



CERTIFICATE OF APPROVAL

No CF 5776

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

CARLISLE BRASS LIMITED

Parkhouse Road, Carlisle, Cumbria, CA3 0JU
United Kingdom
TEL: 01228 511770

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 Warringtonfire Testing and Certification Limited

Paul Duggan
Certification Manager



Issued:	16 th September 2019
Expired:	30 th April 2023
Extension until:	31 st July 2023
Reissued:	4 th July 2023
Valid to:	29 th April 2028





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1. 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.
2. This approval relates to the use of Stainless Steel Ball Bearing Hinges as follows:

Ref.	Blade			Knuckle	
	Height mm	width mm	thick mm	Diameter	Length
HIN1433P	102	76	3	14	102
HIN1443P	102	102	3	14	104

The Carlisle Brass hinges are single axis, steel Class 13 ball-bearing hinges. The hinges are approved with square corners and radiused corners, and manufactured in either 201 or 304 grades of stainless steel.

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 of 30 or 60 minutes (Code ITT).
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, as defined in BS EN 1634-1 or BS 476: Part 22: 1987.
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) 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 with hinges of a similar size.



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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. The following minimum specification shall be followed, unless the chosen doorset has evidence with hinges of a similar size/specification.
- 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.
8. When fitted to insulated timber or mineral composite door assemblies, the required additional intumescent protection shall be as follows:
- i) The required protection for 30 minute ITT applications will be 1 mm thick Interdens mono ammonium phosphate based or graphite based intumescent sheet material behind both blades.
- Or alternatively
- The hinges may be fitted with the 0.8 mm intercalated graphite kits referenced as INT1433 (for HIN1433P) or INT1443 (for HIN1443P) for 30 minute ITT applications.
- ii) The required protection for 60 minute ITT applications will be 2 mm thick Interdens mono ammonium phosphate based or graphite based intumescent sheet material behind both blades.
- Or alternatively
- The following hinges may be fitted with the 0.8 mm intercalated graphite kits referenced as INT1433 for 60 minute ITT applications: HIN1433P. Additionally, a minimum of 14 mm width of perimeter intumescent fire seal by-passing the hinge blades on either the edge of the door leaf, or within the frame rebate.

Note: Failure to install intumescent protection identified above will invalidate this certificate



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9. 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.
10. All door hardware is subject to the acceptance by the chosen door assembly supplier's tested, assessed or certificated scope, which generally identifies the types of hardware approved; and the required specification/design based on the key materials/ maximum size (e.g. hinge flap, knuckle diameter, etc.), and the application of any additional intumescent protection.

On this basis approval should be sought from the specific door assembly supplier to ensure compliance based on this assessed/certificated scope.

11. Regard should be paid to the maximum door mass permitted to be used with the hinge (see classifications).
12. For ITT timber and mineral-based doorsets the hinges shall only be fitted using the fixings supplied by the hinge manufacturer.
13. The doorset shall be installed in accordance with BS 8214.
14. 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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15. The following table show acceptable doorset types and fire resistance periods:

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

Key:



- approved



- Not approved

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16. 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 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.
- 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, with timber/mineral-based doorset of the required classification period.
- Where 0.8 mm intercalated graphite material is used, the INT1433 or INT1443 intercalated graphite kits shall be utilised.

EN1935 Classification codes

The approval provides the following classifications for all hinges:

Category of duty	Number of test cycles	Test door mass	Fire resistance	Safety	Corrosion resistance	Security	Hinge grade
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 Carlisle Brass Limited (Tel: 01228 511770).

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

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