



CERTIFICATE NUMBER	24-2510405-PDA
EFFECTIVE DATE	19-Mar-2024
EXPIRY DATE	18-Mar-2029
ABS TECHNICAL OFFICE	Houston ESD - Piping

CERTIFICATE OF Product Design Assessment

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

KIDDE-FENWAL INC.

located at

400 MAIN STREET, , ASHLAND, MA, United States, 01721

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.

Product: Fixed Fire Extinguishing System
Model: Kidde Fire Systems ECS-500™ PSI Fire Suppression System Marine Series with 3M™ Novec™ 1230 and Fluoro-K Fire Protection Fluid
Endorsements:
Tier: 2 - PDA Issued

This Product Design Assessment (PDA) Certificate remains valid until 18/Mar/2029 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping


John Vincent Bog-Acon Ulep, Senior Principal Engineer

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

KIDDE-FENWAL INC.

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United States 01721

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Tier: 2 - PDA Issued

Product: Fixed Fire Extinguishing System**Model:** Kidde Fire Systems ECS-500™ PSI Fire Suppression System Marine Series with 3M™ Novec™ 1230 and Fluoro-K Fire Protection Fluid**Endorsements:****Intended Service:**

Marine and Offshore Applications - Fixed fire extinguishing systems for the protection of machinery spaces, cargo pump rooms, and other enclosed spaces with Class B and Class C hazards.

Description:

ECS 500 psi total flooding clean agent fixed fire extinguishing system with 3M™ Novec™1230 and Fluoro-K Fire Protection Fluid

Rating:

Ratings to be in accordance with Manual P/N 06-237589-001.

Agent Storage Pressure: 500 psig at 70 Degrees F

Minimum and Maximum Storage Temperatures: 32 Degree F to 130 Degree F (0 Degree C TO 54 Degree C)

Maximum Design Concentrations for Hazard Class: Class A: 4.5% and Class B % varies on fuel

Minimum and Maximum Nozzle Heights: 16 ft (5.0 m) maximum height and 1 ft (0.3 m) minimum height

Type Nozzle available: 180 degree and 360 degree

Minimum and maximum discharge times: 6 to 10 sec

Maximum area cover:

a) 180 Degree, 538 sq. ft (50 sq. mt); Maximum Radial Coverage (Distance to farthest corner): 18.50 ft (5.6m)

b) 360 Degree, 538 sq. ft (50 sq. mt); Maximum Radial Coverage (Distance to farthest corner): 30 ft (9.1 m)

Design Software: Flow-Calc Software and Kidde Fire Systems ECS-500 psi Fire Suppression System Flow Calculation Software

Service Restriction:

1. Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
2. The Type approval only covers the individual control, activation, distribution, and alarm components as listed in document P/N 06-237589-001, August 2023, Rev. AD. Complete details for each installation must be submitted to an ABS Technical Office for review and approval.
3. Kidde Fire Systems ECS 500 psi Fire Suppression System Flow Calculation Software (P/N 06-237588-001) is the only calculation method to be used with Kidde ECS 500 psi Marine System equipment. No other calculation method is authorized by or acceptable.
4. The agent shall not be used on fires involving the following materials, unless they have been tested to the satisfaction of the Flag Administrations:
 - a) Certain chemicals or mixtures of chemicals, such as cellulose nitrate and gunpowder, that are capable of rapid oxidation in the absence of air.
 - b) Reactive metals such as lithium, sodium, potassium, magnesium, titanium, zirconium, uranium and plutonium.
 - c) Metal hydrides.
 - d) Chemicals capable of undergoing autothermal decomposition, such as certain organic peroxides and hydrazine.
5. Automatic actuation may be allowed in addition to manual actuation, provided that the conditions are met in accordance with ABS Marine Vessel Rules 4-7-3/3.13.4(c).
6. Ordinary cast-iron pipe, steel pipe conforming to ASTM A-120, or nonmetallic pipe must not be used.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. The scope of Type Approval is to comply with IMO MSC/Circ.848 as amended by MSC.1/Circ.1267 dated 4 June

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3. The arrangement of the controls is to be in accordance with 4-7-3/3.13.4 (c) of the Marine Vessel Rules. When this system is installed for automatic release, the conditions are in accordance with 4-7-3/3.13.4(c) Marine Vessel Rules are to be met and verified by the attending surveyor:

4. For US Flag Vessels: Systems must have releasing stations consisting of one control to operate the stop valve to the protected space and a second control to release at least the required amount of agent. These two controls must be located in a box or other enclosure clearly identified for the particular space. In addition to the above, automatic discharge arrangements may be used for spaces having a gross volume less than 6,000 cubic feet. However, automatic discharge is required for spaces having a gross volume less than 6,000 cubic feet where the agent is stored in the protected space.

5. USCG does not allow Electrically Triggered Detection & Control System. USCG requirements for Storage inside small Spaces (6000 cu.ft. and smaller) include Mechanical Rate of Rise Detection, Automatic Activation, additional Mechanical Activation requiring 2 Actions, and readily Accessible Horizontal Means of Escape.

Notes/Drawing/Documentation:

Drawing No. 06-236559-001, Rev. AD, Kidde Fire Systems ECS 500 psi Fire Suppression System Marine Series for use with Fluoroketone Fire Suppression Agents DIOM Manual, Revision:-, Pages: 1

Drawing No. 06-237588-001, Kidde Fire Systems ECS-500 psi Fire Suppression System Flow Calculation Software User's Guide, Revision: AC, Pages: 1

Terms of Validity:

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STANDARDS**ABS Rules:**

2024 Rules for Conditions of Classification, 1A-1-4/7.7, 1A-1A-A3, 1A-1-A4, which covers the following:
2024 Rules for Building and Classing Marine Vessels: 4-7-3/3.11, 4-7-3/3.1.5, 4-7-3/3.1.9, 4-7-3/Table 2

2024 Rules for Conditions of Classification, Offshore Units and Structures, 1B-1-4/9.7, 1B-1-A2, 1B-1-A3, which covers the following:

2024 Rules for Building and Classing Mobile Offshore Units: 5-2-3/8

National:

NA

International:

IMO MSC/Circ.848 as amended by MSC.1/Circ.1267 dated 4 June 2008
UL 2166 Standard for Halocarbon Clean Agent Extinguishing System Units (May 2017)

Government:

US Coast Guard Approval No: 162.161/15/0; Expires: 17 July 2028; Approval Date: 17 July 2023

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EUMED:

NA

OTHERS:

NA