



HIGH TEMPERATURE

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Specifica Tecnica Cavi Speciali
Special Cables Technical Sheet

C5NH

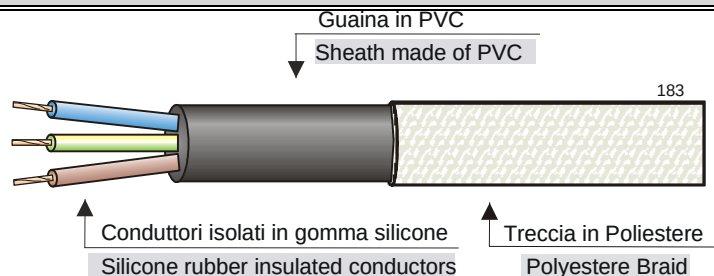


SIGLA DEL COSTRUTTORE

PRODUCER ACRONYM

FG4ORT-PE D.6,00 - 2x0,75 mm² RR

CAVO MULTIPOLARE CON CONDUTTORI FLESSIBILI, ISOLANTE IN GOMMA SILICONE E GUAINA ESTERNA IN PVC TM2 CON TRECCIA IN POLIESTERE
MULTICORE CABLE WITH FLEXIBLE CONDUCTORS, INSULATION MADE OF SILICONE RUBBER AND EXTERNAL SHEATH MADE OF PVC TM2 WITH POLYESTER BRAID



DATI TECNICI		TECHNICAL DATA	
- Tensione Nominale	: 300/300V	- Temperatura di Esercizio	: 70°C
- Working Voltage		- Temperature Range	
- Tensione di Prova in H ₂ O	: 2000V	- Tipo Isolante Anime	: Gomma silicone T180°C
- Test Voltage in H ₂ O		- Cores Insulation Type	: Silicone Rubber T180°C

REALIZZAZIONE		CONSTRUCTION	
- Conduttore	: Fili elementari in Rame Rosso trefolati, classe 5		
- proprietà e costruzione	: Proprietà vedi T009 - Costruzione secondo	EN(IEC-VDE)60228	
- Conductor	: Twisted strands of flexible Bare Copper wires, class 5		
- property and construction	: Property see T009 - Construction in conformity to	EN(IEC-VDE)60228	
- Colori della guaina in PVC	: Bianco		
- PVC sheath Colour	: White		
- Colori Isolamento Anime	: Blu - Marrone		
- Cores Insulation Colours	: Blue - Brown		
- Colori della treccia esterna	: Su richiesta		
- External braid colours	: On request		
- Confezionamento	: Vedi tabelle T002-T003		
- Packing	: See tables T002-T003		
- Tolleranza sul Ø esterno	: ± 0,20 mm		
- External Ø tolerance			

Caratteristiche Dimensionali			Dimensional Characteristics			Caratteristiche Elettriche conduttori in rame rosso. Vedi tabella T009		
CONDUTTORE		CONDUCTOR	ISOLANTE		INSULATION	Electrical Characteristics bare copper conductor. See table T009		
Sezione	Formazione	Diametro	Spess. Isolante	Spess. Guaina	Ø Esterno	Resistenza max@20° C	(I) MAX 20° C	Peso
Section	Composition	Diameter	Insulation Thickn.	Sheath Thickn.	External Ø	Resistance max@20° C	ΔT +50° C	Weight
(mm ²)	[n° x Ø(mm)]	(mm)	(mm)	(mm)	(mm)	(ohm/km)	(ampere)	(kg/km)
2 x 0,75	24 x 0,20	1,20	0,45	0,70	6,00 **	26,00	15,00	48,00

Ø Cavo prima del rivestimento mm. 5,60

Ø Cable before braiding mm. 5,60

CARATTERISTICHE E VALORI SONO INDICATIVI E POSSONO VARIARE SENZA PREAVVISO				RACCOMANDAZIONI PER L'USO SUL RETRO	
CHARACTERISTICS AND VALUES ARE INDICATIVE AND THEY CAN BE MODIFIED WITHOUT NOTICE				RECOMMENDATIONS FOR USE BEHIND	
DATA EMISSIONE	19/10/2011	INDICE DI MODIFICA	1	DATA MODIFICA	05/06/2012
Redatto da SETP (firma)	<i>Luca Marcali</i>	Verificato da SEP (firma)	<i>Luca Marcali</i>	Approvato da DIG (firma)	<i>Luca Marcali</i>
Issued by SETP (signature)		Verified by SEP (signature)		Approved by DIG (signature)	

