	21,6	0,8	804	7,98
	81725	19G1.5	21	0,8	598	13,3
	81726	19G2.5	23	0,8	822	7,98
	81729	20G1.5	21,1	0,8	650	13,3
	81804	20G2.5	23,1	0,8	931	7,98
	81735	24G1.5	22,6	0,8	776	13,3
	81736	24G2.5	25,0	0,8	1027	7,98
	81740	27G1.5	24,2	0,8	804	13,3
	81741	27G2.5	26,6	0,8	1114	7,98
	81745	30G1.5	24,4	0,8	874	13,3
	81746	30G2.5	27,6	0,8	1217	7,98
	81749	33G1.5	25,4	0,8	947	13,3
	81750	33G2.5	27,8	0,8	1328	7,98
	81757	37G1.5	26,3	0,8	1040	13,3
	81758	37G2.5	30,0	0,8	1468	7,98

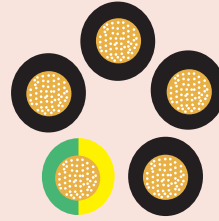




VV-K 0,6/1 kV

Colours

Identified according to the colour harmonised code standard EN 50334 being made up of green and yellow grounding wire (if available) and the rest of the black conductors with numeration in white or yellow, at intervals of 50 mm.



Presentation

Boxes, packages and standard pallet sizes

Cable type	M. pallet	Nominal section	meters
BARRYFLEX Múltiple vv-k	2800	6G1,5	100
BARRYFLEX Múltiple vv-k	1500	6G2,5	100
BARRYFLEX Múltiple vv-k	1500	7G1,5	100
BARRYFLEX Múltiple vv-k	1500	7G2,5	100

Rest of sizes: available in drums



Castilla y León Contemporary Art Museum
(León, Spain)

Building made using Miguélez Electrical Cables.



barryflex RV-K

RV-K 0,6 / 1 kV

Definition

Technical definition:RV-K 0.6/1 kV

Voltage rating: 0.6/1 kV

max. operative temperature:
operating service:90°C
short-circuit (5 s.).....250°C

Voltage test: Alternating current.....3.5 kV.
Direct current.....8.5 kV.

Constructive description:

Built according to UNE 21123-2 standard:

- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 XLPE insulation- cross-linked polyethylene type DIX 3 according to UNE HD 603-1 index 2 A.
- 3 PVC sheath type DMV-18 according to UNE HD 603-1 index 4A.

They appear in single-core formation and multicore of 1 to 5 insulated phases, depending on the installation necessities.

Minimum temperature allowed for the cable laying during it _____



Applications

Installation type:FIXED.

Users Guide:

RV-K: "for transport and distribution of electrical energy in fixed facilities, protected or not. Adapted for inner and outer facilities, on supports to the air, in buried tubes or. Unsuitable for submerged pumps.". (UNE 21123-2).

It's specially indicated for its use in distribution networks, attacks, public lighting installations and industrial facilities, whenever an important fire risk does not exist. Its great flexibility makes them specially recommended in complex geometry facilities.

Suitable methods of installation:

The horizontal range between the clips will not be more than 20 times the diameter of the cable. The distance also is valid between points of support in case of tending on grids carries cables or on trays. In no case this distance must exceed the 80 cm.

Functional characteristics

A) Flexibility:

The use of flexible copper conductor forming a rope yarn of several very fine threads in combination with the isolation and PVC sheath provides these cables with exceptional degree of flexibility.

B) Non flame propagation test:

The composition of the PVC sheath type DMV-18, guarantees the non-flame propagation according to UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.

C) Behaviour outdoors:

It provides an optimal protection against possible environmental agents, allowing its installation outdoors, underground, even in the presence of non-permanent humidity.































D) High temperature on service:

The isolation of XLPE, improves the capacity of power transmission, elevating temperature in operating service up to 90°C and short - circuit (5 s.) up to 250°C, in contrast with 70/160°C of PVC.





Dimensional characteristics

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
					
	mm ²	mm	mm	Kg/km	Ohm/km
RV-K 0,6/1KV					
 86202	1x1,5	5,97	0,7	42	13,3
 86203	1x2,5	6,36	0,7	57	7,98
 86204	1x4	7,02	0,7	78,5	4,95
 86205	1x6	7,51	0,7	94	3,30
 86206	1x10	8,47	0,7	139	1,91
 86207	1x16	9,68	0,7	207,8	1,21
 86208	1x25	11,2	0,9	291,3	0,780
 86209	1x35	12,4	0,9	388,2	0,554
 86210	1x50	13,9	1	540	0,386
 86211	1x70	17	1,1	729	0,272
 86212	1x95	18,2	1,1	946,4	0,206
 86213	1x120	20,5	1,2	1196	0,161
 86214	1x150	22,5	1,4	1490	0,129
 86215	1x185	25,6	1,6	1812	0,106
 86216	1x240	28,2	1,7	2375	0,0801
 86217	1x300	31	1,8	2943	0,0641
 86221	2x1,5	8,71	0,7	95,5	13,3
 86222	2x2,5	9,82	0,7	131	7,98
 86223	2x4	10,96	0,7	187	4,95
 86224	2x6	13,4	0,7	282,5	3,30
 86225	2x10	15,1	0,7	408	1,91
 86226	2x16	18,1	0,7	508	1,21
 86227	2x25	20,5	0,9	798	0,780
 86232	3G1,5	9,5	0,7	115	13,3



RV-K 0,6/ 1 kV

Next

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

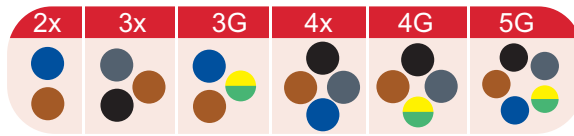
RV-K 0,6/1KV						
	86233	3G2,5	10,2	0,7	151	7,98
	86234	3G4	11,5	0,7	217	4,95
	86235	3G6	14,3	0,7	329	3,30
	86236	3G10	16,4	0,7	475	1,91
	86237	3x16	19	0,7	730	1,21
	86238	3x25	22,5	0,9	1042	0,780
	86247	4G1,5	9,8	0,7	132	0,780
	86248	4G2,5	11,3	0,7	185	0,554
	86249	4G4	12,6	0,7	258	0,386
	86250	4G6	15,3	0,7	402	0,272
	86251	4G10	17,6	0,7	620	0,206
	86252	4x16	21,1	0,7	948	0,161
	81764	5G1,5	11,1	0,7	163	0,129
	81766	5G2,5	12,5	0,7	222	13,3
	81767	5G4	14	0,7	316	7,90
	81768	5G6	16,7	0,7	496	4,95
	81765	5G10	19	0,7	750	3,30
	81778	5G16	23,1	0,7	1130	1,91
	81792	5G25	28,7	0,9	1683	1,21
	86253	4x25	23,5	0,9	1243	13,3
	86260	4x35	27,3	0,9	1701	7,98
	86261	4x50	31,5	1	2346	4,95
	86264	4x70	36	1,1	3231	3,30
	86262	4x95	41,3	1,1	4231	1,91
	86263	4x120	47,8	1,2	5494	1,21
	86265	4x150	53,2	1,4	6927	0,780



Available references of permanent stock and **Integrated Service** net



Colours



Presentation

Boxes, packages and standard pallet sizes

Cable type	M. pallet	Nominal section	meters
BARRYFLEX RV-K	4800	2x1,5	100
BARRYFLEX RV-K	3600	2x2,5	100
BARRYFLEX RV-K	3000	2X4	100
BARRYFLEX RV-K	2800	2X6	100
BARRYFLEX RV-K	4800	3G1,5	100
BARRYFLEX RV-K	3600	3G2,5	100
BARRYFLEX RV-K	3000	3G4	100
BARRYFLEX RV-K	2800	3G6	100
BARRYFLEX RV-K	4200	4G1,5	100
BARRYFLEX RV-K	3000	4G2,5	100
BARRYFLEX RV-K	3000	4G4	100
BARRYFLEX RV-K	1500	4G6	100
BARRYFLEX RV-K	3600	5G1,5	100
BARRYFLEX RV-K	3000	5G2,5	100
BARRYFLEX RV-K	2800	5G4	100
BARRYFLEX RV-K	1500	5G6	100

* Rest of sizes: available in drums

Definition

Technical definitionRVFAV-K/ RVFV-K 0.6/1 kV

Voltage rating:..... 0.6/1 kV



Max. operative temperature:

operating service90°C

short-circuit (5 s.).....250°C



Voltage test: Alternating current.....3.5 kV.
Direct current..... 8.5 kV.

Constructive description:

Built according to UNE 21123-2:

- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 XLPE insulation type DIX 3 according to UNE HD 603-1 index 2A.
- 3 PVC stuffed (for multi-core ones from 10 mm² size.
- 4 PVC inner sheath DMV-18 according to UNE HD 603-1 index 4A.
- 5 Double steel wire armour (or aluminum for single-core), applied in helix form.
- 6 PVC sheath type DMV-18 according to U



Cable simulation RVFV-K 0,6/1kV 2 x 10 mm².

Applications

Type of installation:FIXED.

Users Guide:

RVFAV/RVFV: "for transport and distribution of electrical energy in fixed facilities, protected or not. Adapted for inner and outer facilities, on supports to the air, in buried tubes or. Unsuitable for submerged pumps.". (UNE 21123-2)."

This specially indicated for its use in fixed facilities that can be put under possible mechanical aggressions.

Its agricultural and cattle use in production plants or facilities is recommended where the presence of rodents can suppose a threat for the integrity of the cable.

Also, recommended for its use in public lighting installations.

Suitable methods of installation:

The horizontal range between the clips will not be more than 20 times the diameter of the cable. The distance also is valid between points of support in case of tending on grids carries cables or on trays. In no case this distance must exceed 80 cm.

Functional characteristics

A) Mechanical protection:

The application of a double steel wire armour (or aluminum for the single-core ones) provides an excellent protection against accidental blows, crushing or possible perforations.



B) Non flame propagation test:

The composition of the PVC sheath type DMV-18, guarantees the non-flame propagation according to UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



**C) High temperature on service:**

The isolation of XLPE, improves the capacity of power transmission, elevating temperature in permanent service up to 90 °C and short - circuit (5 s.) up to 250 °C, in contrast with 70/160 °C of PVC.

**D) Outdoors behaviour:**

It provides an optimal protection before possible environmental agents, allowing its installation outdoors, underground, even in the presence of non-permanent humidity.

