



CERTIFICATE OF APPROVAL

No CF 5357

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 672 900

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

Vier Precision Design Lift Off
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 Warringtonfire Testing and Certification Limited

Paul Duggan
Certification Manager



Issued:
Revised:
Valid to:

24th August 2015
27th March 2021
17th January 2026

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Zoo Hardware Ltd Vier Precision Design Lift Off Hinges

1. The hinges approved are nominally 102 mm by 76 mm by 3 mm and are stainless steel and mild steel, single axis, lift-off, Grade 11. The model references are shown in the tables below:

VLHL243R	Grade 11 Stainless Steel - Grade 201 - Radius - 102 x 76 x 3mm, Left Hand
VLHR243R	Grade 11 Stainless Steel - Grade 201 - Radius - 102 x 76 x 3mm, Right Hand
VLHL243	Grade 11 Stainless Steel - Grade 201 - 102 x 76 x 3mm, Left Hand
VLHR243	Grade 11 Stainless Steel - Grade 201 - 102 x 76 x 3mm, Right Hand
VSLHL43R	Grade 11 Mild Steel - Radius - 102 x 76 x 3mm, Left Hand
VSLHR43R	Grade 11 Mild Steel - Radius - 102 x 76 x 3mm, Right Hand
VSLHL43	Grade 11 Mild Steel - 102 x 76 x 3mm, Left Hand
VSLHR43	Grade 11 Mild Steel - 102 x 76 x 3mm, Right Hand
VLH-L243-14-R	Grade 14 Stainless Steel - Grade 201 - Radius - 102 x 76 x 3.4mm - Left Hand
VLH-R243-14-R	Grade 14 Stainless Steel - Grade 201 - Radius - 102 x 76 x 3.4mm - Right Hand
VLH-L243-14	Grade 14 Stainless Steel - Grade 201 - 102 x 76 x 3.4mm - Left Hand
VLH-R243-14	Grade 14 Stainless Steel - Grade 201 - 102 x 76 x 3.4mm - Right Hand

2. This certification is provided to the client for their own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.
3. This approval relates to their use with the following door assemblies:-

Grade 11 and 14 hinges - 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 up to 60 minutes (Code ITT).

Grade 11 hinges only - 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 up to 60 minutes (Code ITT).

Grade 11 hinges only - Latched and unlatched, door assemblies consisting of uninsulated or insulated predominantly steel leaves, hung in steel frames with or without intumescent seals having a fire resistance up to 240 minutes (Code IMM/MM).

4. This approval relates to the use of the above single axis hinges in contributing to the fire resistance performance of timber/mineral- based doorsets and steel-based doorsets, as defined in BS EN 1634-1 or BS 476: Part 22: 1987.

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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.
 - iv) Inspection and surveillance of factory production control
 - v) Ongoing audit testing in accordance with TS24 requirements
6. EN1634-1 was issued originally in 2000, with amended versions issued in 2008, 2014 and 2018. The differences between each version are mainly procedural and are not considered to have a practical impact on the performance of the samples under test. On this basis this evaluation is considered applicable to all versions of EN1634-1 issued prior to the issue of this certificate.
7. An appraisal of the hardware variants detailed in this report is based upon product information supplied by the hardware manufacturer/supplier, which is retained in the confidential file relating to this report. Warringtonfire have not inspected the devices being appraised and cannot be held responsible for the accuracy of the information provided.
8. The door assembly shall be a CERTIFIRE approved product or have achieved the appropriate fire resistance performance when tested at a UKAS accredited laboratory in accordance with BS 476: Part 22: 1987 and/or BS EN 1634:1 with hinges of a similar size.
9. **ITT 30 and 60 doorsets** - This approval relates to all 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 with the following minimum specification:
1. 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).
- 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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10. 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).
- All hinges must be bedded onto a 2 mm thickness of mono ammonium phosphate or graphite-based intumescent sheet material behind both blades.
11. ITT 90 minute and 120 minute (ITT) - Relates to grade 11 hinges only, and shall only be fitted to doorsets which have previously been tested with hinges of a similar size, subject to the following requirements:
- 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.
 - Where the perimeter intumescent fire seal tested within the chosen doorset by-passes the hinge, this detail shall be maintained.
 - 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:

Hinge Specification of Chosen Doorset	
Component/dimension	Tolerance/Rule
Hinge blade	
Width	+0/-5% of tested hinge
Height	+/-5% 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).





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12. Steel-based assemblies (MM/IMM)
 - Grade 11 hinges only may be used with MM/IMM doorsets
 - Door leaves shall have a minimum thickness of 44 mm.
13. The hinges may only be fitted in the manner described in this certificate and subject to any limitations on the inclusion of hinges specified for the door leaf. This approval is applicable only to the specified hinges used with door assemblies of proven fire resistance (as defined in BS EN 1634-1 or BS 476: Part 22: 1987) and when using appropriate intumescent protection.
14. Regard should be paid to the maximum door mass permitted to be used with the hinge (see classifications).
15. For ITT timber and mineral-based doorsets the hinges shall only be fitted using the fixings supplied by the hinge manufacturer.
16. The ITT doorsets shall be installed in accordance with BS 8214.
17. 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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18. The following table show acceptable doorset types and fire resistance periods for Grade 11 hinges only:

Class	Approved Door Type				
	IMM	MM	ITT	ITM	ITC
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



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19. The following table show acceptable doorset types and fire resistance periods for Grade 14 hinges only:

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

Key:

- ✓ - approved
- x - Not approved





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20. Doors are classified as the following types:

Code ITT - 20 minute to 120 minute doorsets containing intumescent seals and consisting of timber faced and edged leaves with timber, cellulosic or mineral cores, hung in timber-based frames.

Code ITM - 20 minute to 120 minute doorsets containing intumescent seals and consisting of timber faced and edged leaves with timber, cellulosic or mineral cores, hung in metal frames.

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

Code MM - 20 to 240 minute doorsets consisting of uninsulated or insulated predominantly steel leaves, hung in steel frames without intumescent seals.

Code IMM - 20 to 240 minute doorsets consisting of uninsulated or insulated predominantly steel leaves, hung in steel frames with intumescent seals.

Scope of Approval:

- The hinges may not be fitted to timber doorsets without perimeter intumescent fire seals within the frame rebate or edge of the door leaf.
- Grade 14 hinges are restricted to ITT30 and 60 doorsets only.
- Where graphite based intumescent sheet material is to be used in lieu of the mono ammonium phosphate tested, the proposed graphite-based intumescent sheet material, shall have suitable test evidence in the required thickness or less, with timber/mineral-based doorset of the required classification period, in with steel hinges of a minimum size of 100 mm x 75 mm.

Classification codes

The above approval provides the following classifications:

VLHL243R, VLHR243R, VLHL243, VLHR243, VSLHL43R, VSLHR43R, VSLHL43 & VSLHR43:

3	7	4	1	1	4	0	11
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Classification codes – Cont'd:

VLH-L243-14-R, VLH-R243-14-R, VLH-L243-14 & VLH-R243-14:

4	7	7	1	1	4	0	14
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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).

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