



Specifica Tecnica Technical Sheet

C063

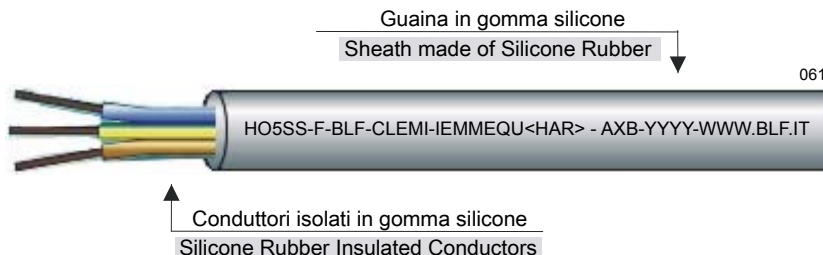
[HTTP://WWW.BLF.IT](http://www.blf.it)
E-MAIL: BLF@BLF.IT



Pagine 1 di 2
Page 1 of 2

H05SS-F

CAVO MULTIPOLARE CON CONDUTTORI FLESSIBILI RESISTENTE AL CALORE,
ISOLANTE E GUAINA ESTERNA IN GOMMA SILICONE
HEAT RESISTANCE MULTICORE CABLE WITH FLEXIBLE CONDUCTORS
INSULATION AND EXTERNAL SHEATH MADE OF SILICONE RUBBER



Identificazione Prodotto con marcatura / The product is identification with marking:

H05SS-F - B L F CLEMI - IEMMEQU <HAR> - AXB - YYYY - WWW.BLF.IT

A = numero anime / cores number B = sezione / section YYYY = anno / year

In alternativa su richiesta / In alternative on request

Filo distintivo BLF CLEMI: Bianco - Arancio - Bianco - Rosso e **Filo distintivo IMQ <HAR>:** Nero - Rosso - Giallo

BLF-CLEMI distinctive thread: White - Orange - White - Red and **IMQ <HAR> distinctive Thread:** Black - Red - Yellow

Cavo ARMONIZZATO <HAR> con certificazione **IMQ D.A.T. N. CA01.00121.**

Costruito in conformità alla norma armonizzata: **HD 22.15 S1.**

Cable <HAR> approved with **IMQ D.A.T. certificate N. CA01.00121.**

Cable according to **HD 22.15 S1** harmonization document.

Cavo adatto per gli impieghi previsti dalla norma di riferimento e certificato per il superamento della prove di resistenza a piegatura alternata secondo le norme CEI 20-19/2 e per il superamento della prova di non propagazione della fiamma su cavo isolato secondo la norma CEI EN 50265-2-1 (CEI20-35).

The use of this cable is possible only according to the reference standard; It is certified to pass Flexibility test according to standard CEI 20-19/2 and to pass the test for resistance to vertical flame propagation for cable according to standard CEI EN 50265-2-1 (CEI 20-35).

DATI TECNICI	TECHNICAL DATA
- Tensione Nominale : 300/500 V	- Temperatura di Esercizio : + 180° C
- Working Voltage :	- Temperature Range :
- Tensione di Prova in H ₂ O : 2000 V	
- Test Voltage in H ₂ O :	

REALIZZAZIONE	CONSTRUCTION
- Tipo di Conduttore : Fili elementari in Rame Rosso, Stagnato, Nichelato trefolati classe 5	CEI 20-29
- Conductor Type : Twisted strands of Bare Copper, Tin or Nichel coated Copper class 5	CEI 20-29
- Proprietà dei conduttori : Vedi tabella T009	
- Conductor Property : See table T009	
- Colori delle anime : Vedi tabella a pagina 2di2	
- Colours of cores : See table page 2of2	
- Colori della guaina : Nero - Grigio - Bianco - Rosso Mattone - Blu	
- Colours of sheath : Black - Grey - White - Red Brick - Blue	
- Confezioni : Matasse o Bobine	(VEDI TABELLE T002 - T004)
- Packing : Coils or Reels	(SEE TABLES T002 - T004)
- Tolleranza sul Ø esterno : +/- 0,20mm	
- Tolerance on external Ø : +/- 0,20mm	



