



CERTIFICATE NUMBER

DATE

06-HS154367-2-PDA

07 April 2011

ABS TECHNICAL OFFICE

Houston OED - Safety

CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of
Greenheck Fan Corporation - Schofield

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: **Fire Damper**

MODEL: **IMO-310, SSIMO-310, IMO-311, SSIMO-311**

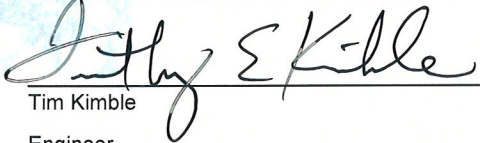
This Product Design Assessment (PDA) Certificate 06-HS154367-2-PDA, dated 07/Apr/2011 remains valid until 06/Apr/2016 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING


Tim Kimble
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 the terms and conditions as contained in ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

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Product: Fire Damper

Model: IMO-310, SSIMO-310, IMO-311, SSIMO-311

Intended Service:

Marine & Offshore Application - Fire Dampers for use in both Horizontal and Vertical Installations in A-Class Divisions, up to and including A-60.

Description:

Rectangular, Multi-Blade, Steel, Fire (-310) and combination Fire-Smoke (-311) Dampers, constructed of Galvanized Steel (IMO-) or Stainless Steel (SSIMO-), installed in either Single or Multiple Sections. Sizes Range from 8 in. x 6 in. (W x H) to 32 in. x 32 in. (W x H), Single Section, and 64 in. x 32 in. (W x H), Multiple Sections.

Ratings:

A-60 - 8 in. x 6 in. to 32 in. x 32 in. Single Section, bulkhead (vertical) or deck (horizontal) orientation
A-30 - 64 in. x 32 in. Multiple Sections, bulkhead (vertical) or deck (horizontal) orientation
Actuators for -311 Dampers may be 120VAC, 24VDC, Pneumatic (20, 25 psi min.)

Service Restrictions:

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.

- 1) Ducts to which the Fire Dampers are attached are to be Steel, with dimensions in compliance with SOLAS Regulations.
- 2) Dampers installed in penetrations of A-class divisions must have the ability to be Manually Closed from both sides of the divisions and they must have Open/Closed Status Indicators.
- 3) Coaming Length from the Division core, excluding Damper, is to be at least as follows: Bulkhead Orientation, Exposed Side - 450 mm / Unexposed Side - 727 mm; Deck Orientation, Exposed Side - 152 mm / Unexposed Side - 450 mm.
- 4) Where the Administrations require the Dampers to satisfy both the Insulation and Integrity Criteria of IMO Res.A754(18), Appendix A.11, Insulation of the attached Damper Coaming is to be appropriate for the "A-" Class Division being penetrated.

Comments:

- 1) The Fusible Link tested was a Thermostat-Type Temperature Response Device (RLL) rated at 212°F (100°C). The Standard Rating is 165°F (74°C).
- 2) Only Dampers constructed and installed in accordance with the listed Greenheck documentation are covered by this assessment.
- 3) This Product Design Assessment is not to be construed to be a substitute for a Flag Administration's approval for the purpose of SOLAS 74/78 and Amendments thereto, unless specifically directed by that Administration.

Notes / Drawings / Documentation:

- Identifying Data: 1. Greenheck Dampers and Louvers Specification IMO-310, Rev. 5 March 2011
2. Greenheck Dampers and Louvers Specification SSIMO-310, Rev. 5 March 2011
3. Greenheck Dampers and Louvers Specification IMO - 311, Rev. 6 April 2011
4. Greenheck Dampers and Louvers Specification SSIMO-311, Rev. 6 April 2011
5. Greenheck Installation, Operation and Maintenance Instructions for IMO-XXX & SSIMO-XXX Series Fire and Combination Fire Smoke Dampers, vertical or horizontal mount (Part No. 464603), Rev.1, July 2004. 6. UL Fire test report on horizontal fire dampers Report No. R13317 / Proj. 03NK31474 (June 2004)
7. UL Fire test report on vertical marine fire dampers Report No. R13317 / Proj. 05NK26772 (Dec. 2005)

Term of Validity:

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STANDARDS

ABS Rules:

2011 Steel Vessel Rules 1-1-4/7.7, 1-1-Appendix 3, 3-4-1, 4-7-2/3.7; 2001 Guide for Building and Classing Passenger Vessels , 4/5.15/11; 2008 Mobile Offshore Drilling Unit Rules, 5-1-1/5.23.

National:

NA

International:

IMO FTP Code Res.A754(18), SOLAS 1974 (as amended, 2004 amendments) Chapter II-2, 9.7.1.2, 9.7.2, 9.7.3.1.2, 9.7.5.1.2, 9.7.5.2.1.2

Government Authority:

Coast Guard Approval Number: 164.139/7/0; Issued :8/9/2009;Expires:8/9/2014

EUMED:

NA

Others:

NA