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## CERTIFICATE OF APPROVAL

### No CF 351

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

## COOKE BROTHERS LTD

Northgate, Aldridge, Walsall, West Midlands, WS9 8TL

Tel: 01922 740001

Fax: 01922 456227

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

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#### CERTIFIED PRODUCT

Cooke Brothers Series of  
hinges:

- 7200 Shrouded Bearing
- 7500 Slimline
- 7700 Concealed Bearing
- 7800 Dual Bearing
- 7900 Loadmaster

#### 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: 15<sup>th</sup> September 2011  
Reissued: 17<sup>th</sup> September 2019  
Test Audit Frequency: Annually  
Valid to: 16<sup>th</sup> September 2024



## CERTIFICATE No CF 351 COOKE BROTHERS LTD

### Cooke Brothers Stainless Steel and Mild Steel Hinges

1. This approval relates to the use of the following specific Cooke Brothers steel, single axis hinges:

Ref	Range	Type	Security	Size (mm)	Material	Grade			
7230	Shrouded Bearing	Butt		102 x 76 x 2.5	Mild steel	12			
					Stainless steel	13			
7235					102 x 89 x 2.5	Stainless steel	13		
7240						Stainless steel	13		
7230DB		Dog Bolt	102 x 76 x 2.5	Stainless steel	13				
7530	Slimline	Butt		102 x 76 x 2.5	Stainless steel	13			
7535				102 x 89 x 2.5	Stainless steel	13			
7540				102 x 102 x 2.5	Stainless steel	13			
7730	Concealed Bearing	Butt		102 x 76 x 3	Mild steel	13			
					Stainless steel	14			
7735					102 x 89 x 3	Mild steel	13		
						Stainless steel	14		
7740					102 x 102 x 3	Mild steel	13		
						Stainless steel	14		
7745			114 x 102 x 3	Stainless steel	13				
7729AL	Concealed Bearing	Butt	Anti-Ligature	102 x 70 x 3	Stainless steel	14			
7730AL				102 x 76 x 3	Stainless steel	14			
7735AL				102 x 89 x 3	Stainless steel	14			
7730DB	Concealed Bearing	Butt	Dog Bolt	102 x 76 x 3	Stainless steel	14			
7735DB				102 x 89 x 3	Stainless steel	14			
7740DB				102 x 102 x 3	Stainless steel	14			
7755	Concealed Bearing	Lift Off		102 x 76 x 3	Mild steel	13			
					Stainless steel	13			
7756				102 x 76 x 3	Mild steel	13			
					Stainless steel	13			
7765	Concealed Bearing	Lift Off		102 x 89 x 3	Mild steel	13			
					Stainless steel	13			
7766							102 x 89 x 3	Mild steel	13
							Stainless steel	13	
7775	Concealed Bearing	Lift Off		102 x 102 x 3	Mild steel	13			
					Stainless steel	13			

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Ref	Range	Type	Security	Size (mm)	Material	Grade
7776	Concealed Bearing	Lift Off		102 x 102 x 3	Mild steel	13
					Stainless steel	13
7830	Dual Bearing	Butt		102 x 76 x 3	Stainless Steel	13
7840				102 x 102 x 3	Stainless Steel	13
7845				114 x 102 x 3	Stainless Steel	13
7845DB			Dog Bolt	114 x 102 x 3	Stainless Steel	13
7935	Loadmaster	Butt		102 x 89 x 3	Mild steel	13
				102 x 89 x 3	Stainless steel	14
AR2771	Concealed Bearing	Butt		102 x 76 x 3	Stainless steel	14

Hinges are certificated with both square and radiused corners.

- This certification is provided to the client for its own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.
- 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).**

- 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.
- The hinges are approved on the basis of:
  - Initial type testing to EN1935 and EN 1634-1
  - An appraisal against TS24
  - Certification of quality management system.
  - Inspection and surveillance of factory production control
  - On-going audit testing in accordance with TS24 requirements



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#### Cooke Brothers Stainless Steel and Mild Steel Hinges

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/m<sup>3</sup> (30 minutes), 640 kg/m<sup>3</sup> (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<sup>3</sup>.
  - b. Steel-based assemblies (MM/IMM)
    - i) Door leaves shall have a minimum thickness of 44 mm for up to 240 minute applications.
8. For 90 minute and 120 minute timber and mineral-based assemblies (ITT), Cooke Brothers hinges 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 bypasses the hinge, this detail shall be maintained.
  - iii) The critical dimensions of the Cooke Brothers hinge to be used shall be based on the size of the hinge tested originally by the chosen doorset manufacturer, with the following tolerance:

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### Cooke Brothers Stainless Steel and Mild Steel Hinges

Hinge Specification of <u>Chosen Doorset</u>	
Component/dimension	Tolerance/Rule
<b>Hinge blade</b>	
Width	+0/-5% of tested hinge
Height	+/-20% of tested hinge
Thickness	+/-15% of tested hinge
<b>Knuckle</b>	
Diameter	Minimum 13 mm
<b>Fixings</b>	
Quantity	Maximum 4No. fixings tested
Size	4.5 mm dia. Minimum
Length	Minimum 50 mm long and 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 Cooke Brothers 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).

