
CERTIFICATE OF APPROVAL

No CF 769

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

NICO MANUFACTURING LIMITED

109 Oxford Road, Clacton on Sea, Essex. CO15 3TJ

Tel: 01255 422333 Fax: 01255 432909

Have been assessed against the requirements of the Technical Schedule(s)
denoted below and are approved for use subject to the conditions
appended hereto:

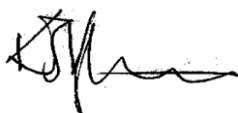
CERTIFIED PRODUCT

Nico High-Performance
Architectural 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



Sir Ken Knight
Chairman
Impartiality Committee



Paul Duggan
Certification Manager



Issued: 5th August 2010
Revised: 26th August 2016
Valid to: 1st July 2020

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Nico Manufacturing Limited High-Performance Architectural Hinges

1. This approval relates to the use of Nico high-performance mild steel and stainless steel single axis hinges in contributing to the fire resistance performance of timber based doorsets, as defined by EN 1634-1 or BS 476: Part 22, for periods of 30 minutes and/or 60 minutes integrity.
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. 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
4. The Nico high-performance hinges are mild steel or stainless steel, single axis butt hinges or lift off hinges of various classes from 7 up to 13. All models may have radiused or square corners and various types of surface finish. The model references for both 4000 and 5000 series models are shown in the tables below. The references of the specific variants of each hinge model are given with their individual classification codes later in this certificate.

| 4000 Series Hinges (Butt) | | | | | |
|-----------------------------------|------|------|-------|-------------------|-------|
| 4510 | 4513 | 4515 | 4535 | 4542 | |
| 4000 Series Hinges (Lift-off) | | | | | |
| 4710 | 4715 | 4717 | 4718 | 4720 | 4722 |
| 4000 Series Hinges (LoadPro Butt) | | | | | |
| 4815 | 4817 | | | | |
| 5000 Series Hinges (Ball Bearing) | | | | | |
| 5305 | 5315 | 5320 | 5325* | 5335 [§] | 5345* |

* ITT60 only

[§] requires additional intumescent behind the hinge blades for 30 minutes

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5. 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 intumescent material behind both blades, except the 5335 which shall be bedded on 2 mm of mono ammonium phosphate intumescent 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. The 4000 series of hinges must be bedded on a 1 mm thickness of mono ammonium phosphate intumescent material behind both blades, with a minimum of 5 mm of perimeter intumescent by-passing the hinge blades, or 2 mm thickness of mono ammonium phosphate intumescent material behind both blades (no requirement for perimeter intumescent to by-pass).
 - ii. The 5000 series of hinges must be bedded on a 2 mm thickness of mono ammonium phosphate intumescent material behind both blades (no requirement for perimeter intumescent to by-pass).
6. The above 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.
7. Hinges shall only be fitted using the fixings supplied by the hinge manufacturer.
8. 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 a 30 or 60 minutes fire resistance performance when tested, or subsequently assessed to BS 476: Part 22: 1987 or EN 1634-1. In either case, regard should be paid to the maximum door mass permitted to be used with the hinge (see classifications).
9. The doorset shall be installed in accordance with BS 8214.
10. 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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11. The following table show acceptable doorset types and fire resistance periods:

| Class | Approved Door Type | | | | | |
|--------|--------------------|----|----|-----|-----|-----|
| | IMM | MM | TT | ITT | ITM | ITC |
| FD20 | x | x | x | ✓* | x | x |
| FD30 | x | x | x | ✓* | x | x |
| FD60 | x | x | x | ✓ | x | x |
| FD120 | x | x | x | x | x | x |
| FD240 | x | 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 | x |
| EI 30 | x | x | x | ✓* | x | x |
| E 60 | x | x | x | ✓ | x | x |
| EI 60 | x | x | x | ✓ | x | x |
| E 90 | x | x | x | x | x | x |
| EI 90 | x | x | x | x | x | x |
| E 120 | x | x | x | x | x | x |
| EI 120 | x | x | x | x | x | x |
| E 240 | x | x | x | x | x | x |
| EI 240 | x | x | x | x | x | x |

* Excludes 5325 and 5345.

Key:

- ✓ - approved
- x - Not approved

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12. 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 TT - 20 minute doorsets that consist of non-metallic leaves in timber frames that do not 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.
- For 30 minutes all hinges must be bedded onto a 1 mm thickness of mono ammonium phosphate intumescent material behind both blades, except the 5335 which shall be bedded on 2 mm of mono ammonium phosphate intumescent material behind both blades.
- For 60 minutes the 4000 series of hinges must be bedded on a 1 mm thickness of mono ammonium phosphate intumescent material behind both blades, with a minimum of 5 mm of perimeter intumescent by-passing the hinge blades, or 2 mm thickness of mono ammonium phosphate intumescent material behind both blades (no requirement for perimeter intumescent to by-pass).
- For 60 minutes the 5000 series of hinges must be bedded on a 2 mm thickness of mono ammonium phosphate intumescent material behind both blades (no requirement for perimeter intumescent to by-pass).