Specifica Tecnica Technical Sheet

C063



Pagine 2 di 2
Page 2 of 2

H05SS-F

Caratteristiche Dimensionali			Dimensional Characteristics			Caratteristiche Elettriche RAME vedi T009	
CONDUTTORE		CONDUCTOR	ISOLANTE	INSULATION		Electrical Characteristic COPPER see T009	
Sezione Section (mm ²)	Formazione Composition [n° x Ø(mm)]	Diametro Diameter (mm x 1)	Spess. Isolante Insulat. Thickn. (mm)	Spess. Guaina Insulat. Thickn. (mm)	Ø Esterno External Ø (mm)	(I) MAX 20°C ΔT +50° Ampere	Peso Weight (Kg/Km)
2 x 0,75	24 x 0,20	1,20	0,60	0,80	6,60	15,00	58,0
2 x 1,00	32 x 0,20	1,30	0,60	0,90	7,10	17,00	67,0
2 x 1,50	30 x 0,25	1,60	0,80	1,00	8,40	23,00	110,0
2 x 2,50	50 x 0,25	2,00	0,90	1,10	9,80	33,00	150,0
3 x 0,75	24 x 0,20	1,20	0,60	0,90	7,00	15,00	75,0
3 x 1,00	32 x 0,20	1,30	0,60	0,90	7,20	17,00	85,0
3 x 1,50	30 x 0,25	1,60	0,80	1,00	8,90	23,00	140,0
3 x 2,50	50 x 0,25	2,00	0,90	1,10	10,40	33,00	185,0
4 x 0,75	24 x 0,20	1,20	0,60	0,90	7,60	15,00	90,0
4 x 1,00	32 x 0,20	1,30	0,60	0,90	7,80	17,00	100,0
4 x 1,50	30 x 0,25	1,60	0,80	1,10	9,90	23,00	165,0
4 x 2,50	50 x 0,25	2,00	0,90	1,20	11,60	33,00	230,0
5 x 0,75	24 x 0,20	1,20	0,60	1,00	8,50	15,00	110,0
5 x 1,00	32 x 0,20	1,30	0,60	1,00	8,80	17,00	130,0
5 x 1,50	30 x 0,25	1,60	0,80	1,10	10,90	23,00	190,0
5 x 2,50	50 x 0,25	2,00	0,90	1,30	12,90	33,00	290,0

- Tabella combinazione colori conduttori per cavi multipolari H05SS-F

- Scheme colours table for multicore cables H05SS-F

	H05SS-F G	H05SS-F X
Numero di conduttori Number of conductors	Versione con conduttore di protezione Giallo/Verde Version with ground conductor Yellow/Green	Versione senza conduttore di protezione Giallo/Verde Version without ground conductor Yellow/Green
2	-	Marrone - Blu
3	Giallo/Verde (cavo di massa) - Marrone - Blu	Nero - Blu - Marrone
4	G/V - Nero - Blu - Marrone	Nero - Blu - Marrone - Nero
5	G/V - Nero - Blu - Marrone - Nero	Nero - Blu - Marrone - Nero - Nero
2	-	Brown - Blue
3	Yellow/Green (ground cable) - Brown - Blue	Black - Blue - Brown
4	Y/G - Black - Blue - Brown	Black - Blue - Brown - Black
5	Y/G - Black - Blue - Brown - Black	Black - Blue - Brown - Black - Black

ATTENZIONE!!! / ATTENTION!!!

SE NON DIVERSAMENTE SPECIFICATO LA B L F S.r.l. CONSIDERA STANDARD LA COMBINAZIONE CON GIALLO/VERDE, SU RICHIESTA, E' DISPONIBILE LA VERSIONE SENZA GIALLO/VERDE.

COMBINATION WITH YELLOW/GREEN IS CONSIDERED STANDARD, ON REQUEST AVAILABLE COMPOSITION WITHOUT YELLOW/GREEN.

