



Marine & Offshore
Division

Certificate number: 03922/F1 BV

File number: ACE 03/017/01

Product code: 2645H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

MERSEN FRANCE SB S.A.S
SAINT BONNET DE MURE - FRANCE

for the type of product

FUSES / FUSES COMBINATION UNITS (LOW VOLTAGE)

Types - series: FR10GG, FR10AM, FR14GG, FR14AM, FR22GG, FR22AM (With or without indicator).

Requirements:

BV Rules for the Classification of Steel Ships.

IEC 60269-1 (2014), IEC 60269-2 (2014).

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 26 Jan 2020

For BUREAU VERITAS,

At BV LYON, on 04 Apr 2016,

Jean-Marc Cabuzel



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine & Offshore Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Designation	Rated Voltage	Min-Max Current	Breaking Capacity	Remarks
Fuse-Link	(V)	(A)	(kA)	
Cylindrical FR10GG	690 500 400	1 - 16 0.5 - 25 32	120 kA 400/500/690V	With or without indicator
FR10AM	690	1 - 12	120 kA	
FR10AM	500	20	400/500/690V	
FR10AM	400	25 - 32		
FR14GG	690	1 - 25	120 kA	
FR14GG	500	32-50	500/690V	
FR14AM			120 kA	
FR14AM	690	0.25 - 40	500/690V	
	500	45 - 50		
FR22GG			120 kA	
FR22GG	690	2 - 80	500/690V	
	500	100 - 125		
FR22AM			120 kA	
FR22AM	690	1 - 80	500/690V	
	500	100 - 125		

2. DOCUMENTS AND DRAWINGS:

According to documents filed in ACE 03/017/01.

Gap analysis between IEC 60269-1 2006/2014, dated 02.Dec.2014 (includes gap analysis on IEC 60269-2).

Gap analysis between IEC 60269-4 2006/2013, dated 02.Dec.2014.

3. TEST REPORTS:

3.1 - Tested according to IEC 269-1 (1986) [equivalent to EN 60269-1 (1989)] and IEC 269-2-1 (1987).

3.2 - Additional test reports issued by Siemens in 1995.

3.3 - Test Reports RE4762 FUS, RE4763 FUS, RE4576, RE4577, issued by A.M. AMPERE in 1996.

3.4 - **COFRAC** test reports issued by FERRAZ SHAWMUT Saint Bonnet de Mure Tests Center N°: According to IEC 60269-1 Ed. 4 dated 2006.11 and IEC 60269-2 Ed. 3 dated 2006.11, N° 826002-1to 5 dated Dec./2008, 810103/1to10 dated Jul. & Sep./2008, 810104/1to 14 dated Jul. & Sep. & Oct./2008, N° 826003-1 to 8 dated Nov./2008, 810802-1 to 10 dated Aug. & Sep./2008, 810803-1 to 12 dated Aug. & Sep./2008, N° 852503-1 to 16 dated Apr./2009, 832501-1 to 13 dated Dec. 2008, 835204-1 to 17 dated Jun. & Jul. 2009.

4. APPLICATION / LIMITATION:

According to BV Rules for the Classification of Steel Ships.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be supplied by **MERSEN FRANCE SB S.A.S**, in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320.

5.3 - **MERSEN FRANCE SB S.A.S**, has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products :

Name of Production Sites	Address	Country
MERSEN FRANCE SB S.A.S ,	15 Rue de Vaucanson, 69720 SAINT Bonnet de Mure	FRANCE
NOLAM Tunisia	Rue de Nabeul lot n° 4 - Zone Industrielle de M'Ghira	TUNISIA

6. MARKING OF PRODUCT:

The items prescribed below shall be marked on an easily visible place of fuse surface in an indelible way.

- (1) Rated voltage (V)
- (2) Rated current (A)
- (3) Rated breaking capacity
- (4) Fusing Factor
- (5) Manufacturer's name
- (6) Model N°
- (7) Approved class name.

7. OTHERS:

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that **MERSEN FRANCE SB S.A.S**, will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 03922/F0 BV issued on 20.Jan.2015. by the Society.

*** END OF CERTIFICATE ***