*Dimensional characteristics*

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

RVFAV-K/RVFBV-K 0,6/1KV

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
85001	1x25	14,6	0,9	441	0,78
85002	1x35	15,9	0,9	555	0,554
85003	1x50	17,8	1	718,9	0,386
85004	1x70	19,5	1,1	935,6	0,272
85005	1x95	21,1	1,1	1164,2	0,206
85006	1x120	23,3	1,2	1436,2	0,161
85007	1x150	25,2	1,4	1757,5	0,129
85008	1x185	28,1	1,6	2063,6	0,106
85009	1x240	30,5	1,7	2643,9	0,0801
85010	1x300	34,2	1,8	3269,6	0,0641
85011	2x1,5	10,6	0,7	201,6	13,3
85012	2x2,5	11,5	0,7	243,3	7,98
85013	2x4	12,9	0,7	311,3	4,95
85014	2x6	13,7	0,7	367,2	3,30
85015	2x10	16,7	0,7	554,3	1,91
85016	2x16	19,7	0,7	778,2	1,21
85017	2x25	21,7	0,9	1024,5	0,78
85018	2x35	24,3	0,9	1317,5	0,554
85019	2x50	28,3	1	1772	0,386
85020	3x1,5	11	0,7	221,2	13,3









RVFAV-K/RVFBV-K 0,6/1 kV

Next

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km
85021	3x2,5	12	0,7	272,6	7,98
85022	3x4	13,5	0,7	353,9	4,95
85023	3x6	14,4	0,7	427	3,30
85024	3x10	17,58	0,7	649,6	1,91
85025	3x16	20,18	0,7	893,8	1,21
85026	3x25	22,98	0,9	1250,2	0,78
85027	3x35	25,78	0,9	1625,8	0,554
85028	3x50	30,14	1	2211	0,386
85029	3x70	34,2	1,1	2971,4	0,272
85030	4x1,5	11,8	0,7	253,8	13,3
85031	4x2,5	12,9	0,7	315,7	7,98
85032	4x4	14,5	0,7	411,2	4,95
85033	4x6	15,5	0,7	502	3,30
85034	4x10	18,98	0,7	799,9	1,91
85035	4x16	21,78	0,7	983	1,21
85036	4x25	24,98	0,9	1543,6	0,78
85037	4x35	28,08	0,9	2009,4	0,554
85038	4x50	33,2	1	2786,5	0,386
85039	4x70	38,86	1,1	4202,9	0,272
85040	4x95	43,18	1,1	5328,2	0,206
85041	4x120	48,84	1,2	6648,9	0,161
85042	4x150	54,16	1,4	8229,8	0,129
85043	5x1,5	12,6	0,7	290,7	13,3
85044	5x2,5	13,8	0,7	364,2	7,98
85045	5x4	15,6	0,7	480,4	4,95

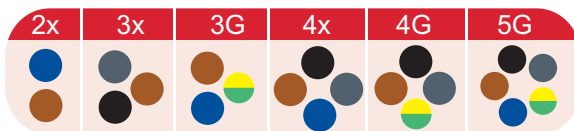
Next 

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
					
	mm ²	mm	mm	Kg/km	Ohm/km
85046	5x6	16,8	0,7	596,6	3,30
85047	5x10	20,48	0,7	943,1	1,91
85048	5x16	23,68	0,7	1314,5	1,21
85049	5x25	27,18	0,9	1869,3	0,78
85050	5x35	30,84	0,9	2490,6	0,554
85051	5x50	36,46	1	3436,5	0,386
85052	5x70	42,62	1,1	5134,8	0,272

Presentation

* Only available in drums

Colours



Definition

Technical definition:RVMV-K 0.6/1 kV

Voltage rating: 0.6/1 kV



Max. operative temperature:

operating service:90°C
short-circuit (5 s.).....250°C



Voltage test: **Alternating current.....3.5 kV.**
 Direct current.....8.5 kV.

Constructive description:

Built according to UNE 21123-2:

- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 XLPE insulation type DIX 3 according to UNE HD 603-1 index 2A.
- 3 Stuffed of PVC (for multicore from 10 mm² size).
- 4 PVC inner sheath type DMV-18 according to UNE HD 603-1 index 4A standard.
- 5 Steel wire galvanized armour index
- 6 PVC outer sheath type DMV-18, according to UNE HD 603-1 index 4A.



They appear in single-core formation and multicore of 1 to 5 insulated phases, depending on the installation necessities.

Minimum temperature allowed for the cable laying during its installation and assembly of accessories: 0°C



Applications

Installation type: FIXED

Users Guide:

RVMV: " for the transport and distribution of electrical energy in fixed facilities, protected or not. Adapted for inner and outer facilities, on supports (outdoors), in tubes or buried. Unsuitable for facilities of feeding of submerged pumps." (UNE 21123-2)

On the other hand, it's specially indicated for its use in fixed facilities, in which a high risk of explosion exists; gas stations or pyrotechnics warehouses or with inflammable products. Its use in fixed facilities is recommended to be able to put possible mechanical aggressions, and tensile stress.

Suitable methods of installation:

The horizontal range between the clips will not be more than 20 times the diameter of the cable. The distance also is valid between points of support in case of tending on grids carries cables or on trays. In no case this distance must exceed 80 cm.

Functional characteristics

A) Mechanical protection:

The application of a double steel wire armour (or aluminum for the single-core ones) offers an excellent protection against accidental blows, crushing or possible perforations.



B) Tensile strenght:

The steel wire galvanized armour allows the cable stay under permanent tensile stress.



C) Non flame propagation test:

The composition of the isolation of PVC type DMV-18, guarantees non-flame porpagation according to UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



**D) Non fire propagation test:**

According to UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3 standards.

**E) High temperature on service:**

The isolation of XLPE, improves the capacity of power transmission, elevating temperature in permanent service up to 90°C and short - circuit (5 s.) up to 250 °C, in contrast with 70/160 °C of PVC.

**F) Outdoor behaviour:**

It provides an optimal protection before possible environmental agents, allowing its outdoor installation, underground, even in the presence of non permanent humidity.

*Dimensional characteristics*

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

RVMV-K 0,6/1KV

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
85101	2x1,5	11,5	0,7	268,3	13,3
85102	2x2,5	12,4	0,7	314,3	7,98
85103	2x4	13,8	0,7	390,3	4,95
85104	2x6	14,6	0,7	455,5	3,3
85105	2x10	17,7	0,7	667,2	1,91
85106	2x16	19,9	0,7	869,2	1,21
85107	2x25	24,3	0,9	892,3	0,78
85108	3x1,5	11,9	0,7	288,9	13,3
85109	3x2,5	12,9	0,7	347,9	7,98
85110	3x4	14,4	0,7	440,7	4,95
85111	3x6	15,3	0,7	518,1	3,3
85112	3x10	18,5	0,7	768,3	1,91
85113	3x16	22,7	0,7	774,5	1,21
85114	3x25	25,5	0,9	1108,4	0,78
85115	4x1,5	12,7	0,7	327,1	13,3



RVMV-K 0,6/1 kV

Next

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

RVMV 0,6/1KV					
85116	4x2,5	13,8	0,7	395,8	7,98
85117	4x4	15,4	0,7	506	4,95
85118	4x6	16,4	0,7	600,3	3,3
85119	4x10	19,88	0,7	904,5	1,91
85120	4x16	24,28	0,7	937,4	1,21
85121	4x25	27,48	0,9	1364,1	0,78
85122	4x35	30,74	1	1820,2	0,554
85123	4x50	36,66	1,1	2527,9	0,386
85124	4x70	41,12	1,1	3450,3	0,272
85125	4x95	45,28	0,7	4431,6	0,206
85126	5x1,5	13,5	0,7	369,7	13,3
85127	5x2,5	14,7	0,7	453,5	7,98
85128	5x4	16,5	0,7	583	4,95
85129	5x6	17,7	0,7	704,3	3,3
85130	5x10	22,98	0,7	794,9	1,91
85131	5x16	26,18	0,7	1138,9	1,21
85132	5x25	29,84	0,9	1676,2	0,78

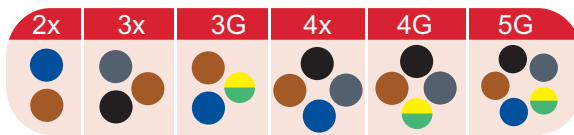
RVMV-K 0,6/1 kV



Presentation

* Only available in drums

Colours



XLPE 90°C

0,6 / 1 kV

afirenas múltiple (AS)

RZ1-K(AS) 0,6/1 kV

Definition

Technical definition:..... RZ1-K(AS) 0.6/1 kV

Voltage rating:..... 0.6/1 kV



Max. operative temperature:

permanent service:90°C
cortocircuito:.....250°C



Voltage test: Alternating current.....3.5 kV.
Direct current.....8.5 kV.

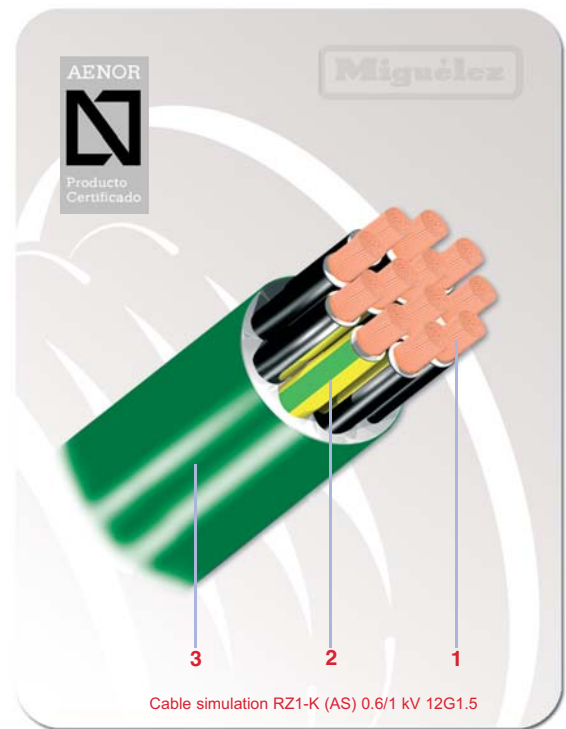
Constructive description:

According to UNE 21123-4 standard:

- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
 - 2 XLPE cross-linked polyethinene isolation type DIX 3 according to UNE HD 603-1 index 2A standard.
 - 3 Polyolefine sheath according to UNE 21123-4 standard.
- They appear in multicore formation from 6 to 60 insulated phases, in 1,5 mm² & 2,5 mm² sections.



Minimum temperature allowed for the cable laying during its installation and assembly of accessories: 0°C



Cable simulation RZ1-K (AS) 0.6/1 kV 12G1.5

Applications

Installation type:FIXED

Users Guide:

RZ1-K (AS): " for the transport and distribution of electrical energy in fixed facilities, protected or not. Adapted for inner and outer facilities, on supports(outdoors), in tubes or buried. Unsuitable for facilities of feeding of submerged pumps." (UNE 21123-4) Specially indicated for its use in distribution networks, facilities in public places (schools, hospitals, stores, cinemas, offices etc.) and in general whenever an important fire risk existence or where it requires a low smoke-emission and corrosive gases in case of fire.

Suitable methods of installation:

The horizontal range between the clips will not be more than 20 times the diameter of the cable. The distance also is valid between points of support in case of tending on grids carries cables or on trays. In no case this distance must exceed 80 cm.

Functional characteristics

A) Non flame propagation test:

The composition of the isolation of thermoplastic polyolefine, guarantees the non-flame propagation of the flame according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



B) Non fire propagation test:

According to UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3 standards.



C) Density of smoke (smoke-screening):

In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to UNE EN 61034-2 / EN 61034-2 / IEC 61034-2 standards.



D) Halogenous determination:

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: UNE EN 50267-2-1/ EN 50267-2-1 / IEC 60754-1 standards.



E) Acidity and gases corrosivity:

In case of fire, the index acidity and the conductivity the emanated gases according to UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1 standards. minimum PH ≥ 4,3 / maximum conductivity (μS/cm) ≤100.



F) Outdoor behaviour:

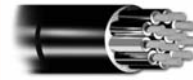
It provides an optimal protection before possible environmental agents, allowing its outdoor installation, underground, even in the presence of non permanent humidity.