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101 - PARTICULARITIES

The product on this technical sheet, except for different instructions determined during contractual decisions, is insulated with standard filled silicone rubber compound having the following requirements:

Density	g/cm ³	1,60 ± 0,02	Dielectric Strength	kV/mm	15	Tear strength min.	N/mm.	10
Elongation	min. Original condition	150%	After Ageing	10 days 200°C		80%		
Tensile strength	N/mm ² min. Original condition	5	After Ageing	10 days 200°C	N/mm ²	4		

Tests and inspections are made with reference to the Norms CEI-EN

004 - GENERALITIES

PERFORMANCES (Silicon rubber insulation)

The silicone rubber insulated cables, further to giving high performances in environments with high temperatures, have got also other good qualities : halogen free, excellent UV, Ozone, Oxygen, Artificial Light, Atmospheric Agents etc. resistance, as well as excellent behaviour at low temperatures; Until -50°C the silicone rubber maintains its characteristics of elasticity (ASTM 2137A). If this temperature is overcome rubber loses gradually its elastic characteristics. The breaking temperature is -73°C. (ASTM D2137A).

The performances of this cable, the norms applied during designing and construction, the construction characteristics are those indicated on the front side of this document.

On it are also indicated possible Certifications (Quality Marks) and the references of the Certificate, that can be found also on the website: www.blf.it.

PRECAUTIONS AND RECCOMENDATIONS FOR USE

In order to grant obtaining performances it is necessary to use all precautions against risks of mechanical damages of the insulator during handling, wiring and installation (avoid torsions, abrasions, rubbings, contacts with sharp surfaces). These precautions must be applied in every case and in particular during unsheathing and wiring of the silicone rubber cores. It is a good norm to respect the minimum bend radii and not to submit the cable to traction stresses that can damage the product. Values not to be exceeded are:

Minimum bend radius (CEI 20-40)	:	cable with diameter until 12 mm.	- 4 times the cable diameter if in static installation	- 5 times the cable diameter if in non static installation
Traction stress (CEI 20-40)	:	15N for each sq. mm. of section		

The cable must not be installed directly buried outdoors and beneath plaster coats, as also cables made for static installation must not be used on moving equipments.

This may cause breaking of the conductors and following outgoing of the same from the insulator with the risk of short circuit.

In case of use on moving equipments it is necessary to choose products right for the purpose and made in dynamic version (VD). In this version the construction of the cable allows passing the alternate flexibility test, made in compliance with the norm CEI 20-20/2.

HARMFUL SUBSTANCES FOR THE ELECTRIC INSULATOR

The contact between the electric insulator and substances that can deteriorate its properties must be avoided. In particular, for silicone rubber the following substances are indicated as harmful from the producers of rubber: hydrochloric, hydrofluoric, formic, nitric, sulphuric, stearic acids; petrol, oil, diesel oil, butanol, perchlorethylene.

EMISSIONS - CLASSIFICATION OF THE PRODUCT

Tests, that are carried out in qualified and certified laboratories, allow us to state, exclusively for silicone insulated conductors, the following classifications:

- ABSENCE OF HALOGENS (LSOH)	Test according to the Norm	CEI-EN 50267-2-1 (CEI 20-37/2-1)
- LOW DEGREE OF ACIDITY	Test according to the Norm	CEI-EN 50267-2-2 (CEI 20-37/2-2)
- LOW EMISSION OF TOXIC SMOKES AND GASES	Test according to the Norm	CEI-EN 61034-1 CEI-EN 61034-2

The above mentioned classifications can not be declared for the complete cable, as the external sheath is made of PVC.

HARMFUL SUBSTANCES ABSENT IN THE CABLE AND DECLARATION according to Directives 2000/53/EC - 2011/65/UE

BLF cables do not contain any toxic or harmful substances introduced on purpose. The following substances are absent, in the limits of sensitivity of the traditional analytical technique:

Naphthylamine and its Salts (CAS91.59.9); Aminodiphenyl and its Salts (CAS92.67.1); Benzidine and its Salts (CAS92.87.5); Nitrodiphenyl (CAS92.93.3); * PBB (Polybrominated Biphenyls);

* PBDE (Polybrominated Diphenyl Ethers); * Deca BDE; * Lead; * Mercury; * Chrome VI; ** Cadmium; PFOS and other substances dangerous for health.