CARATTERISTICHE E VALORI SONO INDICATIVI E POSSONO VARIARE SENZA PREAVVISO
CHARACTERISTICS AND VALUES ARE INDICATIVE AND THEY CAN BE MODIFIED WITHOUT NOTICE

RACCOMANDAZIONI PER L'USO SUL RETRO
RECOMMENDATIONS FOR USE BEHIND

DATA EMISSIONE	17/12/2001	INDICE DI MODIFICA	1	DATA MODIFICA	25/02/2002
----------------	------------	--------------------	---	---------------	------------

Redatto da SETP (firma)

Setp

Verificato da SEP (firma)

Setp

Approvato da DIT (firma)

Setp

Issue by SETP (signature)

Verified by SEP (signature)

Approved by DIT (signature)

PRODUCT :

Multi-conductor cable for the transmission and supply of low voltage electric energy, with conductors' insulation and external sheath in silicone rubber compound. Silicone elastomers are used with the addition of appropriate "fillers" and reactors. After extrusion and vulcanisation they reach the required mechanical properties as well as the electric insulating quality.

APPLICATIONS :

conductors insulated by silicone rubber are used whenever high levels of heat resistance are required for the insulation materials, for example in metallurgy (steel works, rolling mills, foundries), in household appliances industry, for heating and lighting equipment, in the production of electrical engines, in glass and ceramic factories, as well as other applications.

RECCOMENDATIONS FOR USE :

- Silicone rubber insulated cables : as silicone rubber is a tender material, adequate protections must be taken to prevent the cables from mechanical damages which may occur during the installation or in normal service conditions. During the installation it is indispensable that the cables do not rub against rough or sharp surfaces; also they must not be bent or twisted in such a way as to deteriorate the external sheath or even the internal insulating layer. Utilizations in systems with moving parts which may ruin the cables must be avoided. It is necessary to use silicone cables in static installations avoiding dynamic stresses which may bend or break them.

This cable must not be installed directly buried outdoors or beneath plaster coats.

Electrical cable is prepared for "DYNAMIC VERSION" that mean a particular configuration suited to pass test of flexibility. BLF apply method described on CEI20-19/2 point 3 "Prova di Resistenza a Piegature Alternate". At the end of the test (30.000 movement) the conformity is give to: Absence of electricity interruption – Absence of short circuit between the conductor and with the external. In addition the conductor have to be conform to the "DIELECTRIC STRENGTH TEST" as for table 3 CEI20-19/1 (Test Voltage 2KV in water for 15 minutes).

HARMFUL SUBSTANCES FOR INSULATING MATERIAL ACCORDING TO SILICONE RUBBER PRODUCERS' INDICATIONS :

formic acid, benzene, hydrofluoric acid, nitric acid, hydrochloric acid, sulfuric acid, stearic acid, perchlorethylene, diesel oil, butanol, crude oil.

HARMFUL SUBSTANCE ABSENT IN THE CABLES :

we guarantee the absence of the following harmful substances : Cadmium - Zinc - Chrome - Lead - Naphthylamine and its salts (CAS 91.59.8) – Aminobiphenyl and its salts (CAS 92.67.1) – Benzidine and its salts (CAS 92.87.5) – Nitrobiphenyl (CAS 92.93.3) and substances unsafe for health according to EEC 67/548 Directive and his amendment or substances with recognized limit of exposure.

EMISSIONS :

the EI2/G4 silicone rubber utilized for these cables is halogen free. In order to be vulcanized, the rubber must be add with 1-2% of Dichlorine Benzoil Peroxide. During the vulcanization the reactive releases the chlorine contained in the rubber, but it is not possible to exclude that small traces will remain in the rubber after vulcanization. The CEI standards do not specify any tests to check the presence of halogens in the compound we use for our cables. Regarding other standardised and halogen free compounds, the CEI standards specify the maximum allowed quantity of halogens. With regards to the M4 compound, the CEI standards No.20-11 provides for a maximum content of 0.3 % of the cable mass. Our tests have proved that in the standard cables we produce the content of halogenidric gases is slightly above 0.1 %. Should the total absence of emissions be required, the user must consider an appropriate heat treatment.

DIMENSIONING :

in order to guarantee the proper service of a cable, it is fundamental to ascertain the number of conductors and their section. For each single conductor, the values of maximum operating current are specified in the technical sheet.