0,6 / 1 kV



RZ1-K(AS) 0,6/1 kV



Dimensional characteristics

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

RZ1-K(AS) 0,6/1 kV

SI	84167	1,5	11,08	0,7	170	13,3
	84176	2,5	12,58	0,7	250	7,98
SI	84168	1,5	11,08	0,7	190	13,3
	84177	2,5	12,58	0,7	270	7,98
SI	84169	1,5	12,28	0,7	230	13,3
	84178	2,5	14,08	0,7	320	7,98
SI	84170	1,5	13,88	0,7	270	13,3
SI	84186	2,5	15,98	0,7	370	7,98
SI	84171	1,5	14,38	0,7	300	13,3
	84179	2,5	16,48	0,7	420	7,98
SI	84180	1,5	15,08	0,7	340	13,3
SI	84187	2,5	17,38	0,7	490	7,98
SI	84172	1,5	15,88	0,7	390	13,3
	84188	2,5	18,28	0,7	550	7,98
	84181	1,5	16,78	0,7	430	13,3
	84189	2,5	19,38	0,7	620	7,98
SI	84173	1,5	16,78	0,7	440	13,3
	84190	2,5	19,38	0,7	630	7,98
	84182	1,5	17,68	0,7	470	13,3
	84191	2,5	20,48	0,7	680	7,98
SI	84174	1,5	19,58	0,7	550	13,3
SI	84192	2,5	22,68	0,7	790	7,98
	84183	1,5	19,98	0,7	600	13,3
	84193	2,5	23,18	0,7	870	7,98
SI	84175	1,5	20,78	0,7	660	13,3
	84194	2,5	24,08	0,7	960	7,98
	84184	1,5	21,58	0,7	720	13,3
	84195	2,5	25,24	0,7	1060	7,98
	84185	1,5	22,48	0,7	790	13,3
	84196	2,5	26,24	0,7	1150	7,98

Available references of permanent stock and **Integrated Service** net

XLPE 90°C

0,6 / 1 kV

afirenas x (AS)

RZ1-K(AS) 0.6/1 kV

Definition

Technical definition: RZ1-K(AS) 0.6/1 kV

Voltage rating..... 0.6/1 kV



Max. operative temperature:

operating service:90°C
short-circuit:.....250°C



Voltage test: Alternating current.....3.5 kV.
Direct current.....8.5 kV.

Constructive description:

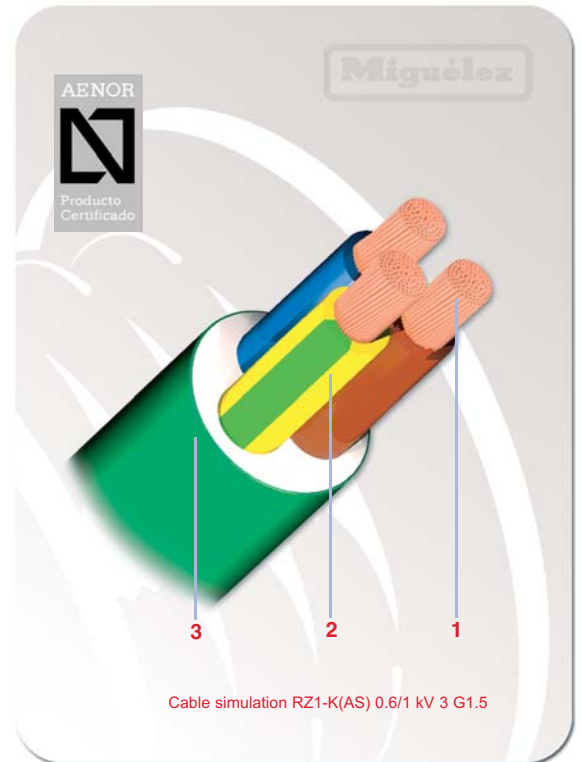
According to UNE 21123-4:

- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 XLPE insulation- cross-linked polyethylene type DIX 3 according to UNE HD 603-1 tabla 2A.
- 3 Polyolefine sheath according to UNE 21123-4.



They appear in single-pole formation and multicore of 1 to 5 insulated phases, depending on the installation necessities.

Minimum temperature allowed for the cable laying during its installation and assembly of accessories: 0°C



Applications

Installation type:FIXED

Users Guide:

RZ1-K (AS): "for transport and distribution of electrical energy in fixed facilities, protected or not. Adapted for inner and outer facilities. Non suitable for facilities of feeding of submerged pumps ". (UNE 21123-4)

It is specially indicated for its use in distribution networks, overhead distribution, public concurrence places (commercial schools, hospitals, shopping centers, cinemas, offices etc.) and in general whenever an important fire risk exists or where one requires a low smoke-emission and corrosive gases in case of fire.

Suitable methods of installation:

The horizontal range between the clips will not be more than 20 times the diameter of the cable. The distance also is valid between points of support in case of tending on grids carries cables or on trays. In no case this distance must exceed 80 cm.

Functional characteristics

A) Non flame propagation test:

The composition of the isolation of thermoplastic polyolefine, guarantees the non-flame propagation of the flame according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



B) Non fire propagation test:

According to UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3 standards.



C) Density of smoke (smoke-screening):

In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to UNE EN 61034-2 / EN 61034-2 / IEC 61034-2 standards.



D) Halogenous determination:

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: UNE EN 50267-2-1/ EN 50267-2-1 / IEC 60754-1 standards.



E) Acidity and gases corrosivity:

In case of fire, the index acidity and the conductivity the emanated gases according to UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1 standards. minimum PH \geq 4,3 / maximum conductivity (μ S/cm) \leq 100.



F) Outdoor behaviour:

It provides an optimal protection before possible environmental agents, allowing its outdoor installation, underground, even in the presence of non permanent humidity.



0,6 / 1 kV



RZ1-K(AS) 0.6/1 kV



Dimensional characteristics

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

RZ1-K 0,6/1 kV					
84001	1x1,5	5,7	0,7	48,4	13,3
84002	1x2,5	6,2	0,7	60	7,98
84003	1x4	6,7	0,7	79	4,95
84004	1x6	7,7	0,7	102	3,30
84005	1x10	8,4	0,7	150	1,91
84006	1x16	9,8	0,7	223	1,21
84007	1x25	11,4	0,9	300	0,780
84008	1x35	12,6	0,9	400	0,554
84009	1x50	14,3	1	547	0,386
84010	1x70	16,4	1,1	744	0,272
84011	1x95	17,9	1,1	947	0,206
84012	1x120	20,6	1,2	1224	0,161
84013	1x150	22,4	1,4	1507	0,129
84014	1x185	25	1,6	1835	0,106
84015	1x240	28	1,7	2393	0,0801
83999	1x300	31	1,8	3017	0,0641
84016	2x1,5	10,5	0,7	111	13,3
84017	2x2,5	11,3	0,7	149	7,98
84018	2x4	12,3	0,7	178	4,95
84019	2x6	13,8	0,7	278	3,30
84020	2x10	15,5	0,7	388	1,91
84048	2x16	18,5	0,7	440	1,21
84049	2x25	21,6	0,9	856	0,780
84021	3x1,5	10,7	0,7	158	13,3
84022	3x2,5	11,6	0,7	199	7,98

Available references of permanent stock and **Integrated Service** net

XLPE 90°C

0,6 / 1 kV



RZ1-K(AS) 0,6/1 kV

Next

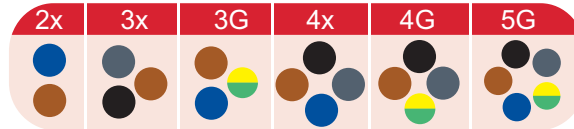
Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km
84023	3x4	13,3	0,7	260	4,95
84024	3x6	14,4	0,7	349	3,30
84025	3x10	16	0,7	480	1,91
84070	3x16	19	0,7	717	1,21
84088	3x25	22,9	0,9	1060	0,780
84030	4G1,5	11,5	0,7	160	13,3
84031	4G2,5	12,6	0,7	213	7,98
84032	4G4	14,5	0,7	300	4,95
84033	4G6	15,5	0,7	412	3,30
84034	4G10	18	0,7	602	1,91
84035	4x16	21,5	0,7	755	1,21
84082	4x25	21	0,9	1180	0,780
84083	4x35	24,2	0,9	1603	0,554
84084	4x50	30,5	1	2348	0,386
84076	4x70	34,8	1,1	3235	0,272
84077	4x95	39,6	1,1	4260	0,206
84078	4x120	44,5	1,2	5350	0,161
84079	4x150	49,5	1,4	6745	0,129
84036	5G1,5	12,5	0,7	214	13,3
84037	5G2,5	14,4	0,7	272	7,98
84038	5G4	15,5	0,7	324	4,95
84039	5G6	16,8	0,7	500	3,30
84040	5G10	19,7	0,7	737	1,91
84041	5G16	24,5	0,7	1101	1,21
84071	5G25	27,6	0,9	1500	0,780



Available references of permanent stock and **Integrated Service** net



Colours



Presentation

Boxes, packages and standard pallet sizes

Cable type	M. pallet	Nominal section	meters
AFIRENAS X	4800	2x1,5	100
AFIRENAS X	3600	2x2,5	100
AFIRENAS X	3000	2X4	100
AFIRENAS X	2800	2X6	100
AFIRENAS X	4800	3G1,5	100
AFIRENAS X	3600	3G2,5	100
AFIRENAS X	3000	3G4	100
AFIRENAS X	2800	3G6	100
AFIRENAS X	4200	4G1,5	100
AFIRENAS X	3000	4G2,5	100
AFIRENAS X	3000	4G4	100
AFIRENAS X	1500	4G6	100
AFIRENAS X	3600	5G1,5	100
AFIRENAS X	3000	5G2,5	100
AFIRENAS X	2800	5G4	100
AFIRENAS X	1500	5G6	100

* Rest of sizes: available in drums

afirenas DI-X (AS)

DI-X RZ1-K(AS) 0.6/1 kV

Definition

Technical definition:DI-X RZ1-K(AS) 0.6/1 kV

Voltage rating:.....0.6/1 kV



Max. operative temperature:

operating service:90°C

short-circuit:250°C



Voltage test: Alternating current.....3.5 kV.
Direct current.....8.5 kV.

Constructive construction:

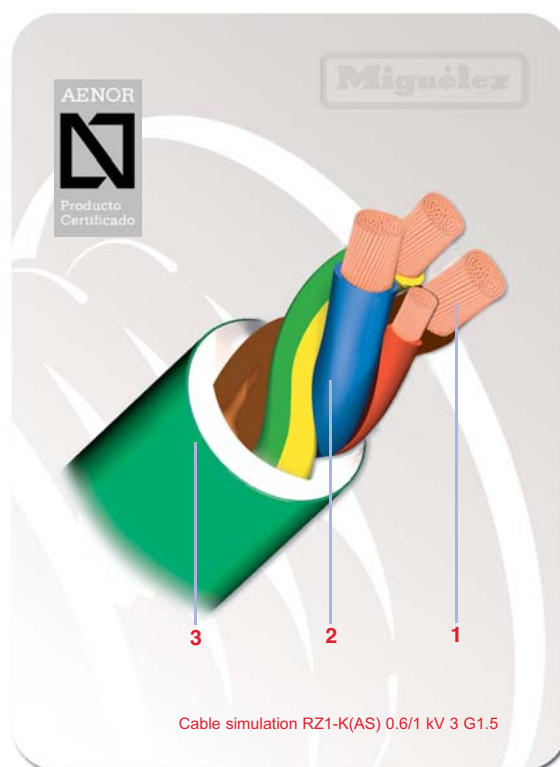
According to UNE 21123-4 standard:

- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 XLPE cross-linked polyethylene insulation type DIX 3 according to UNE HD 603-1 tabla 2A.
- 3 Polyolefine sheath according to UNE 21123-4.