(* Maximum percentage allowed by weight for homogeneous material 0,1% = 1000 ppm - ** Maximum percentage allowed by weight for homogeneous material 0,01% = 100 ppm)

In the light of our current knowledge and on the basis of our documentation we can state that our products basically comply with the requirements of the following norms:

67/548/EEC - Regarding packaging and labelling of dangerous substances 76/769/EEC - Regarding Restrictions on introductions and use of dangerous substances.

2000/53/EC - ELV Regarding End of life vehicles 1907/2006-REACH - Registration, Evaluation and Authorisation of Chemicals

2011/65/UE - RoHS Regarding Restrictions of the use of certain hazardous substances in electrical and electronic equipment

2002/96/EC - WEEE Handling of Waste of Electrical and Electronic Equipment

BLF's position towards the REACH Regulation is: **DOWNSTREAM USER**. In this position BLF must not effect the Registration of Substances or Preparations.

BLF assures that the products supplied do not contain Dangerous Substances defined "SVHC" in the "Candidate List" or in the "Authorisation List" of the REACH Regulation, and assures also recurrent monitoring of possible changes to the norm 1907/2006 REACH and to the "candidate list".

For the electric cables no Security Sheet is made. The regulations in force **do not provide** for it. (Decree 7th September 2002 in implementation of the Directive 2001/58/EC regarding the information modalities about hazardous substances and preparations put on the market)..

DECLARATION OF CONFORMITY AND CE MARKING

Every supply is given with "Declaration of Conformity" to this Technical Sheet. If the current laws in Italy provide for it, on the identification labels of the products the logo "CE" appears.

In case of homologated products also the logo of the homologation authority and the number of the certificate are indicated.

CE marking is not to be applied for cables with Working Voltage lower than 50V and higher than 1000V AC or lower than 75V and higher than 1500V DC.

CE marking is omitted on special cables made on demand, where the dimensioning of the product is defined by the Customer and without information about electric performances.

In these cases the customer is responsible for the employment of the product in safety conditions.

In case the product is exported out of the European Community, CE marking is not to be considered applicable in the area of destination of the goods

(L. Dec. 626/96 art.1 par. 1 - Directive n. 2006/95/CE).

GUARANTEES - EXAMINATIONS AND INSPECTIONS

During designing, the National or International Norms quoted on the front side of this document are applied. If believed as appropriate, the products are homologated by External Authorities for Product Certification (IMQ - IMQ HAR- VDE- UL - CSA etc.) which grant the compliance with the requirements in the long term through inspection visits and laboratory tests.

In case of products made without specific norms, the designing is however made respecting the general current regulations, and homologation tests are made in BLF's laboratory.

All the products made, undergo examinations and tests in order to grant correspondence with the established requirements. Every final reel is seriated and a specimen is kept,

by BLF for at least two years. The outgoing products are checked dimensionally on 100% of the final reels.

All electric cables are tested electrically 100% (spark tester) both on the extrusion line and during conclusive packaging. Possible imperfections are eliminated.

Interruptions are indicated with an appropriate label in the final packaging.

Furthermore, methodically, laboratory tests as planned in the Quality Handbook and relevant Procedures are made, in order to check the behaviour of the product and of the components used. The laboratory tests are made in accordance with the norms of reference. As example we list the most common tests on cables and relevant norms:

TYPE OF TEST (ON THE INSULATOR)	CONDITION	TEST METHOD
Elongation and Tensile Strength	Original condition and after ageing	CEI-EN 60811
Ohm resistance test	Original condition	CEI-EN 50395
Dielectric strength test	Original condition	CEI-EN 50395

TYPE OF TEST (ON THE EXTERNAL SHEAT)

Elongation and textile strength	Original condition and after ageing	CEI-EN 60811
Loss of mass		CEI-EN 60811
At high temperature		CEI-EN 60811
Heat shocking		CEI-EN 60811
Thermal stability		CEI-EN 60811
Bending at low temperatures		CEI-EN 60811

TYPE OF TEST (ON COMPLETE CABLE)

Alternate flexibility test 30.000 runs	For -VD- versions	CEI-EN 50396
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Other tests are made when provided from the norms of construction or the terms of the contract.