
CERTIFICATE OF APPROVAL

No CF 849

This is to certify that, in accordance with
TS00 General Requirements for Certification of Fire Protection Products
The undermentioned products of

ZOO HARDWARE LTD

Unit B, Dukes Drive, Kingmoor Park North,
Carlisle, Cumbria CA6 4SH

Tel: 01228 672900 Fax: 01228 672928

Have been assessed against the requirements of the Technical Schedule(s)
denoted below and are approved for use subject to the conditions
appended hereto:

CERTIFIED PRODUCT

Zoo Hardware Ltd Stainless Steel
Ball Bearing Hinges

TECHNICAL SCHEDULE

TS24 The Contribution of
Single Axis Hinges to the Fire
Resistance of Door Assemblies

Signed and sealed for and on behalf of Exova (UK) Limited trading as
Warrington Certification



Paul Duggan
Certification Manager



Issued:
Revised:
Valid to:

20th July 2011
2nd October 2017
21st July 2021

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ZOO HARDWARE LTD

Zoo Hardware Ltd Stainless Steel Ball Bearing Hinges

- 1) This approval relates to the use of Zoo Hardware Ltd stainless steel, ball bearing single axis hinges.
- 2) This certification is designed to demonstrate compliance of the product or system specifically with Approved Document B (England and Wales), Section D of the Technical Standards (Scotland) and Technical Booklet E (N. Ireland). If compliance is required to other regulatory or guidance documents there may be additional considerations or conflict to be taken into account.
- 3) This approval relates to the use of the above single axis hinges in contributing to the fire resistance performance of timber based doorsets and metallic based doorsets, as defined in BS EN 1634-1 or BS 476: Part 22: 1987.
- 4) This approval relates to their use with the following door assemblies:-

Latched and unlatched, intumescent sealed door assemblies consisting of timber faced and edged leaves with timber, cellulosic or mineral cores in timber frames having a fire resistance of up to 120 minutes (Code ITT).

Latched and unlatched, door assemblies consisting of uninsulated or insulated metal door assemblies in metal frames with or without intumescent seals having a fire resistance up to 240 minutes (Code IMM/MM).
- 5) The hinges are approved on the basis of:
 - i) Initial type testing to EN1935 and EN 1634-1
 - ii) An appraisal against TS24
 - iii) Certification of quality management system to ISO 9001: 2008.
 - iv) Inspection and surveillance of factory production control
 - v) Ongoing audit testing in accordance with TS24 requirements
- 6) The hinges approved are stainless steel, ball bearing single axis, class 11 or 13. Hinges referenced ZHSS244 and ZHSS243.5 are not approved for use with 20 or 30 minute ITT doorsets. The hinges are of various finishes, grades of stainless steel and have square or radius corners. Only those hinges referenced below are approved by this certificate:

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Hinges approved for 30 minutes and 60 minutes	
Reference	Description
ZHSS243P	Grade 13 Stainless Steel - Grade 201 - 102 x 76 x 3mm
ZHSS243P3	Grade 13 Stainless Steel - Grade 201 - 102 x 76 x 3mm (pair and a half)
ZHSS243PVD	Grade 13 Stainless Steel - Grade 201 - 102 x 76 x 3mm
ZHSS243PVD3	Grade 13 Stainless Steel - Grade 201 - 102 x 76 x 3mm (pair and a half)
ZHSS243RP	Grade 13 Stainless Steel Radius - Grade 201 - 102 x 76 x 3mm Radius
ZHSS243RPVD	Grade 13 Stainless Steel Radius Grade 201 - 102 x 76 x 3mm Radius
ZHSS243RS	Grade 13 Stainless Steel Radius - Grade 201 - 102 x 76 x 3mm
ZHSS243S	Grade 13 Stainless Steel - Grade 201 - 102 x 76 x 3mm
ZHSS243S3	Grade 13 Stainless Steel - Grade 201 - 102 x 76 x 3mm (pair and a half)
ZHSS43P	Grade 13 Stainless Steel - Grade 304 - 102 x 76 x 3mm
ZHSS43RP	Grade 13 Stainless Steel Radius - Grade 304 - 102 x 76 x 3mm
ZHSS43RS	Grade 13 Stainless Steel Radius - Grade 304 - 102 x 76 x 3mm
ZHSS43S	Grade 13 Stainless Steel - Grade 304 - 102 x 76 x 3mm
ZHSSDB243S	Grade 13 Stainless Steel Dog Bolt Door Hinge 102 x 76 x 3mm
ZHSS7667	Grade 11 Stainless Steel - 76 x 67 x 2.5mm