They appear in formations: phase, neutral, protection and the conductor of section 1.5 (red isolation) for control

Minimum temperature allowed for the cable laying during its installation and assembly of accessories: 0°C



Applications

Installation type:FIXED

User Guide:

RZ1-K (AS): "for transport and distribution of electrical energy in fixed facilities, protected or not. Adapted for inner and outer facilities. Nonapt for facilities of feeding of submerged pumps ". (UNE 21123-4) It is specially indicated for its use in distribution networks, overhead distribution, public concurrence places (commercial schools, hospitals, shopping centers, cinemas, offices etc.) and in general whenever an important fire risk exists or where one requires a low smoke-screening and corrosive gases in case of fire. For the individual derivations in connection facilities.

Suitable methods of installation:

The horizontal range between the clips will not be more than 20 times the diameter of the cable. The distance also is valid between points of support in case of tending on grids carries cables or on trays. In no case this distance must exceed 80 cm.

Functional characteristics

A) Non flame propagation test:

The composition of the isolation of thermoplastic polyolefine, guarantees the non-flame propagation of the flame according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



B) Non fire propagation test:

According to UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3 standards.



C) Density of smoke (smoke-screening):

In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to UNE EN 61034-2 / EN 61034-2 / IEC 61034-2 standards.



D) Halogenous determination:

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: UNE EN 50267-2-1/ EN 50267-2-1 / IEC 60754-1 standards.



E) Acidity and gases corrosivity:

In case of fire, the index acidity and the conductivity the emanated gases according to UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1 standards. minimum PH \geq 4,3 / maximum conductivity (μ S/cm) \leq 100.



F) Outdoor behaviour:

It provides an optimal protection before possible environmental agents, allowing its outdoor installation, underground, even in the presence of non permanent humidity.



0,6 / 1 kV



DI-X RZ1-K(AS) 0.6/1 kV



Dimensional characteristics

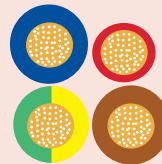
Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

RZ1-K 0,6/1 kV

84422	3G10+1x1,5	14	0,7	420	1,91-13,3
84423	3G16+1x1,5	16,5	0,7	600	1,21-13,3
84424	3G25+1x1,5	20	0,9-0,7	900	0,78-13,3
84425	3G35+1x1,5	23	0,9-0,7	1217	0,554-13,3

Colours and marked

The norm UNE 211002 section. 2.6 says: "cables object of this norm must be marked with the abbreviations (AS = high security) that indicate their non-fire propagation characteristic".



XLPE 90°C

0,6 / 1 kV

afirenas AR-Fleje (AS)

RZ1FAZ1-K(AS)/RZ1FZ1-K(AS) 0,6/1 kV

Definition

Technical definition:RZ1FAZ1-K(AS)/ RZ1FZ1-K(AS).

Voltage rating: 0,6/1 kV



Max. operative temperature

operating service:90°C

short-circuit (5 s.).....250°C



Voltage tension: Alternating current.....3.5 kV.
Direct current..... 8.5 kV.

Constructive description:

According to UNE 21123-4 standard:

- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 XLPE insulation type DIX 3 according to UNE HD 603-1 index2A standard.
- 3 Polyolefine stuffed (for multicore from 10 mm² section).
- 4 Polyolefine inner sheath according to UNE 21123-4 Annexed 1 index 1 standard.
- 5



Applications

Installation type:FIXED

Users Guide:

RZ1FAZ1-K(AS)/ RZ1FZ1-K(AS): "for transport and distribution of electrical energy in fixed facilities, protected or not. Adapted for inner and outer facilities. Non suitable for facilities of feeding of submerged pumps ". (UNE 21123-2)

This specially indicated for its use in fixed facilities that can be put under possible mechanical and/or cizalladuras aggressions. Its agricultural and cattle use in production plants or facilities is recommended where the presence of rodents can suppose a threat for the integrity of the cable.

Also is recommended its use in public lighting installations.

Suitable methods of installation:

The horizontal range between the clips will not be more than 20 times the diameter of the cable. The distance also is valid between points of support in case of tending on grids carries cables or on trays. In no case this distance must exceed 80 cm.

Functional characteristics

A) Mechanical portection:

The application of a double steel wire armour (or aluminum for the single-core ones) provides an excellent protection against accidental blows, crushing or possible perforations.



B) Non flame propagation test:

The polyolefine sheath composition guarantees the non-flame propagation according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



C) Non fire propagation test:

According to UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3 standards



0,6 / 1 kV



RZ1FAZ1-K(AS)/RZ1FZ1-K(AS) 0,6/1 kV

**D) High service temperature:**

The XLPE isolation, improves the capacity of power transmission, when elevating temperature in operating service to 90°C and in short-circuit (5 s.) to 250°C, in contrast to 70/160°C of PVC.

**E) Outdoor behaviour:**

It provides an optimal protection before possible environmental agents, allowing its outdoor installation, underground, even in the presence of non permanent humidity.

**F) Halogenous determination:**

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: UNE EN 50267-2-1 / EN 50267-2-1 / IEC 60754-1 standards.

**G) Acidity and gases corrosivity:**

In case of fire, the index acidity and the conductivity the emanated gases according to UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1 standards. minimum PH $\geq 4,3$ / maximum conductivity ($\mu\text{S}/\text{cm}$) ≤ 100 .

**H) Density of smoke (smoke-screening):**

In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to UNE EN 61034-2 / EN 61034-2 / IEC 61034-2 standards.

**Dimensional characteristics**

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

RZ1FAZ1-K(AS) / RZ1FZ1-K(AS)

84347	1x25	14,7	0,9	452,1	0,78
84302	1x35	16,0	0,9	567,3	0,554
84348	1x50	17,9	1	733,1	0,386
84349	1x70	19,6	1,1	951,5	0,272
84300	1x95	21,2	1,1	1181,7	0,206
84350	1x120	23,4	1,2	1455,9	0,161
84301	1x150	25,3	1,4	1779,1	0,129
84351	1x185	28,2	1,6	2088,1	0,106
84352	1x240	30,5	1,7	2660,7	0,0801
84353	1x300	34,2	1,8	3289,3	0,0641
84354	2x1,5	10,6	0,7	206,9	13,3
84310	2x2,5	11,5	0,7	249,1	7,98
84311	2x4	12,9	0,7	318,1	4,95
84312	2x6	13,7	0,7	174,6	3,30
84313	2x10	16,8	0,7	567	1,91
84314	2x16	19,8	0,7	793,3	1,21

XLPE 90°C

0,6 / 1 kV



RZ1FAZ1-K(AS)/RZ1FZ1-K(AS) 0,6/1 kV

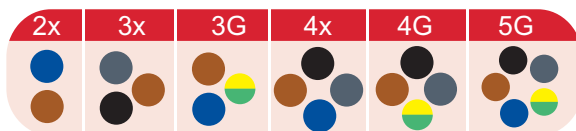
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Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km
RZ1FAZ1-K(AS)-RZ1FZ1-K(AS)					
84315	2x25	21,8	0,9	1041	0,78
84316	2x35	24,4	0,9	1335,9	0,554
84526	2x50	28,4	1	1793	0,386
84317	3x1,5	11	0,7	226,6	13,3
84318	3x2,5	12	0,7	278,6	7,98
84319	3x4	13,5	0,7	360,9	4,95
84320	3x6	14,4	0,7	434,6	3,30
84321	3x10	17,6	0,7	663,3	1,91
84322	3x16	20,2	0,7	909,6	1,21
84323	3x25	23	0,9	1268,2	0,78
84324	3x35	25,8	0,9	1646,1	0,554
84527	3x50	30,14	1	2224,4	0,386
84528	3x70	34,2	1,1	2968,7	0,272
84325	4x1,5	11,8	0,7	259,6	13,3
84326	4x2,5	12,9	0,7	322,2	7,98
84327	4x4	14,5	0,7	418,7	4,95
84328	4x6	15,5	0,7	510,1	3,30
84329	4x10	19	0,7	817,4	1,91
84330	4x16	21,8	0,7	994,5	1,21
84331	4x25	25	0,9	1566,3	0,78
84332	4x35	28,1	0,9	2034,8	0,554
84355	4x50	33,2	1	2805,2	0,386
84356	4x70	38,9	1,1	4225,7	0,272
84357	4x95	43,2	1,1	5356,1	0,206
84358	4x120	48,8	1,2	6681,2	0,161
84359	4x150	54,16	1,4	8268,6	0,129



Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km
84333	5x1,5	12,6	0,7	297	13,3
84334	5x2,5	13,8	0,7	371,2	7,98
84335	5x4	15,6	0,7	488,6	4,95
84336	5x6	16,8	0,7	605,5	3,30
84337	5x10	20,5	0,7	962,1	1,91
84338	5x16	23,7	0,7	1336,3	1,21
84339	5x25	27,2	0,9	1894,1	0,78
84340	5x35	30,84	0,9	2507,4	0,554
84529	5x50	36,46	1	3458,4	0,386
84530	5x70	42,6	1,1	5161,3	0,272

Colours



Presentation

* Only available in drums

afirenas AR-Corona (AS)

RZ1MZ1-K(AS) 0,6/1kV

Definition

Technical designation: RZ1MZ1-K(AS)

Voltage rating: 0.6/1 kV



Max. operative temperature:

operating service:90°C

short-circuit(5 s.)250°C



Voltage test: Alternating current.....3.5 kV.
Direct current.....8.5 kV.

Constructive description:

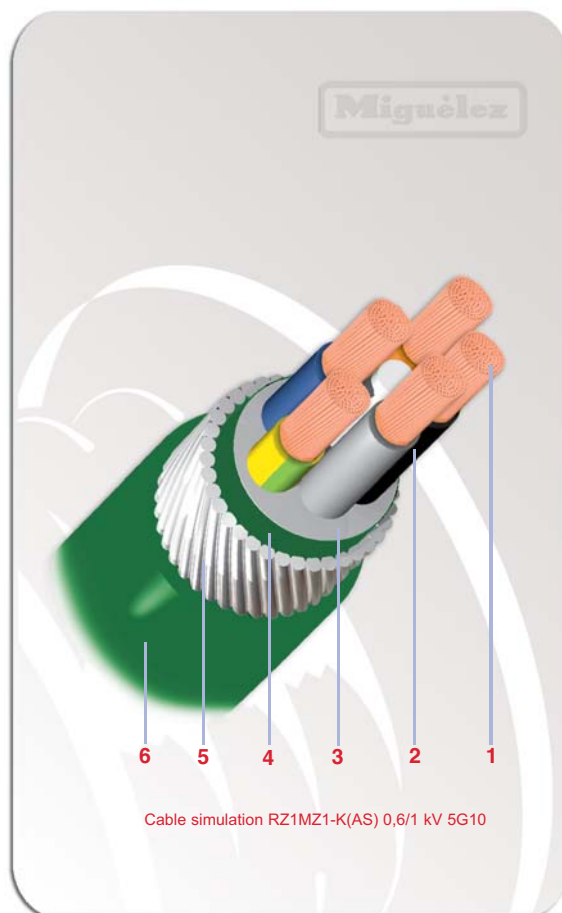
According to UNE 21123-4 standard:

- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 XLPE insulation type DIX 3 according to UNE HD 603-1 index 2A standard.
- 3 Polyolefine stuffed (for multicore from 10 mm² size).
- 4 Inner polyolefine sheath UNE 21123-4 index 1.
- 5 Galvanized round steel wire armour
- 6 Polyolefine outer sheathed according to UNE 21123-4 annexed 1 index 1.



They appear in single-core formation and multicore of 1 to 6 insulated phases, depending on installation necessities.

