
CERTIFICATE OF APPROVAL

No CF 5580

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

HAEFELE GMBH & CO KG

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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

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: 5th January 2018
Next audit test due: 05/01/2019
Frequency: Annually
Valid to: 4th January 2023

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Haefele Stainless Steel Ball Bearing Hinges

1. This approval relates to the use of Haefele Stainless Steel Ball Bearing grade 11 and 13 single axis hinges. This approval relates to the following specific hinges:

Reference	Dimension	Description	Corners
DHB 1212	76 x 76 x 3 mm	304 stainless steel with 2 ball bearings	Square
DHB 2122	102 x 76 x 2.5 mm	201 stainless steel with 2 ball bearings	Square
DHB 2222	102 x 76 x 2.5 mm	304 stainless steel with 2 ball bearings	Square
DHB 3122	102 x 76 x 3 mm	201 stainless steel with 2 ball bearings	Square
DHB 3222	102 x 76 x 3 mm	304 stainless steel with 2 ball bearings	Square
DHB 3221	102 x 76 x 3 mm	304 stainless steel with 2 ball bearings	Round
DHB 3322	102 x 76 x 3 mm	316 stainless steel with 2 ball bearings	Square
DHB 4122	102 x 102 x 3 mm	201 stainless steel with 2 ball bearings	Square
DHB 4121	102 x 102 x 3 mm	201 stainless steel with 2 ball bearings	Round
DHB 4222	102 x 102 x 3 mm	304 stainless steel with 2 ball bearings	Square
DHB 5222	102 x 89 x 3 mm	304 stainless steel with 2 ball bearings	Square
DHB 6222	114 x 102 x 3 mm	304 stainless steel with 2 ball bearings	Square
DHB 7222	114 x 102 x 3.5 mm	304 stainless steel with 2 ball bearings	Square
DHB 8222	127 x 89 x 3 mm	304 stainless steel with 2 ball bearings	Square
DHB 9222	127 x 102 x 3 mm	304 stainless steel with 2 ball bearings	Square

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 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).

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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 to ISO 9001: 2008.
 - iv) Inspection and surveillance of factory production control
 - v) On-going audit testing in accordance with TS24 requirements
6. 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.
7. The hinges should only be used with door assemblies of proven fire resistance (as defined in BS EN 1634-1 or BS 476: Part 22: 1987), the critical aspects of the doorset construction are considered to be the material of the door frame, the leaf to frame clearance gaps and the lipping material. Attention should be paid to these details and these should not be amended from that previously fire tested. Where this information is not known the following minimum specification will be followed:
- a. 30 and 60 minute timber and mineral-based assemblies (ITT):
 - i) Door frame density - 460 kg/m³ (30 minutes), 640 kg/m³ (60 minutes)
 - ii) Door leaves shall have a minimum thickness of 44 mm for 30 minute applications and 54 mm for 60 minute applications.
 - iii) Lipping density - 640 kg/m³.
 - b. Steel-based assemblies (MM/IMM)
 - i) Door leaves shall have a minimum thickness of 44 mm for up to 240 minute applications.

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8. For 90 minute and 120 minute timber and mineral-based assemblies (ITT), Haefele hinges (excluding the Grade 11 76 x 76 x 3 mm hinge) 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 'Interdens' 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 Haefele 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	+/-20% of tested hinge
Thickness	+/-15% of tested hinge
Knuckle	
Diameter	Minimum 14 mm
Fixings	
Quantity	Maximum 4No. fixings tested
Size	5.1 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 Haefele 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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9. When fitted to insulated timber or mineral composite door assemblies, the required additional intumescent protection will be as follows:
- i) The required protection for 60 minute ITT applications shall be 2 mm thickness of mono ammonium phosphate or graphite-based intumescent material behind both blades.
 - ii) For 60 minute ITT applications only, 7.5 mm of perimeter intumescent fire seal within the edge of the door or frame rebate is required to by-pass the hinges.
 - iii) The required intumescent protection for 90 and 120 minute ITT applications 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.
 - iv) For 90 and 120 minute ITT applications only, a minimum of 7.5 mm of perimeter intumescent fire seal within the edge of the door or frame rebate is required to by-pass the hinges. , however, this amount of perimeter intumescent fire seal by-passing the hinges shall be increased as required based on the chosen doorset manufacturers test data.

Failure to install the protection will invalidate this certificate

10. 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.
11. Hinges shall only be fitted using the fixings supplied by the hinge manufacturer. Regard should be paid to the maximum door mass permitted to be used with the hinge (see classifications).
12. The ITT doorsets shall be installed in accordance with BS 8214.
13. The approval relates to ongoing production. The 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
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
- ✓* - Excludes the 76 x 76 x 3 mm hinge.

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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 approval provides the following classifications which are specific to all the model variants:

76 x 76 x 3 mm hinge only:

3	7	4	1	1	4	0	11
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All other hinges:

4	7	6	1	1	4	0	13
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Further Information

Further information regarding the details contained in this certificate may be obtained from HAEFELE GMBH & CO KG (Tel: +49 7452 950).

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