
CERTIFICATE OF APPROVAL

No CF 369

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

HOPPE (UK) LIMITED

**Gailey Park Industrial Estate, Gravelly Way, Standeford,
Wolverhampton, WV10 7GW**

Tel: 01902 484407 Fax: 01902 484457

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

**ARRONE Range of Stainless
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 Exova (UK) Limited trading as
Warrington Certification**



**Paul Duggan
Certification Manager**



Issued: 9th October 2006
Revised: 15th December 2017
Valid to: 26th October 2021

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ARRONE Range of Ball Bearing Stainless Steel Hinges

1. This approval relates to the use of Hoppe ARRONE series AR7070, AR7072, AR7074, AR7076, AR8180, AR8182, AR8184, AR8185, AR8186, AR8187, AR8188, AR8189, AR8680, AR8682, AR9290, AR9292, AR9294, AR9296 Stainless Steel, single axis, butt hinges with square or radius edges, (AR8186, AR8286, AR9296 and AR7076 with dog bolts).
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 for periods of *30 minutes, 60 minutes, **90 minutes and **120 minutes integrity (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).

*Only those hinge models specifically detailed later are approved for use with 30 minutes ITT doorsets.
**Only those hinge models specifically detailed later are approved for use with 90 minutes and 120 minutes ITT doorsets.
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 HOPPE ARRONE series of hinges comprise a range of stainless steel, single axis hinges, which may be for use on various classes of doorsets. The hinges are a minimum of Class 13 in accordance with BS EN 1935.

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7. This certification relates to the following variants of ARRONE series hinges:

Hinge	Maximum Leaf Weight
Hoppe ARRONE Series: AR7070, AR7072, AR7074, AR7076, AR8180, AR8182, AR8184, AR8185, AR8186, AR8187, AR8188, AR8189, AR8680, AR8682, AR9290, AR9292, AR9294, AR9296	120 kg

*Only those hinge models specifically detailed later are approved for use with 30 minutes ITT doorsets.

**Only those hinge models specifically detailed later are approved for use with 90 minutes and 120 minutes ITT doorsets.

8. This approval relates to the above stainless steel hinges incorporating the following range of finishes: polished stainless steel, PVD (stainless brass) and satin stainless steel. The hinges are approved in 201, 304 and 316 grade stainless steel.
9. This approval only relates to the Hoppe ARRONE series models referenced AR7070, AR7072, AR7076, AR8180, AR8182, AR8186, AR8187, AR8188, AR8189, AR9290, AR9292 and AR9296 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 (Code ITT) not less than 44 mm thick. The door frame shall consist of timber with a minimum density of 450 kg/m³ (with leaf to frame gaps less than 3mm), for 30 minute applications.
10. This approval relates to the hinges Hoppe ARRONE series 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 (Code ITT) not less than 54 mm thick. The door frame shall consist of timber with a minimum density of 650 kg/m³ (with leaf to frame gaps less than 3mm), for 60 minute applications.
11. This approval relates to the hinges Hoppe ARRONE series models referenced AR8180, 8680, AR8182, AR8187 & AR8188 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 (Code ITT) not less than 57 mm thick. The door frame shall be hardwood, with a minimum density of 650 kg/m³. Alternatively the door frame may be mineral cored construction, (with leaf to frame gaps less than 3mm), for 90 minute applications.



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12. This approval relates to the hinges Hoppe ARRONE series models referenced AR8180, 8680, AR8182, AR8187 & AR8188 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 (Code ITT) not less than 57 mm thick. The door frame shall be mineral cored construction. Alternatively, the door frame for the AR8680 only may consist of hardwood, having a minimum density of 650 kg/m³ (with leaf to frame gaps less than 3mm), for 120 minute applications.
13. This approval also relates to the above hinges used with latched or unlatched single-leaf or double-leaf door assemblies consisting of metallic faced and edged leaves hung within metallic frames (Codes MM and IMM) not less than 44 mm thick for up to 240 minute applications.
14. When fitted to insulated timber or mineral composite door assemblies (Code ITT), the required additional intumescent protection will be as follows:
- The required protection for 30 ITT applications will be 1 mm thickness of mono ammonium phosphate or graphite-based intumescent sheet material behind both blades.
 - The required protection for 60, 90 and 120 minute ITT applications will be 2 mm thickness of mono ammonium phosphate or graphite-based intumescent sheet material behind both blades.

