

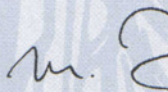

## CERTIFICATE OF FIRE APPROVAL

This is to certify that

The product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

<b>Manufacturer</b>	ACTIONAIR
<b>Address</b>	South Street Whitstable Kent, CT5 3DU United Kingdom (UK)
<b>Type</b>	FIRE DAMPER (STANDARD FIRE TEST)
<b>Description</b>	Single/Multi Blade Fire Damper – Type: "A-60 Marine"
<b>Specified Standard</b>	IMO Fire Test Procedures Code, Annex 1, Part 3

The attached Design Appraisal Document forms part of this certificate.  
This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

Date of issue	13 June 2007	Expiry date	12 June 2012
Certificate No.	SAS F070145	Signed	 
Sheet No	1 of 3	Name	M. Farrier Surveyor to Lloyd's Register EMEA A Member of the Lloyd's Register Group

**Note:**

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.

"Lloyd's Register, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register Group'. The Lloyd's Register Group assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register Group entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract."

**DESIGN APPRAISAL DOCUMENT**

Date 13 June 2007	Quote this reference on all future communications LDSS/PAS/FITA/PG/MF/1-10826302
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**ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F070145**

This Design Appraisal Document forms part of the Certificate.

**APPROVAL DOCUMENTATION**

BRE Fire Research Station, Hertfordshire, United Kingdom, Fire Test Report Nos. TE201588, TE202091 and 208147A, dated 2 January 2001, 28 February 2001 and 17 May 2002 respectively. Fire Protection and Research Laboratory (RINA), Genoa, Italy, Test Report No. 2005CS013898, dated 13 October 2005 and No. 2006CS013874, dated 11 October 2006.

**CONDITIONS OF CERTIFICATION**

1. For use in 'A-0', 'A-15', 'A-30' and 'A-60' divisions with ducting suitably insulated. The table below shows minimum total duct insulation lengths which may be interpolated for intermediate sizes based on the internal cross-sectional area of duct.

	100mm x 100mm	750mm x 750mm	1000mm x 1000mm
Bulkhead	625mm	725mm	1100mm
Deck	625mm	725mm	1100mm

2. Minimum clear opening size of damper: 100mm x 100mm.
3. Maximum clear opening size of damper: 1000mm x 1000mm.
4. Maximum clear opening size of multiple damper: 1580mm x 750mm.
5. For use in decks and bulkheads with Actionair ETR72 thermal link, PTR Pneumatic Thermal Release or Fire Safe Thermal Link with appropriate actuator.
6. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure that items are of the same standard as the approved prototype.

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#### ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F070145

#### PLACE OF PRODUCTION

ACTIONAIR  
South Street  
Whitstable  
Kent, CT5 3DU  
United Kingdom (UK)

Martin Farrier  
Lead Specialist  
Product Approval Services  
London Design Support Services  
Lloyd's Register EMEA

#### Supplementary Type Approval Terms and Conditions

*This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s).*