CERTIFICATE NUMBER

07-GE217783-PDA

DATE

23 January 2007

ABS TECHNICAL OFFICE

Genoa Engineering

CERTIFICATE OF Design Assessment

This is to Certify that a representative of this Bureau did, at the request of

CATEF SRL

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate. It will remain valid as noted below or until the Rules or specifications used in the assessment are revised (whichever occurs first).

PRODUCT:	Fire Extinguishing System
MODEL:	Marine Fire Series 740
ABS RULE:	2007 Steel Vessel Rules 4-7-3/3
OTHER STANDARD:	USGC TA cert. 162.029/245/0 exp. 08 Sept 2010 Factory Mutual Approval report Project ID: 3021620 Class 5612 dated 16 December 2005

AMERICAN BUREAU OF SHIPPING

Lucio Trevisan

Engineering Type Approval Co-ordinator

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Product: **Fire Extinguishing System**

Model: **Marine Fire Series 740**

Intended Service:
Protection of machinery spaces (up to 1,500 cubic feet).

Description:
FE-227 Clean Agent (HFC-227ea, Heptafluoropropane) Pre Engineered Fire Suppression Total Flooding System

Ratings:
NA

Service Restrictions:
1) Unit Certification is required for this product.
2) The Type Approval only covers the individual control, activation, distribution, and alarm components as described in part number list in accordance with the Design, Installation, Operation and Maintenance Manual BSCO P/N 490015 release date June 2005; complete details for each FE-227 Fire Suppression System installation must be submitted to an ABS Technical Office for review and approval and are to include the following:
a) System schematic and arrangement drawings showing operation philosophy and indicating compliance with 4-7-3/3 of the ABS Steel Vessel Rules;
b) Control arrangement and location of release boxes;
c) Capacity calculations, to be in accordance with ABS Rules, NFPA 2001 requirements and Design, Installation, Operation and Maintenance Manual BSCO P/N 490015.
d) Complete Bill of materials (including shipyard pipework). All piping, electrical and mechanical components part numbers are to be consistent with those listed in the cited Design, Installation, Operation and Maintenance Manual
e) Storage arrangements for the agent cylinders indicating compliance with SVR 4-7-3/3.1.9 and other applicable regulation; the temperature of the cylinder storage area is to be between the limits indicated of 0°F to 130°F (-17.7°C to 54.4°C);
f) Control arrangements for closing all openings and stopping of ventilation fans;
g) Equipment such as cables, alarms, etc. as applicable, to be suitable for the space in which they are intended;
h) Wiring diagrams and cable specifications showing cable layout, alarm circuitry and location.
3) Documentation (Certification) verifying design, fabrication and inspection in accordance with recognized standard and specification as per Installation and Maintenance Manual is to be provided for each cylinder, and is to be made available to the Surveyor attending installation; Refer to 4-7-1/1 of the ABS SV Rules (2007) & USCG Certificates;
4) Acceptance of the agent by the appropriate Flag Administration
5) In unmanned protected space authorization of automatic release, is subject to the appraisal of the Administration

Comments:
Manual release arrangement of the system with storage of extinguishing medium outside the protected space should be the default configuration. Storage of extinguishing medium within the protected space is discouraged. Such arrangements should be considered only after all alternatives have been evaluated. However storage within the protected space is a viable option where there is no storage space available outside the protected space or where technical limitations of the agent discharge restrict agent cylinder placement.
Limitation as per Design, Installation, Operation and Maintenance Manual BSCO released on June 2005 due to: geometrical characteristic of the protected spaces, controls in manned and unmanned spaces, installation and storage of the cylinders are to be strictly respected.
Evidence of final acceptance by the appropriate Flag Administration for the proposed installation/arrangement is to be submitted to the ABS technical office reviewing the system.

Notes/Documentation:
This Product Design Assessment (PDA) is valid only for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate

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the Product.

Term of Validity:
This Design Assessment Certificate number 07-GE217783-PDA, dated 23/Jan/2007 will expire on 22/Jan/2012 or at an earlier date should there be alterations to the product's design or changes to the referenced ABS Rules and other specifications, which affect the product. Product use on or after 1 January 2008, will be subject to compliance with the ABS Rules or specifications in effect when the vessel, MODU or facility is contracted. The product's acceptability on board ABS-classed vessels or facilities is defined in the service restrictions of this certificate.

STANDARDS

ABS Rules:
2007 Steel Vessel Rules 4-7-3/3

Others:
USGC TA cert. 162.029/245/0 exp. 08 Sept 2010
Factory Mutual Approval report Project ID: 3021620 Class 5612 dated 16 December 2005