Minimum temperature allowed for the cable laying during its installation and assembly of accessories: 0°C



Applications

Tipo de instalación:FIXED

Users guide:

RZ1MZ1-K(AS): " for the transport and distribution of electrical energy in fixed wirings, protected or not. Adapted for inner and outer facilities, on supports(outdoors), in tubes or buried. Non suitable for facilities of feeding of submerged pumps."(UNE 21123-4) On the other hand, it's specially indicated for its use in fixed facilities, in which a high risk of explosion exists; gas stations or pyrotechnics warehouses or with inflammable products. Its use in fixed facilities is recommended face to possible mechanical aggressions, and tensile stress.

Suitable methods of installation:

The horizontal range between the clips will not be more than 20 times the diameter of the cable. The distance also is valid between points of support in case of tending on grids carries cables or on trays. In no case this distance must exceed 80 cm.

Functional characteristics

A) Mechanical protection:

The application of a double steel wire armour (or aluminum for the single-core ones) provides an excellent protection against accidental blows, crushing or possible perforations.



B) Tensile strength:

Galvanized steel thread crown armor allows the cable to be put under permanent tensile stress.



C) Non flame propagation test:

The composition of the isolation of thermoplastic polyolefine, guarantees the non-flame propagation of the flame according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



0,6 / 1 kV



RZ1MZ1-K(AS) 0,6/1kV

**D) Non fire propagation test:**

According to UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3 standards.

**E) High service temperature:**

The XLPE isolation, improves the capacity of power transmission, when elevating temperature in operating service to 90°C and in short-circuit (5 s.) to 250°C, in contrast to 70/160°C of PVC.

**F) Outdoor behaviour:**

It provides an optimal protection before possible environmental agents, allowing its outdoor installation, underground, even in the presence of non permanent humidity.

**G) Acidity and gases corrosivity:**

In case of fire, the index acidity and the conductivity the emanated gases according to UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1 standards. minimum PH $\geq 4,3$ / maximum conductivity ($\mu\text{S}/\text{cm}$) ≤ 100 .

**H) Halogenous determination:**

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: UNE EN 50267-2-1/ EN 50267-2-1 / IEC 60754-1 standards.

**I) Density of smoke (smoke-screening):**

In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to UNE EN 61034-2 / EN 61034-2 / IEC 61034-2 standards.

**Dimensional characteristics**

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km
RZ1MZ1-K(AS) 0,6/1kV					
84370	2x1,5	11,5	0,7	277,3	13,3
SI 84371	2x2,5	12,4	0,7	324,6	7,98
SI 84372	2x4	13,8	0,7	403	4,95
SI 84373	2x6	14,6	0,7	469,5	3,30
84374	2x10	17,7	0,7	680,7	1,91
84375	2x16	20,08	0,7	894	1,21
84376	2x25	24,3	0,9	910,6	0,780
SI 84380	3x1,5	11,9	0,7	297,8	13,3
SI 84381	3x2,5	12,9	0,7	358,2	7,98
SI 84382	3x4	14,4	0,7	453,1	4,95
SI 84383	3x6	15,3	0,7	531,8	3,30
84384	3x10	18,3	0,7	774	1,91
84385	3x16	22,7	0,7	792	1,21
84386	3x25	25,5	0,9	1128,3	0,78

XLPE 90°C

0,6 / 1 kV



RZ1MZ1-K(AS) 0,6/1 kV

Next

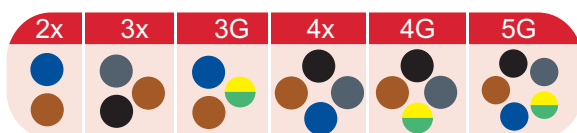
Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

RZ1MZ1-K(AS) 0,6/1 kV						
	84390	4x1,5	12,7	0,7	336,7	13,3
	84391	4x2,5	13,8	0,7	406,8	7,98
	84392	4x4	15,4	0,7	519,1	4,95
	84393	4x6	16,4	0,7	614,8	3,30
	84394	4x10	19,7	0,7	906,9	1,91
	84395	4x16	24,3	0,7	956,6	1,21
	84396	4x25	27,5	0,9	1386	0,780
	84397	4x35	30,74	0,9	1845,7	0,554
	84398	4x50	36,7	1	2560,3	0,386
	84399	4x70	41,12	1,1	3487,7	0,272
	84400	4x95	45,3	1,1	4473,9	0,206
	84403	5x1,5	13,5	0,7	380,2	13,3
	84404	5x2,5	14,7	0,7	465,5	7,98
	84405	5x4	16,5	0,7	597,3	4,95
	84406	5x6	17,7	0,7	720,4	3,3
	84407	5x10	23	0,7	813,1	1,91
	84408	5x16	26,2	0,7	1159,8	1,21
	84409	5x25	29,84	0,9	1701,1	0,78



Available references of permanent stock and **Integrated Service** net

Colours



Presentation

* Only available in drums



afirefenix (AS+)

SZ1-K(AS+) 0,6/1 kV PH90

Fire resistance is determined by the standardized test according to **UNE-EN 50200**, (Test method of fire resistance of small dimension cables without protection, for use in emergency circuits).

This characteristic makes **Afirefenix** a **High Security (AS+)** cable.

PH90: It is the fire resistance classification for the continuity of the signal in the electrical provision during 90 min. (According to UNE EN 50200 Index D)

(AS+): Indicates its behavior against resistance and reaction to the fire tests prescribed in this standard.



Definition

Technical definition:SZ1-K(AS+) 0,6/1 kV PH90

Voltage rating:..... 0.6/1 kV



Max.operative temperature:

operating service:**90°C**
short-circuit (5 s.).....**250°C**



Voltage test: Alternating current.....**3.5 kV.**
Direct current.....**8.5 kV.**

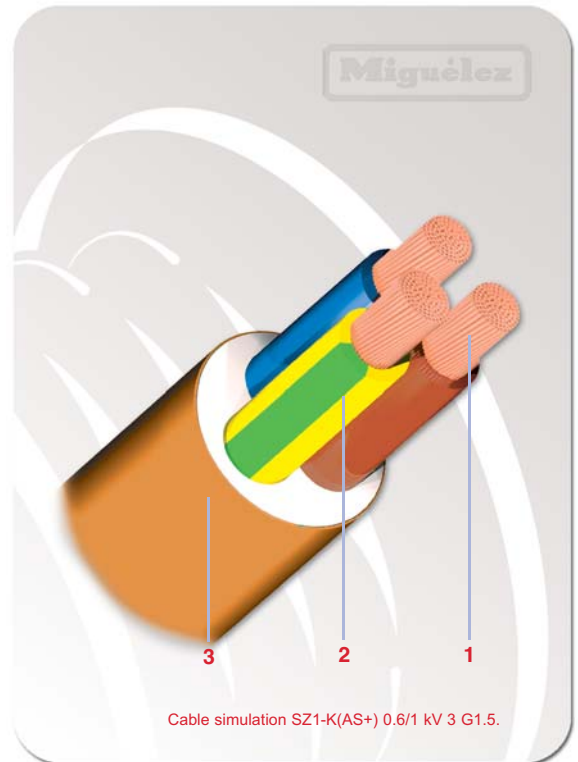
Constructive description:

according to **EA-025** standard:

- 1** Flexible electrolytic copper conductor class 5 according to **UNE-EN 60228/ EN 60228 /IEC 60228** standard.
N° of conductors: 1,2,3,4,5 - section: 1,5 - 300 mm²
- 2** Isolation made of a special cross-linked 0 halogenous compound.
- 3** Thermoplastic polyolefine sheath according to **UNE 21123-4** index 1, Annexed1.

The identification of the conductors will be made according to UNE-EN 21089-1. They appear in single-core formation and multi-core of 1 to 5 isolated phases, depending on the installation necessities. Orange sheath colour.

Minimum temperature allowed for the cable laying during its installation and assembly of accessories: 0°C



Applications

Installation type:FIXED

SZ1-K(AS+) 0,6/1 kV PH90: These cables are adapted to use in non independent circuits of security and circuits of services with centralized independent sources. Alarm circuits, signaling and emergency lighting systems, acoustic signaling, smoke extractors, water pumps for fire extinction.

Functional characteristics

A) Non flame propagation test:

The composition of the isolation of thermoplastic polyolefine, guarantees the non-flame propagation of the flame according to: **UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1** standards.



B) Non fire propagation test:

According to **UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3** standards.



C) Density of smoke (smoke-screening):

In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to **UNE EN 61034-2 / EN 61034-2 / IEC 61034-2** standards.



**D) Acidity and gases corrosivity:**

In case of fire, the index acidity and the conductivity the emanated gases according to **UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1** standards. minimum PH $\geq 4,3$ / maximum conductivity ($\mu\text{S}/\text{cm}$) ≤ 100 .

**E) Halogenous determination:**

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: **UNE EN 50267-2-1/ EN 50267-2-1 / IEC 60754-1** standards.






**F) Fire resistance:**

According to **UNE-EN 50200 / EN 50200** standards.



* For cables of diameter over 20 mm or nominal cross section over 2.5 mm².
UNE EN 50362 standard will be applied.

Dimensional characteristics

Code	Nominal cross section	Ø Overall	Weight	Conductor resistance 20°C
				
	mm ²	mm	Kg/km	Ohm/km

SZ 1 - K (AS+) 0,6 / 1 kV PH90

85500	1x1,5	5,85	54	13,3
85501	1x2,5	6,37	68	7,98
85502	1x4	7,35	95	4,95
85503	1x6	7,85	117	3,3
85504	1x10	8,7	162	1,91
85505	1x16	9,7	222	1,21
85506	1x25	11,4	322	0,78
85507	1x35	12,7	423	0,554
85508	1x50	14,6	581	0,386
85509	1x70	16,1	768	0,272
85510	1x95	18,2	1012	0,206
85511	1x120	20	1249	0,161
85512	1x150	22,4	1564	0,129
85513	1x185	25	1885	0,106



SZ 1-K 0.6/1 KV (AS+)

Next

Code	Nominal cross section	Ø Overall	Weight	Conductor resistance 20°C
	mm ²	mm	Kg/km	Ohm/km

SZ 1-K (AS+) 0,6/1 kV PH90				
85514	1x240	27,8	2460	0,0801
85515	1x300	31,7	3073	0,0641
85516	2x1,5	8,9	122	13,3
85517	2x2,5	9,9	158	7,98
85518	2x4	11,9	233	4,95
85519	2x6	12,9	290	3,3
85520	2x10	14,6	405	1,91
85521	2x16	16,6	561	1,21
85522	2x25	20	831	0,78
85523	3G1,5	9,4	143	13,3
85524	3G2,5	10,5	188	7,98
85525	3G4	12,6	279	4,95
85526	3G6	13,7	353	3,3
85527	3G10	15,5	502	1,91
85529	3G16	17,6	704	1,21
85530	3x25	21,3	1052	0,78
85531	4G1,5	10,2	171	13,3
85532	4G2,5	11,4	225	7,98
85533	4G4	13,8	339	4,95
85534	4G6	15	431	3,3
85535	4G10	17	620	1,91
85536	4x16	19,4	879	1,21
85537	4G16	19,4	879	1,21
85538	4x25	23,5	1315	0,78
85548	4G25	23,5	1315	0,78
85547	4x35	28,5	1883	0,554
85539	4x50	33,4	2632	0,386
85552	4x70	37,7	3527	0,272
85549	4x95	41,5	4510	0,206
85551	4x120	47,6	5792	0,161



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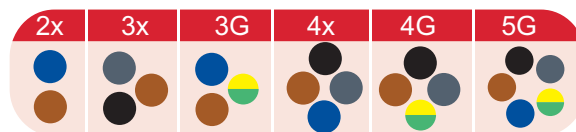
Code	Nominal cross section	Ø Overall	Weight	Conductor resistance 20°C
	mm ²	mm	Kg/km	Ohm/km

SZ1-K(AS+) 0,6/1 kV PH90				
85553	4x150	53,1	7221	0,129
85540	5G1,5	11	203	13,3
85541	5G2,5	12,4	271	7,98
85542	5G4	15,1	412	4,95
85543	5G6	16,4	524	3,3
85544	5G10	18,7	761	1,91
85545	5G16	21,4	1089	1,21
85546	5G25	26	1633	0,78
85550	5G35	31,3	2318	0,554
85554	5G50	37,1	3277	0,386

Colours and marked

This cable must have printed on sheath:

- Trademark, or manufacturer's name
- Voltage rating
- Designation code
- The number of conductors and the section (separated by symbol "X" in absence of an isolated conductor of yellow-green color; or of symbol "G" when a yellow-green isolated conductor exists.
- At least, the two last numbers of the year of manufacture.



