



CERTIFICATE OF APPROVAL

No CF 547

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

FRELAN HARDWARE LTD

Unit 10 Mitcham Industrial Estate, Streatham Road,
Mitcham, Surrey, CR4 2AP

Tel: 0208 648 1500 Fax: 0208 648 1626

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
JEDO Series of steel 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: 5th June 2007
Revised: 9th April 2020
Valid to: 23rd November 2022





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FRELAN HARDWARE LTD

JEDO Series of Hinges

1. This approval relates to the use of JEDO Series of hinges comprising stainless steel, single axis Grade 13 and 14 hinges in contributing to the fire resistance performance of timber based doorsets as detailed below:

Reference	Description	Grade
JEDO: J9500	102 mm x 76 mm x 3 mm, Ball Bearing Stainless Steel Hinge	13
JEDO: J9500R	102 mm x 76 mm x 3 mm, Ball Bearing Stainless Steel Hinge (Radiused)	13
JEDO: J9507	102 mm x 76 mm x 3 mm, Ball Bearing 316 Stainless Steel Hinge	13
JEDO: J9603	102 mm x 76 mm x 3 mm, Polymer Bearing Stainless Steel Hinge (3 knuckle)	13
JEDO: J9604	102 mm x 102 mm x 3 mm, Polymer Bearing Stainless Steel Hinge (5 knuckle)	13
JEDO: J9606	102 mm x 76 mm x 3 mm, Polymer Bearing Stainless Steel Hinge (5 knuckle)	13
JEDO: J9633	102 mm x 76 mm x 3 mm, Polymer Bearing Stainless Steel Hinge (Radiused - 3 knuckle)	13
JEDO: J2020	102 mm x 76 mm x 3 mm, Stainless Steel Concealed Butt Hinge	13
JEDO: J2050	102 mm x 76 mm x 3 mm, Sintered Washered Stainless Steel Hinge	13
JEDO: J9400	102 mm x 76 mm x 3 mm, Stainless Steel Concealed Butt Hinge	14

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:-

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).

4. The hinge is 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) On-going audit testing in accordance with TS24 requirements
5. This approval relates to the use of the above single axis hinges in contributing to the fire resistance performance of timber-based doorsets, as defined in BS EN 1634-1 or BS 476: Part 22: 1987.



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6. 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. 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.
 - b. FD60, E60 and EI60 applications (Code ITT) – Door leaves shall not less than 54 mm thick doors. 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
 - ii. Additionally a minimum of 15 mm of perimeter intumescent shall by-pass the hinge.
7. The 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.
8. Hinges shall only be fitted using the fixings supplied by the hinge manufacturer which shall be a minimum of 31 mm long x 4.8 mm dia. Regard should be paid to the maximum door mass permitted to be used with the hinge (see classifications).
9. 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 30 or 60 minutes fire resistance (as relevant) when tested, or subsequently assessed to BS 476: Part 22: 1987 or EN 1634-1.
10. The doorset shall be installed in accordance with BS 8214.
11. The approval relates to on-going 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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Matrix of acceptable doorsets for hinge types: JEDO: J9500, JEDO: J2050, JEDO: J2020 and JEDO: J7500

12. The following table show acceptable doorset types and fire resistance periods:

Class	Approved Door Type				
	IMM	MM	ITT	ITM	ITC
FD20	x	x	x	x	x
FD30	x	x	✓	x	x
FD60	x	x	✓	x	x
FD120	x	x	x	x	x
FD240	x	x	x	x	x
E 20	x	x	x	x	x
EI 20	x	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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13. 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:

JEDO: J9500 & J9500R Ball Bearing Stainless Steel Hinge - Maximum leaf weight 120 kg:

4	7	6	1	1	4	0	13
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JEDO: J9507 Ball Bearing 316 Stainless Steel Hinge - Maximum leaf weight 120 kg:

4	7	6	1	1	4	0	13
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JEDO: J9603, J9604 & J9605 Polymer Bearing Stainless Steel Hinge – Maximum leaf weight of 120 kg:

4	7	6	1	1	4	0	13
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Classification codes – Cont'd

JEDO: J9633 Polymer Bearing Stainless Steel Hinge – Maximum leaf weight of 120 kg:

4	7	6	1	1	4	0	13
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JEDO: J2020 Concealed Bearing Stainless Steel Butt Hinge – Maximum leaf weight of 120 kg:

4	7	6	1	1	4	0	13
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JEDO: J2050 Sintered Washered Stainless Steel Hinge – Maximum leaf weight of 120 kg:

4	7	6	1	1	4	0	13
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JEDO: J9400 Concealed Bearing Stainless Steel Butt Hinge – Maximum leaf weight of 160 kg:

4	7	7	1	1	4	0	14
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Scope of Approval:

- The hinges may not be fitted to timber doorsets without perimeter intumescent fire seals to the frame rebate or door edge.
- 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 conjunction with steel hinges of a minimum blade size of 100 mm x 30 mm.

Further Information

Further information regarding the details contained in this certificate may be obtained from Frelan Hardware Limited (Tel: 0208 648 1500).

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

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