# 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

**Postfach 12 37, D-72192 Nagold, Germany**
**Tel: +49 7452 950**

**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 | TECHNICAL SCHEDULE |
|---|---|
| **Stainless Steel Ball Bearing Hinges** | **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 January 2018
Revised: 25th June 2020
Valid to: 4th January 2023

# CERTIFICATE No CF 5580
# HAEFELE GMBH & CO KG

## 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 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 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).**



Issued: 5th January 2018
Revised: 25th June 2020
Valid to: 4th January 2023

# CERTIFICATE No CF 5580
# HAEFELE GMBH & CO KG

## Haefele Stainless Steel Ball Bearing Hinges

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/m$^3$ (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/m$^3$.

   b. Steel-based assemblies (MM/IMM)

      i) Door leaves shall have a minimum thickness of 44 mm for up to 240 minute applications.



Issued: 5th January 2018
Revised: 25th June 2020
Valid to: 4th January 2023

# CERTIFICATE No CF 5580
# HAEFELE GMBH & CO KG

## Haefele Stainless Steel Ball Bearing Hinges

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).*



Issued: 5th January 2018
Revised: 25th June 2020
Valid to: 4th January 2023

# CERTIFICATE No CF 5580
# HAEFELE GMBH & CO KG

## Haefele Stainless Steel Ball Bearing Hinges

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.



Issued: 5th January 2018
Revised: 25th June 2020
Valid to: 4th January 2023

# CERTIFICATE No CF 5580
# HAEFELE GMBH & CO KG

## Haefele Stainless Steel Ball Bearing Hinges

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

| | Approved Door Type | | | | |
|---|---|---|---|---|---|
| **Class** | **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.



Issued: 5th January 2018
Revised: 25th June 2020
Valid to: 4th January 2023

# CERTIFICATE No CF 5580
# HAEFELE GMBH & CO KG

## Haefele Stainless Steel Ball Bearing Hinges

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 |

All other hinges:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4 | 7 | 6 | 1 | 1 | 4 | 0 | 13 |

**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).



Issued: 5th January 2018
Revised: 25th June 2020
Valid to: 4th January 2023