Presentation

* Only available in drums

Definition

Technical definition:SZ1FZ1-K(AS+)/SZ1FZ1-K(AS+)0,6/1 kV PH90

Voltage rating:.....0.6/1 kV



Max. operative temperature:

operating service:90°C
short-circuit (5 s.).....250°C



Voltage test: Alternating current.....3.5 kV.
 Direct current..... 8.5 kV.

Constructive description:

according to EA 025 standard:

- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 Isolation made of a special cross-linked halogen free compound.
- 3 Polyolefine stuffed(for multi-core from 10 mm² section).
- 4 Polyolefine inner sheath according to UNE 21123-4 annexed 1 index 1.
- 5 Double steel wire armour
- (



Applications

Installation type:FIXED

Guía de utilización:

SZ1FZ1-K(AS+)/SZ1FZ1-K(AS+)0,6/1 kV PH90:

These cables are recommended for all those facilities in which we should maintain the integrity of the circuits although these are affected directly by the fire. Specially recommended for circuits of security, for example:
These cables are adapted to use in non independent circuits of security and circuits of services with centralized independent sources. Alarm circuits, signaling and emergency lighting systems, acoustic signaling, smoke extractors, water pumps for fire extinction. Highly recommended in agricultural / cattle production plants or facilities, where the presence of rodents can suppose a threat for the integrity of the cable. Also it is highly recommended in public lightning installations.

Functional characteristics

A) Non flame propagation test:

The composition of the isolation of thermoplastic polyolefine, guarantees the non-flame propagation of the flame according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



B) Non fire propagation test:

According to UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3 standards.



C) Density of smoke (smoke-screening):

In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to UNE EN 61034-2 / EN 61034-2 / IEC 61034-2 standards.



0,6 / 1 kV

90°      

SZ1FZ1-K(AS+)/SZ1FZ1-K(AS+)0,6/1 kV PH90

D) Acidity and gases corrosivity:

In case of fire, the index acidity and the conductivity the emanated gases according to **UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1** standards. minimum PH $\geq 4,3$ / maximum conductivity ($\mu\text{S}/\text{cm}$) ≤ 100 .

**E) Halogenous determination:**

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: **UNE EN 50267-2-1/ EN 50267-2-1 / IEC 60754-1** standards.







**F) Fire resistance:**

According to **UNE-EN 50200 / EN 50200** standards.



* For cables of diameter over 20 mm or nominal cross section over 2.5 mm².
UNE EN 50362 standard will be applied.

Dimensional characteristics

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
					
	mm ²	mm	mm	Kg/km	Ohm/km

SZ1FZ1-K(AS+)/SZ1FZ1-K(AS+)0,6/1 kV PH90					
85700	1x25	15,6	0,9	476,3	0,78
85701	1x35	16,9	0,9	590,9	0,554
85702	1x50	18,8	1	766,8	0,386
85703	1x70	20,3	1,1	969	0,272
85704	1x95	22,2	1,1	1219,3	0,206
85705	1x120	24	1,2	1473,7	0,161
85706	1x150	26,2	1,4	1791,8	0,129
85707	1x185	28,8	1,6	2129,1	0,106
85708	1x240	31,56	1,7	2717,5	0,0801
85709	1x300	35,42	1,8	3349,1	0,0641
85710	2x1,5	11,1	0,7	223,8	13,3
85711	2x2,5	12,1	0,7	270,1	7,98
85712	2x4	14,1	0,7	365,2	4,95
85713	2x6	15,1	0,7	432,2	3,3
85714	2x10	18	0,7	625,7	1,91
85715	2x16	20	0,7	807,9	1,21
85716	2x25	23,6	0,9	1131,7	0,78

Termoestable 90°C

0,6 / 1 kV



SZ1FZ1-K(AS+)/SZ1FZ1-K(AS+)0,6/1 kV PH90

Next

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

SZ1FZ1-K(AS+)/SZ1FZ1-K(AS+)0,6/1 kV PH90

85717	2x35	26,2	0,9	1431,1	0,554
85718	2x50	30,2	1	1918,3	0,386
85719	3x1,5	11,6	0,7	247,4	13,3
85720	3x2,5	12,7	0,7	303,6	7,98
85721	3x4	14,8	0,7	412,6	4,95
85722	3x6	15,9	0,7	497,1	3,3
85723	3x10	18,9	0,7	727,6	1,91
85724	3x16	21,2	0,7	967,5	1,21
85725	3x25	24,9	0,9	1356,9	0,78
85726	3x35	27,7	0,9	1737,1	0,554
85727	3x50	32,16	1	2362,8	0,386
85728	3x70	35,72	1,1	3068,6	0,272
85729	4x1,5	12,4	0,7	281,2	13,3
85730	4x2,5	13,6	0,7	347,7	7,98
85731	4x4	16	0,7	480,5	4,95
85732	4x6	17,2	0,7	583,3	3,3
85733	4x10	20,4	0,7	890,3	1,91
85734	4x16	23	0,7	1188,3	1,21
85735	4x25	27,1	0,9	1661,4	0,78
85736	4x35	30,3	0,9	2137,8	0,554
85737	4x50	35,32	1	2949,1	0,386
85738	4x70	40,58	1,1	4339,5	0,272
85739	4x95	45,6	1,1	5572,4	0,206
85740	4x120	50,36	1,2	6803,7	0,161
85741	4x150	56,38	1,4	8401,2	0,129
85742	5x1,5	13,2	0,7	319,2	13,3
85743	5x2,5	14,6	0,7	401,6	7,98

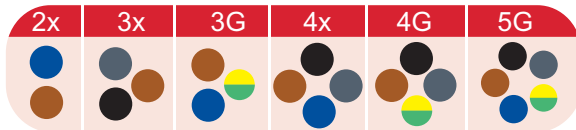


Next

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

SZ1FZ1-K(AS+)/SZ1FZ1-K(AS+)0,6/1 kV PH90					
85744	5x4	17,3	0,7	561,9	4,95
85745	5x6	18,6	0,7	685,8	3,3
85746	5x10	22,1	0,7	1049,1	1,91
85747	5x16	25	0,7	1427,4	1,21
85748	5x25	29,6	0,9	2018,9	0,78
85749	5x35	33,26	0,9	2637	0,554
85750	5x50	38,98	1	3653	0,386

Colours



Presentation

* Only available in drums

0,6 / 1 kV
Termoestabile 90°C

Definition

Technical definition:SZ1MZ1-K(AS+)0,6/1 kV PH90

Voltage rating:..... 0.6/1 kV



Max operative temperature:

operating service:90°C
short-circuit (5 s.).....250°C

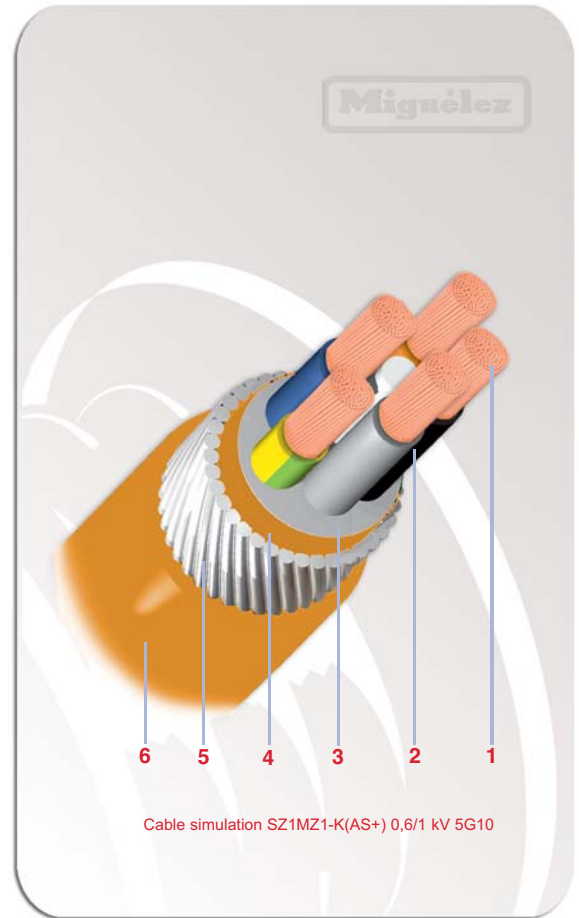


Voltage test: Alternating current.....3.5 kV.
Direct current..... 8.5 kV.

Constructive description:

according to EA 025 standard:

- 1 Flexible electrolytic copper conductor class 5 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.
- 2 Isolation made of a special cross-linked halogen free compound.
- 3 Polyolefine stuffed(for multi-core from 10 mm2 section).
- 4 Polyolefine inner sheath according to UNE 21123-4 annexed 1 index 1.
- 5 Double steel wire armour (or aluminium for a single-core cables) Applied in helix form.
- 6 Outer



Applications

Installation type:FIXED

SZ1MZ1-K (AS+) 0,6/1 kV PH90: These cables are recommended for all those facilities in which we should maintain the integrity of the circuits although these are affected directly by the fire. Specially recommended for circuits of security, for example:
These cables are adapted to use in non independent circuits of security and circuits of services with centralized independent sources. Alarm circuits, signaling and emergency lighting systems, acoustic signaling, smoke extractors, water pumps for fire extinction. Highly recommended in agricultural / cattle production plants or facilities, where the presence of rodents can suppose a threat for the integrity of the cable. Also it is highly recommended in public lightning installations.

Functional characteristics

A) Non flame propagation test:

The composition of the isolation of thermoplastic polyolefine, guarantees the non-flame propagation of the flame according to: UNE-EN 60332-2-1 ; EN 60332-2-1 ; IEC 60332-2-1 standards.



B) Non fire propagation test:

According to UNE EN 50266-2-4 / EN 50266-2-4 / IEC 60332-3 ; UNE EN 50266-2-5 / EN 50266-2-5 / IEC 60332-3 standards.



C) Density of smoke (smoke-screening):

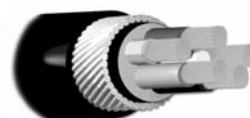
In case of fire, avoids loss of visibility due to smoke produced by cable combustion, according to UNE EN 61034-2 / EN 61034-2 / IEC 61034-2 standards.



0,6 / 1 kV



SZ1MZ1-K(AS+) 0,6/1 kV PH90

**D) Acidity and gases corrosivity:**

In case of fire, the index acidity and the conductivity the emanated gases according to UNE EN 50267-2-3 / EN 50267-2-3 / IEC 60754-2+A1 standards. minimum PH $\geq 4,3$ / maximum conductivity ($\mu\text{S}/\text{cm}$) ≤ 100 .