Failure to install the protection will invalidate this certificate

15. The above hinges may only be fitted to previously tested door assemblies when fitted in the manner described in this certificate and when particular aspects of the door assembly are maintained.
16. 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).
17. 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, 60 90 or 120 minutes (timber based) or up to 240 minutes (metallic based) fire resistance as required when tested, or subsequently assessed to BS 476: Part 22: 1987 or BS EN 1634-1. In either case regard should be paid to the maximum door mass permitted to be used with the hinge (see classification).

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18. Timber doorsets shall be installed in accordance with BS 8214.
19. 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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20. 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

Notes:

- Only the AR7070, AR7072, AR7076, AR8180, AR8182, AR8186, AR8187, AR8188, AR8189, AR9290, AR9292 and AR9296 models are approved for use with 30 minute ITT doorsets.
- Only the AR8180, 8680, AR8182, AR8187 & AR8188 models are approved for use with 90 minute and 120 minute ITT doorsets.



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21. 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.

Scope of Approval:

- All applications apply to glazed and unglazed doorsets.
- The door frame of ITT doorsets shall consist of timber with a minimum density of 450 kg/m³ (with leaf to frame gaps less than 3mm) for 30 minute applications.
- The door frame of ITT doorsets shall consist of hardwood timber with a minimum density of 650 kg/m³ (with leaf to frame gaps less than 3mm) for 60 minute applications.
- The door frame of ITT doorsets shall consist of hardwood, having minimum dimensions of 38 mm thick by 90 mm deep with a planted hardwood doorstop of minimum dimensions 20 mm wide by 12 mm thick and a minimum density of 650 kg/m³. Alternatively the door frame may be mineral cored construction having minimum dimensions of 43 mm thick by 94 mm deep with the addition of minimum 4 mm thick hardwood facings to all sides and incorporating a planted hardwood doorstop of minimum dimensions 20 mm wide by 12 mm thick and a minimum density of 650 kg/m³ (with leaf to frame gaps less than 3mm) for 90 minute applications.

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Scope of Approval – Cont'd:

- The door frame of ITT doorsets shall be mineral cored construction having minimum dimensions of 43 mm thick by 94 mm deep with the addition of minimum 4 mm thick hardwood facings to all sides and incorporating a planted hardwood doorstop of minimum dimensions 20 mm wide by 12 mm thick and a minimum density of 650 kg/m³. Alternatively, for the AR8680 only, the door frame may be timber or mineral cored construction (as above). Timber door frames shall be hardwood, having minimum dimensions of 38 mm thick by 90 mm deep with a planted hardwood doorstop of minimum dimensions 20 mm wide by 12 mm thick and a minimum density of 650 kg/m³ (with leaf to frame gaps less than 3mm), for 120 minute applications.

Classification codes

The above approval provides the following classifications:

ARRONE Series Hinges AR7070, AR7072, AR7074, AR8180, AR8182, AR8184, AR8185, AR8187, AR8188, AR8189, AR8680, AR8682, AR9290, AR9292, AR9294 (no dog bolts) – Maximum leaf weight 120 kg

4	7	6	1	1	4	0	13
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ARRONE SERIES HINGES AR8186, AR9296 and AR7076 (dog bolts) – Maximum leaf weight 120 kg

4	7	6	1	1	4	1	13
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Further Information

Further information regarding the details contained in this certificate may be obtained from Hoppe (UK) Ltd (Tel: 01902 484407).

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