TECHNICAL DATA :

- Operating temperature : cable can be used in constant service in the following temperature range : - 25°C +180°C.

high temperature can cause conductor's oxidation (there's no difference between red copper and tinned coated copper). There's also the possibility that insulation and conductor stick together.

- Short-circuit temperature : the maximum short-circuit temperature that the cable can resist is of 350°C (DIN VDE 0207 standard).

- Minimum bend radius : the minimum internal bend radius must not damage the cable. To ensure this, do not bend the cable at a radius less than 5 times its external diameter, if smaller than 10 mm, and less than 6 times if greater than 10 mm.

- Traction stress : the maximum traction stress applied to a single conductor must not be greater than 15 N for each sq. mm of conductor section.

ELECTRIC-MECHANICAL QUALITIES OF INSULATING MATERIAL ON CABLES :

- Density : gr/cm3 1.50 - 1.60
- Dielectric strength : kV/mm 15
- Cutting resistance : N/mm 15 minimum

TECHNICAL STANDARDS :

DIN VDE 0250 standard.

TEST LISTING , CHECKS AND INSPECTIONS AN RELATIVE FREQUENCY , APPLIED METHODOLOGY AND MINIMUM RESULTS OBTAINED :

- DURING EXTRUSION -

TYPE OF TEST	CHECK AND INSPECTION	METHODOLOGY	BLF PROCEDURE	FREQUENCY	RESULT
dimensional control on conductors	outside diameter and dead centred core	CEI 20-34	IO / 09 / 01	100% of product	values within the expected tolerances
electric test on conductors	spark-tester during extrusion	CEI 20-19/2	IO / 09 / 01	100% of product	control and registration of 'leaks'
dimensional control on cable	outside diameter and dead centred cord	CEI 20-34	IO / 09 / 01	100% of product	values within the expected tolerances

- FINAL PACKAGING-

TYPE OF TEST	CHECK AND INSPECTION	METHODOLOGY	BLF PROCEDURE	FREQUENCY	RESULT
dimensional control	compliance with the technical sheet	CEI 20-34	IO / 09 / 20	each final patch	values within the expected tolerances

- LABORATORY -

TYPE OF TEST	CHECK AND INSPECTION	METHODOLOGY	BLF PROCEDURE	FREQUENCY	RESULT
dimensional control	core diameter, cable diameter, cross-section and thickness of insulation	CEI 20-34	IO / 10 / 34	one specimen every 700 km of product	values within the expected tolerances
electric tests on conductors	I° ohm resistance	CEI 20-34	IO / 10 / 34	one specimen every 700 km of product	values complying with DIN VDE 0295 standard
(2)	II° dielectric strength test	CEI 20-19/2	IO / 10 / 34	one specimen every 700 km of product	absence of perforations
mechanical test on the conductors and on sheath	elongation at break before aging	CEI 20-34	IO / 10 / 34	one specimen every 700 km of product	150 % minimum
mechanical test on the conductors and on sheath	elongation at break after aging (1)	CEI 20-34	IO / 10 / 34	one specimen every 700 km of product	120 % minimum
mechanical test on the conductors and on sheath	tensile strength before aging	CEI 20-34	IO / 10 / 34	one specimen every 700 km of product	50 kg/sq. cm minimum
mechanical test on the conductors and on sheath	tensile strength after aging (1)	CEI 20-34	IO / 10 / 34	one specimen every 700 km of product	40 kg/sq.cm minimum
mechanical strength of completed cable "Flexing test"	Resistance of flexing test	CEI 20-19/2	IO / 10 / 34	one specimen every 700 km of product	Absence of electricity interruption – of short circuit between the conductor and with the external. And test electric in H2O absence of perforations.
Under fire condition	In vertical position the cable don't propagation the flame	CEI 20-34	IO / 10 / 34	one specimen every 700 km of product	char length less than 475mm

(1) - Aging conditions : the specimens are put for 10 days in air oven aging at 200°C.

(2) - Dielectric strength test : a 5 mt specimen is soaked into tap water for 1 hour and afterwards it must withstand 15 minutes of test voltage without breaking. The test voltage is indicated on the front page of this document.