**E) Halogenous determination:**

In case of fire, the emission of monoxide of carbon, carbon dioxide and hydrochlorate acid is lower to 0.5 %, according to: UNE EN 50267-2-1/ EN 50267-2-1 / IEC 60754-1 standards.

**F) Fire resistance:**

According to UNE-EN 50200 / EN 50200 standards.



* For cables of diameter over 20 mm or nominal cross section over 2.5 mm².
UNE EN 50362 standard will be applied.

Dimensional characteristics

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
	mm ²	mm	mm	Kg/km	Ohm/km

SZ1MZ1-K(AS+) 0,6/1 kV PH90					
85650	2x1,5	12,1	0,7	308,7	13,3
85651	2x2,5	13,1	0,7	361	7,98
85652	2x4	15,1	0,7	478,7	4,95
85653	2x6	16,1	0,7	556,2	3,3
85654	2x10	19	0,7	773,7	1,91
85655	2x16	21,2	0,7	987,1	1,21
85656	2x25	26,2	0,9	1027,7	0,78
85657	3x1,5	12,6	0,7	335,9	13,3
85658	3x2,5	13,7	0,7	406,1	7,98
85659	3x4	15,8	0,7	539,5	4,95
85660	3x6	16,9	0,7	634,5	3,3
85661	3x10	19,7	0,7	876,6	1,91
85662	3x16	23,8	0,7	882,3	1,21
85663	3x25	27,5	0,9	1259,9	0,78
85664	4x1,5	13,4	0,7	383,2	13,3
85665	4x2,5	14,6	0,7	459,5	7,98
85666	4x4	17	0,7	621,1	4,95







Termostable 90°C

0,6 / 1 kV



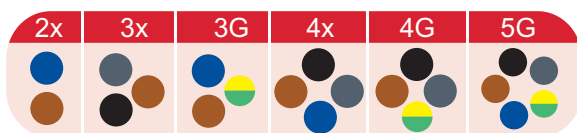
SZ1MZ1-K(AS+) 0,6/1 kV PH90

Next 

Code	Nominal cross section	Ø Overall	Insulation thickness	Weight	Conductor resistance 20°C
					
	mm ²	mm	mm	Kg/km	Ohm/km

SZ1MZ1-K(AS+) 0,6/1 kV PH90					
85667	4x6	18,2	0,7	738,7	3,3
85668	4x10	21,2	0,7	1029,2	1,91
85669	4x16	25,6	0,7	1071,5	1,21
85670	4x25	29,7	0,9	1540,7	0,78
85671	4x35	33,06	0,9	2022,5	0,554
85672	4x50	38,88	1	2812,1	0,386
85673	4x70	42,94	1,1	3704	0,272
85674	4x95	47,8	1,1	4821,3	0,206
85675	5x1,5	14,2	0,7	431,3	13,3
85676	5x2,5	15,6	0,7	527,3	7,98
85677	5x4	18,3	0,7	722,2	4,95
85678	5x6	19,6	0,7	861	3,3
85679	5x10	24,7	0,7	941	1,91
85680	5x16	27,6	0,7	1298,2	1,21
85681	5x25	32,36	0,9	1895,8	0,78

Colours



Presentation

* Only available in drums

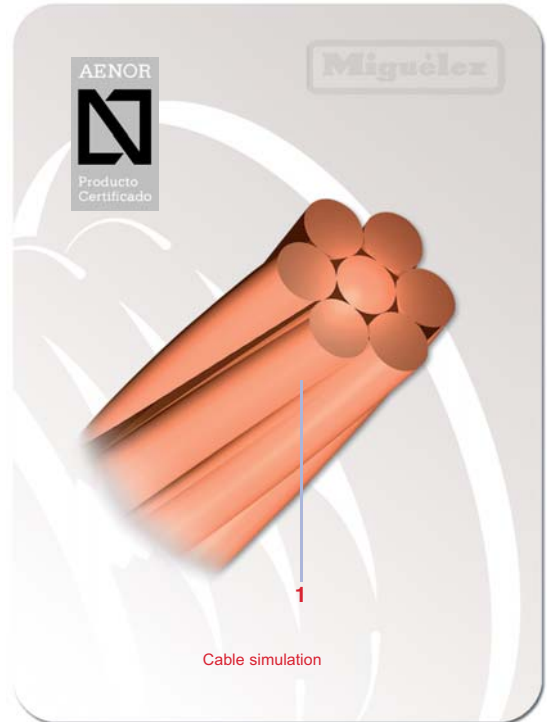


Definition

Technical definition:Copper cable for ground networks

Constructive description:

- 1 Stranded electrolytic copper conductor class 2 according to UNE-EN 60228/ EN 60228 /IEC 60228 standard.



Applications

Type of installation:GROUND

Ground wiring is a required action in industrial and domestic applications, such as operation of production systems, transport and distribution of electrical energy. The most important reasons by which a correct installation of ground wiring must be:

- 1.-To protect people from electrocution.
- 2.-To balance potentials between the components of a same electrical system.
- 3.-To reduce the difference of potential between ground and the structures that can accumulate static electricity.
- 4.-Enable safe way to ground against currents produced by atmospheric unloadings and rays.
- 5.-Enable connection of low impedance between the parts of an electrical system, in order to coordinate the protection apparatuses.
- 6.-To minimize communication systems interferences.

Suitable methods of installation:

Conductors Terranax must be united to steel electrodes with an electrolytic copper bath using an aluminium-thermal weld. Its installation is approved by NTE I (Ministry of Industry of Spain).

Functional characteristics

A) Resists underground corrosion:

originated by the frontal attack metals suffer, when they stand under corrosive agents of the land. It is an inherent quality to copper, a copper oxide surface, created in the superficial layer by the oxidation, features insulator avoiding corrosion penetration.




B) Easy installation:

Cables Terranax are constructed with electrolytic copper formations, strand class 2 according to UNE 21022. They are provided in rolls with a coiled nucleus of sobredetermine the proportions winding to avoid his deformation and enables an easy installation.



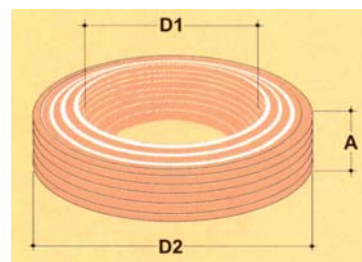


Dimensional characteristics

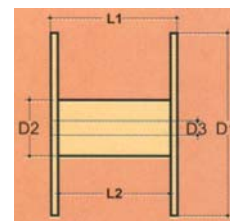
Code	Nominal cross section	FORMATION Wire Number	Conductor diameter	Weight	Max. Electrical resistance 20°C
	mm ²	n°	mm	Kg/Km	Ohm/Km
TERRANAX					
84401	16	7	5	135,3	1,15
84402	25	7	5,9	212,3	0,727
84403	35	7	7,1	296,3	0,524
84404	50	19	8,5	402,4	0,387
84405	70	19	10,8	569,1	0,268
84406	95	19	12,5	836	0,193
84407	120	37	14,0	1036	0,153
84408	150	37	15,8	1200	0,124
84409	185	38	17,5	1600	0,0991
84410	240	61	19,5	2069	0,0754

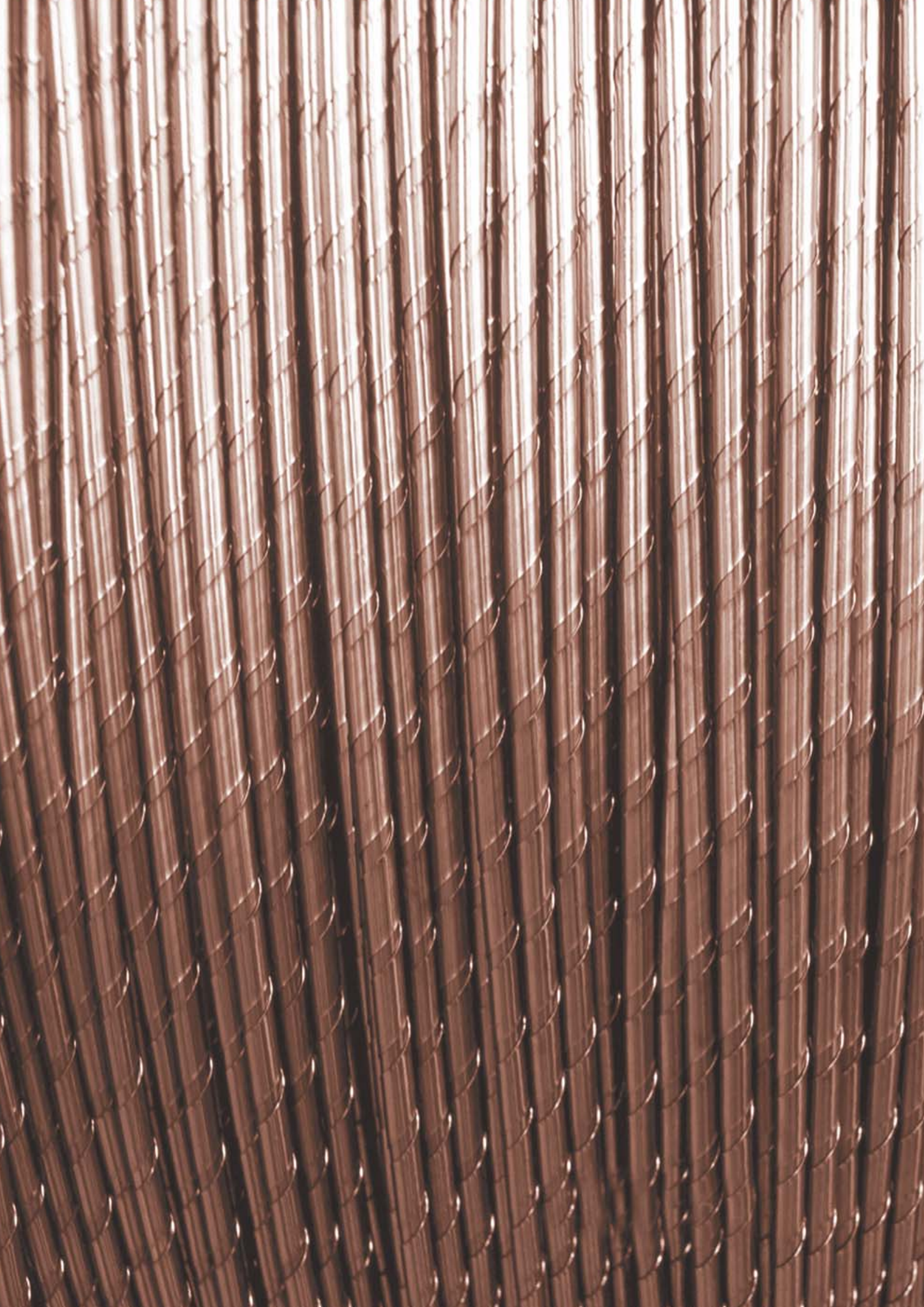
Presentation

Retractable coils				
Conductor size mm ² .	Coil weight Kg.	D1 Inner diameter mm.	D2 Outer diameter mm.	A Height mm.
16	50	540	610	150
25	50	540	610	150
35	50	540	620	150
35	100	540	690	150
50	50	540	620	150
50	100	540	690	150



Wood drums						
D1 Outer diameter mm.	D2 Nucleus diameter mm.	D3 Axis diameter mm.	L1 outside wide mm.	L2 useful wide mm.	Drum tare kg.	Copper weight kg.
1200	600	82	730	640	80	1200
1000	500	82	600	510	50	700
800	420	82	500	420	27	400