Hinges approved for 60 minutes only	
Reference	Description
ZHSS244S	Grade 13 Stainless Steel - Grade 201 - 102 x 102 x 3mm
ZHSS244P	Grade 13 Stainless Steel - Grade 201 - 102 x 102 x 3mm
ZHSS244PVD	Grade 13 Stainless Steel - Grade 201 - 102 x 102 x 3mm
ZHSS243.5S	Grade 13 Stainless Steel - Grade 201 - 102 x 89 x 3mm
ZHSS243.5P	Grade 13 Stainless Steel Radius - Grade 201 - 102 x 89 x 3mm
ZHSS243.5PVD	Grade 13 Stainless Steel Radius Grade 201 - 102 x 89 x 3mm

- 7) This approval relates to the above hinges used with latched or unlatched single-leaf or double-leaf door assemblies consisting of timber faced and edged leaves with timber, cellulosic or mineral cores and in timber frames:
- a) FD30, E30 and EI30 applications (Code ITT) – Door leaves shall not less than 44 mm thick doors and shall include hardwood timber lippings to the vertical edges having a minimum density of 640 kg/m³. The door frame shall consist of timber with a minimum density of 450 kg/m³ (with leaf to frame gaps not greater than 3 mm).
 - (i) All hinges must be bedded onto a 1 mm thickness of mono ammonium phosphate or graphite-based intumescent sheet material behind both blades.

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- b) FD60, E60 and EI60 applications (Code ITT) – Door leaves shall not less than 54 mm thick doors and shall include hardwood timber lippings to the vertical edges having a minimum density of 640 kg/m³. The door frame shall consist of timber with a minimum density of 640 kg/m³ (with leaf to frame gaps not greater than 3 mm).
 - i) All hinges must be bedded onto a 2 mm thickness of mono ammonium phosphate or graphite-based intumescent sheet material behind both blades.
- c) Steel-based assemblies (MM/IMM)
 - i) Door leaves shall have a minimum thickness of 44 mm for up to 240 minute applications.
- 8) For 90 minute and 120 minute timber and mineral-based assemblies (ITT), Zoo hinges shall only be fitted to doorsets which have previously been tested with hinges of a similar size, subject to the following requirements:
 - i) The required intumescent protection shall be as tested by the chosen door manufacturer. In all cases this shall be a minimum of a 2 mm thick mono ammonium phosphate or graphite-based intumescent sheet material incorporated beneath each hinge blade, however, this protection shall be increased as required based on the chosen doorset manufacturers test data.
 - ii) Where the perimeter intumescent fire seal tested within the chosen doorset by-passes the hinge, this detail shall be maintained.
 - iii) The critical dimensions of the Zoo hinge to be used shall be based on the size of the hinge tested originally by the chosen doorset manufacturer, with the following tolerance:

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Hinge Specification of Chosen Doorset	
Component/dimension	Tolerance/Rule
Hinge blade	
Width	+0/-5% of tested hinge
Height	+/-20% of tested hinge
Thickness	+/-15% of tested hinge
Knuckle	
Diameter	Minimum 14 mm
Fixings	
Quantity	Maximum 3No. fixings tested
Size	4.7 mm dia. Minimum
Length	No shorter than that tested
Position (width)	+/-10% from the positions of the fixings in the tested hinge when measured with respect to the centre lines of the blade

Note: Where the Zoo hinge does not comply with the parameters identified above it shall not be used in conjunction with the chosen 90 minute and 120 minute timber and mineral-based assemblies (ITT).