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Scope of Approval – Cont'd:

- 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).
- 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).

Classification codes

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

Hinge models: 4535, 4542 and 4515 – EB, NP & FB finish

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2 | 7 | 2 | 1 | 1 | 1 | 0 | 7 |
|---|---|---|---|---|---|---|---|

Hinge models: 4535, 4542 and 4515 – SN and ZP finish

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2 | 7 | 2 | 1 | 1 | 3 | 0 | 7 |
|---|---|---|---|---|---|---|---|

Hinge models: 4535, 4542 and 4515 – C, CH, PB, S5 and ZY finish

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2 | 7 | 2 | 1 | 1 | 4 | 0 | 7 |
|---|---|---|---|---|---|---|---|

Hinge models: 4513 - EB & NP finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 2 | 7 | 3 | 1 | 1 | 1 | 0 | 10 |
|---|---|---|---|---|---|---|----|

Hinge models: 4513 - SN and ZP finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 2 | 7 | 3 | 1 | 1 | 3 | 0 | 10 |
|---|---|---|---|---|---|---|----|

Hinge models: 4513 - C, CH, PB, S5 and ZY finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 2 | 7 | 3 | 1 | 1 | 4 | 0 | 10 |
|---|---|---|---|---|---|---|----|

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Classification codes (continued)

Hinge models: 4710 – EB & NP finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 2 | 7 | 3 | 1 | 1 | 1 | 0 | 10 |
|---|---|---|---|---|---|---|----|

Hinge models: 4710 - SN and ZP finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 2 | 7 | 3 | 1 | 1 | 3 | 0 | 10 |
|---|---|---|---|---|---|---|----|

Hinge models: 4710 - C, CH, PB, S5, SS-P, SS-S and ZY finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 2 | 7 | 3 | 1 | 1 | 4 | 0 | 10 |
|---|---|---|---|---|---|---|----|

Hinge models: 4715 - EB & NP finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 3 | 7 | 4 | 1 | 1 | 1 | 0 | 11 |
|---|---|---|---|---|---|---|----|

Hinge models: 4715 - SN and ZP finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 3 | 7 | 4 | 1 | 1 | 3 | 0 | 11 |
|---|---|---|---|---|---|---|----|

Hinge models: 4715 - C, CH, PB, S5, SS-P, SS-S and ZY finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 3 | 7 | 4 | 1 | 1 | 4 | 0 | 11 |
|---|---|---|---|---|---|---|----|

Hinge models: 4717 & 4718 - EB & NP finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 4 | 7 | 5 | 1 | 1 | 1 | 0 | 12 |
|---|---|---|---|---|---|---|----|

Hinge models: 4717 & 4718 - SN and ZP finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 4 | 7 | 5 | 1 | 1 | 3 | 0 | 12 |
|---|---|---|---|---|---|---|----|

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Classification codes (continued)

Hinge models: 4717 & 4718 - C, CH, PB, S5, SS-P, SS-S and ZY finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 4 | 7 | 5 | 1 | 1 | 4 | 0 | 12 |
|---|---|---|---|---|---|---|----|

Hinge models: 4720 & 4722 - EB & NP finish

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

Hinge models: 4720 & 4722 - SN and ZP finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 4 | 7 | 6 | 1 | 1 | 3 | 0 | 13 |
|---|---|---|---|---|---|---|----|

Hinge models: 4720 & 4722 - C, CH, PB, S5, SS-P, SS-S and ZY finish

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

Hinge models: 4815 - EB & NP finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 4 | 7 | 5 | 1 | 1 | 1 | 0 | 12 |
|---|---|---|---|---|---|---|----|

Hinge models: 4815 - SN and ZP finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 4 | 7 | 5 | 1 | 1 | 3 | 0 | 12 |
|---|---|---|---|---|---|---|----|

Hinge models: 4815 - C, CH, PB, S5 and ZY finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 4 | 7 | 5 | 1 | 1 | 4 | 0 | 12 |
|---|---|---|---|---|---|---|----|

Hinge models: 4815 - SS-P and SS-S finish

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

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Classification codes (continued)

Hinge models: 4817 - EB & NP finish

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

Hinge models: 4817 - SN and ZP finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 4 | 7 | 6 | 1 | 1 | 3 | 0 | 13 |
|---|---|---|---|---|---|---|----|

Hinge models: 4817 - C, CH, PB, S5, SS-P, SS-S and ZY finish

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

Hinge models: 5305 – EB, SS-P and SS-S finish

| | | | | | | | |
|---|---|---|---|---|---|---|----|
| 3 | 7 | 4 | 1 | 1 | 4 | 0 | 11 |
|---|---|---|---|---|---|---|----|

Hinge models: 5315, 5320, 5325, 5335 and 5345 – EB, SS-P and SS-S finish

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

Further Information

Further information regarding the details contained in this certificate may be obtained from Nico Manufacturing Limited (Tel: 01255 422333).

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