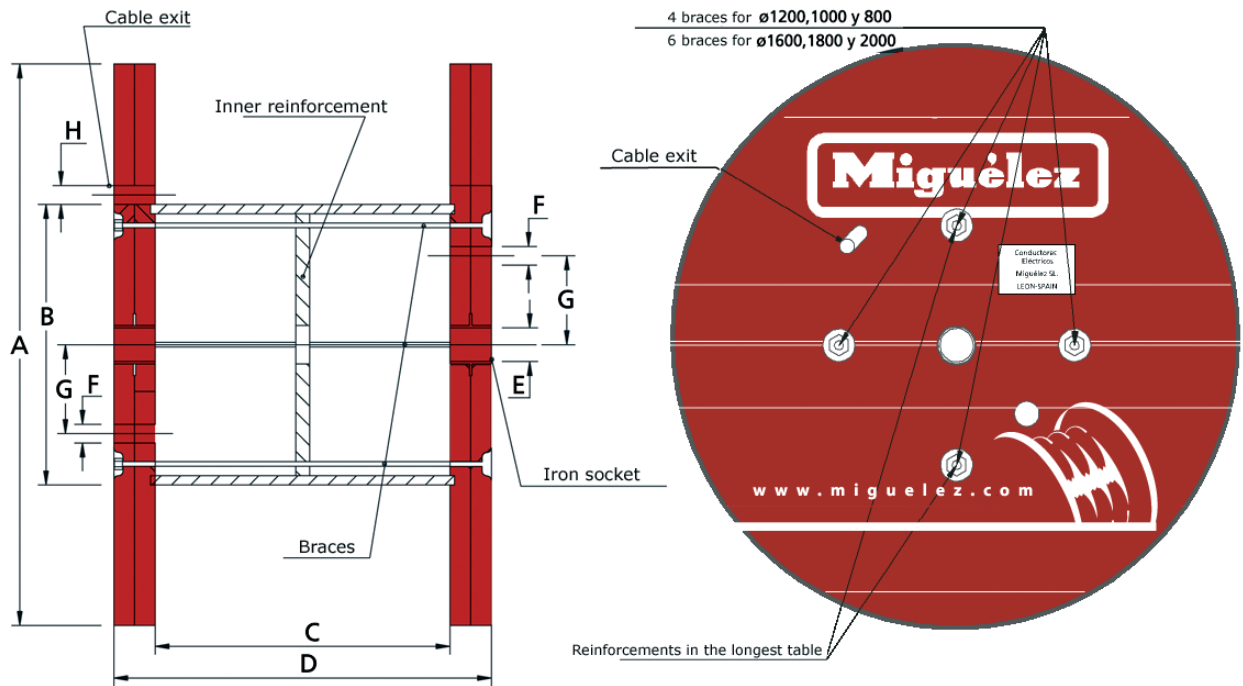




Annexed



Drum dimensions



A	B	C	D	E	F	G	H	Inner reinforcement
630300	360	450	82	50	150	30	No	
800	400	520	600	82	50	155	30	No
1000	500	610	710	82	50	210	40	No
1200	600	640	730	82	50	210	50	Si
1250	630	710	810	82	50	210	50	Si
1400	710	810	930	82	50	210	50	Si
1600	700	820	1000	82	50	210	50	Si
1750	1120	960	1100	82	50	210	50	Si
2000	1250	960	1100	82	50	210	50	Si

Drums	Numeration
ø 600	06x0000
ø 800	08x0000
ø 1000	10x0000
ø 1200	12x0000
ø 1250	13x0000
ø 1400	14x0000
ø 1600	16x0000
ø 1800	18x0000
ø 2000	20x0000

Drums capacity table

Drums diameter							
Ø cables mm	630	800	1000	1250	1400	1600	2000
3	4700						
4	3500						
5	2300	5500					
6	1600	3700					
7	1100	2800	4900				
8	900	2100	3600				
9	700	1700	2800				
10	500	1300	2300	4200			
11	400	1100	1850	4400			
12	350	900	1600	3600	5100		
13	250	700	1300	3100	4300		
14	250	650	1100	2700	3900		
15	200	600	1000	2400	3300	5800	
16	200	450	850	2000	2900	5100	
17	150	450	800	1700	2600	4500	
18	150	350	700	1600	2300	4100	5100
19	100	350	600	1450	2100	3600	4580
20	100	300	550	1300	1800	3300	4135
21	100	250	450	1100	1600	3000	3750
22	100	250	450	1050	1500	2700	3415
23	100	200	350	950	1350	2400	3125
24	50	200	350	950	1300	2200	3870
25	50	200	350	950	1250	2100	2645
26		160	290	850	1160	1900	2445
27		150	290	820	1130	1700	2265
28		150	280	790	960	1600	2110
29		140	270	690	930	1400	1965
30		140	220	660	930	1400	1835

Next 

Drums diameter

Ø cables mm	630	800	1000	1250	1400	1600	2000
31		140	220	630	810	1200	1720
32		100	210	570	780	1200	1615
33		100	210	540	750	1200	1515
34			190	510	640	1000	1430
35			160	460	640	1000	1350
36			150	430	620	1000	1275
37			150	430	520	800	1205
38			140	410	520	800	1145
39			140	360	500	800	1085
40			130	340	500	800	1030
41			130	340	470	700	980
42				320	410	700	935
43				320	390	650	895
44				320	390	650	850
45				250	390	550	815
46				250	370	550	780
47				250	370	550	745
48				240	300	550	715
49				240	300	500	585
50				240	300	500	660
51				220	280	450	635
52				180	280	400	610
53					280	400	585
54					280	400	565
55					260	400	545
56					210	400	525
57					210	400	505
58					200	300	490
59					200	300	475
60					200	300	455



Cantabrian Highway Tunnels (Asturias, Spain)
Tunnels built using Miguelélez Cables

Miguelélez

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Glossary

Based on conductor type

Flexible Copper Cables

Cables	Voltage	Standard	Designación	Temp.	Applications
BARRYFLEX	300/500 V 450/750 V	UNE 21031-3 UNE 21031-3	H05V-K H07V-K	70°	Installation in conduits located on surfaces or embedded, or in analogous closed systems
BARRYFLEX V2-K	300/500 V 450/750 V	UNE 21031-7 UNE 21031-7	H05V2-K H07V2-K	90°	use for internal wiring and fixed installation protected inside electrical equipment and in fixed lights
BARRYFLEX MAN	300/500 V	UNE 21031-5	H05VV-F	70°	Mobile and fixed domestic installations
BARRYFLEX OIL	300/500 V	UNE 21031-13	H05VV5-F	60°	
BARRYFLEX MULTIPLE VV-F	300/500 V	UNE 21031.13	ES05VV-F	60°	
BARRYFLEX MULTIPLE VV-K	0,6/1kV	UNE 21123.1	VV-K	70°	Specially recommended for electrical couplings, public lightning installations, industrial installations, outer or inner wirings. Non flame propagator cables, specially indicated for industrial installations
BARRYFLEX RV-K	0,6/1kV	UNE 21123.2	RV-K	90°	
BARRYFLEX ARMADO FLEJE	0,6/1kV	UNE 21123.2	RVFV-K	90°	
BARRYFLEX ARMADO CORONA	0,6/1kV	UNE 21123.2	RVMV-K	90°	
AFIRENAS-L(AS)	300/500 V 450/750 V	UNE 211002 UNE 211002	ES 05Z1-K ES 07Z1-K	70°	Specially recommended for hard aeration buildings, public places where the cable it's used. It will not provide toxic gas emission in case of fire
AFIRENAS-X(AS)	0,6/1kV	UNE 21123.4	RZ1-K	90°	
AFIREFÁCIL(AS)	450/750 V	UNE 211022	ES 07Z1-K	70°	Individual utilities in connection wirings
AFIRENAS MAN	300/500 V	UNE 21031-14	H05Z1Z1-F	60°	Installation in conduits located on surfaces or embedded, or in analogous closed systems
AFIREFENIX MAN(AS+)	300/500 V	UNE 21123.1	SZ1-K	90°	Alarm systems, emergency and signposting lightning, acoustic signposting, smoke extractors.....
AFIRENAS MÚLTIPLE	0,6/1kV		RZ1-K	70°	Specially indicated for transport and distribution of electrical energy in fixed wirings, protected or not. Adapted for inner or outer installations on supports (outdoors), in tubes or buried
AFIRENAS AR-FLEJE	0,6/1kV	UNE 21123-4	RZ1FZ1-K(AS)	90°	
AFIRENAS AR-FLEJE	0,6/1kV		RZ1FAZ1-K(AS)	90°	
AFIRENAS AR-CORONA	0,6/1kV		RZ1MZ1-K(AS)	90°	
AFIREFENIX(AS+)	0,6/1kV		SZ1-K(AS+)PH 90	90°	Alarm systems, emergency and signposting lightning, acoustic signposting, smoke extractors.....
AFIREFENIX AR-FLEJE(AS+)	0,6/1kV	EA 025	SZ1FZ1-K / SZ1FAZ1-K(AS+)PH 90	90°	
AFIREFENIX AR-CORONA(AS+)	0,6/1kV		SZ1MZ1-K (AS+)PH90	90°	
TERMOFLEX	300/500 V	UNE 21.027-3	H05S-K	180°	For internal wiring in high environmental temperatures and protected places.
TERMOFLEX ss	300/500 V	UNE 21.027-3	H05SS-K	180°	With high temperature for fixed facilities in and on lamps in equipment, specially when one requires a cable isolated and covered
TERMOFLEX man	300/500 V	UNE 21.027-15	H05SS-F	180°	On high temperature or in contact with hot surfaces: For fixed installations or incorporated in lamps used on industrial facilities, whenever mechanical protection is guaranteed. For use in equipment that requires certain flexibility and put under slight mechanical actions.

Solid Copper Cables

Cables	Voltage	Standard	Designación	Temp.	Applications
BARRY	300/500 V 450/750 V 450/750 V	UNE 21031-3 UNE 21031-3 UNE 21031-3	H05V-U H07V-U H07V-R	70°	Installation in conduits located on surfaces or embedded, or in analogous closed systems
BARRY	300/500 V 450/750 V 450/750 V	UNE 21031-7 UNE 21031-7 UNE 21031-7	H05V2-U H07V2-U H07V2-R	90°	use for internal wiring and fixed installation protected inside electrical equipment and in fixed lights
AFIRENAS CC-Z	450/750 V	UNE 21027-9	H07Z-R	90°	Installation in conduits located on surfaces or embedded, or in analogous closed systems
AFIRENAS CC-Z1	450/750 V	UNE 211002	ES07Z1-R	70°	Connection installations, counters
TERMOSIL	300/500 V	UNE 21027-3	H05V-U	180°	For internal wiring in high environmental temperatures and protected places.
BARRYNAX RV	0,6/1kV	UNE 21123-2	RV	90°	Specially indicated for public lightning installations, industrial places, outdoors or underground
BARRYNAX RZ	0,6/1kV	UNE 21030-2	RZ	90°	Protected cables against mechanical aggressions and rodents. Cable for places in zones classified according to ITC-BT 029 (REBT), that is, places with a high risk of fire or explosion. in addition, cable RVMV has been designed for its use in petrochemical places, gas stations...
BARRYNAX_{ARFLEJE}	0,6/1kV	UNE 21123.2	RVFV		
BARRYNAX_{ARCORONA}	0,6/1kV	UNE 21123.2	RVMV		
TERRANAX		UNE 21022 formation class 2			Ground wiring