- 9) The above hinges may only be fitted to previously tested timber door assemblies when fitted in the manner described in this certificate and when particular aspects of the door assembly are maintained.
- 10) Hinges shall only be fitted using the fixings supplied by the hinge manufacturer.
- 11) The doorset, including door frame and associated building hardware, should be either CERTIFIRE approved for the relevant application and classification or the doorset, including door frame and associated building hardware, should have achieved at least the required 30 or 60 minutes fire resistance performance when tested, or subsequently assessed to BS 476: Part 22: 1987 or EN 1634-1. In either case regard should be paid to the maximum door mass permitted to be used with the hinge (see classification).
- 12) The doorset shall be installed in accordance with BS 8214.
- 13) The approval relates to ongoing production. Product and/or its immediate packaging is identified with the manufacturer's name, the product name or number, the CERTIFIRE name or name and mark, together with the CERTIFIRE certificate number and application where appropriate.

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14) The following table show acceptable doorset types and fire resistance periods:

Class	Approved Door Type					
	IMM	MM	ITT	ITM	ITC	TM
FD20	✓	✓	✓*	✗	✗	✗
FD30	✓	✓	✓*	✗	✗	✗
FD60	✓	✓	✓	✗	✗	✗
FD90	✓	✓	✓	✗	✗	✗
FD120	✓	✓	✓	✗	✗	✗
FD240	✓	✓	✗	✗	✗	✗
E 20	✓	✓	✓*	✗	✗	✗
EI 20	✓	✓	✓*	✗	✗	✗
E 30	✓	✓	✓*	✗	✗	✗
EI 30	✓	✓	✓	✗	✗	✗
E 60	✓	✓	✓	✗	✗	✗
EI 60	✓	✓	✓	✗	✗	✗
E 90	✓	✓	✓	✗	✗	✗
EI 90	✓	✓	✓	✗	✗	✗
E 120	✓	✓	✓	✗	✗	✗
EI 120	✓	✓	✓	✗	✗	✗
E 240	✓	✓	✗	✗	✗	✗
EI 240	✓	✓	✗	✗	✗	✗

Key:

✓ - approved

✗ - Not approved

✓* - ZHSS244 and ZHSS243.5 are not approved for use with 20 or 30 minute ITT doorsets.

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15) Doors are classified as the following types:

Type MM - 20 minute to 240 minute doorsets that consist of metallic leaves in metallic frames that do not contain intumescent materials in the frame to leaf gap.

Type IMM - 20 minute to 240 minute doorsets that consist of metallic leaves in metallic frames that contain intumescent materials in the frame to leaf gap.

Type ITT - 20 minute to 120 minute doorsets containing intumescent seals and consisting of non-metallic faced and edged leaves hung in timber frames

Type ITM - 20 minute to 120 minute doorsets containing intumescent seals and consisting of non-metallic faced and edged leaves hung in metal frames.

Type ITC - 20 minute to 120 minute doorsets containing intumescent seals and consisting of non-metallic faced and edged leaves hung in proprietary composite frames, of which the principal material is other than timber or metal but which may include any other materials.

Classification codes

The above approval provides the following classifications:

All hinge models except ZHSSDB243S and ZHSS7667.

4	7	6	1	1	4	0	13
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ZHSSDB243S - Stainless Steel Dog Bolt Hinge 102 mm x 76 mm x 3 mm

4	7	6	1	1	4	1	13
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ZHSS7667- Stainless Steel Hinge 76 x 67 x 2.5mm

3	7	4	1	1	4	0	11
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Further Information

Further information regarding the details contained in this certificate may be obtained from Zoo Hardware Ltd (Tel: 01228 672900).

Further information regarding CERTIFIRE certification and other approved products can be obtained from CERTIFIRE (Tel: 01925 646777).