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 FD30, E30 and EI30 ITT applications will be 1 mm thickness of mono ammonium phosphate or graphite-based intumescent sheet material (see 'Scope of Approval' below) behind both blades.
  - ii) The required protection for FD60 ITT applications will be 1 mm thickness of mono ammonium phosphate or graphite-based intumescent sheet material (see 'Scope of Approval' below) behind both blades.
  - iii) The required protection for E60 and EI60 ITT applications will be 2 mm thickness of mono ammonium phosphate or graphite-based intumescent sheet material (see 'Scope of Approval' below) behind both blades.
  - iv) 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 tested, or graphite based intumescent sheet material (see 'Scope of Approval' below) incorporated beneath each hinge blade, however, this protection shall be increased as required based on the chosen doorset manufacturers test data.

Failure to install the protection will invalidate this certificate



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#### Cooke Brothers Stainless Steel and Mild Steel Hinges

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. Regard should be paid to the maximum door mass permitted to be used with the hinge (see classifications).
12. All fixings shall be a minimum 4.7 mm diameter, and a minimum 32 mm long for ITT doorsets.
13. The ITT doorsets 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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### Cooke Brothers Stainless Steel and Mild Steel Hinges

15. 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

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### Cooke Brothers Stainless Steel and Mild Steel Hinges

16. 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:

- The hinges may not be fitted to timber doorsets without perimeter intumescent fire seals.
- For ITT 20 and 30 applications, a maximum of 42 mm blade width shall be recessed into the door edge/frame rebate.
- 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 or less, with timber/mineral-based doorset of the required classification period, in conjunction with steel hinges of a minimum size of 100 mm x 30 mm.

#### Classification codes

The approval provides the following classifications:

Mild steel 7230SB hinge – Maximum leaf weight 100 kg:

4	7	5	1	1	0	0	12
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### Cooke Brothers Series of Hinges

#### Classification codes (continued)

Stainless steel 7230SB hinge with dog bolt – Maximum leaf weight 120 kg:

4	7	6	1	1	4	1	13
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Stainless steel 7230SB, 7235SB, 7240SB hinges – Maximum leaf weight 120 kg:

4	7	6	1	1	4	0	13
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Stainless steel Slimline 7530, 7535, 7540 – Maximum leaf weight 120 kg:

4	7	6	1	1	4	0	13
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Stainless steel, concealed Bearing, lift off hinges 7755CB, 7756CB, 7765CB & 7766CB – Maximum leaf weight 120 kg:

4	7	6	1	1	4	0	13
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Mild steel, concealed Bearing, lift off hinges 7755CB, 7756CB, 7765CB, 7766CB, 7775CB & 7776CB – Maximum leaf weight 120 kg:

4	7	6	1	1	1	0	13
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Stainless steel, Dual Bearing butt hinges 7830DB, 7840DB, 7845DB – Maximum leaf weight 120 kg:

4	7	6	1	1	4	0	13
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### Cooke Brothers Series of Hinges

#### Classification codes (continued)

Stainless steel Loadmaster 7935 – Maximum leaf weight 160 kg:

4	7	7	1	1	4	0	14
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Mild steel Loadmaster 7935 – Maximum leaf weight 120 kg:

4	7	7	1	1	1	0	13
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Mild steel, Concealed Bearing butt hinges 7730CB, 7735CB, 7740CB – Maximum leaf weight 120 kg:

4	7	6	1	1	1	0	13
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Stainless steel, Concealed Bearing butt hinges 7745CB and 7745CB with dogbolt – Maximum leaf weight 120 kg:

4	7	6	1	1	4	0	13
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Stainless steel, Concealed Bearing butt hinges 7730CB, 7735CB and 7740CB with dog bolt – Maximum leaf weight 160 kg:

4	7	7	1	1	4	1	14
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Stainless steel, Concealed Bearing butt hinges 7729CB, 7730CB & 7735CB Anti-ligature– Maximum leaf weight 160 kg:

4	7	7	1	1	4	0	14
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**Cooke Brothers Series of Hinges**

**Classification codes (continued)**

Stainless steel, Concealed Bearing butt hinges AR2771, 7730CB, 7735CB & 7740CB –  
Maximum leaf weight 160 kg:

<b>4</b>	<b>7</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>14</b>
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**Further information**

Further information regarding the details contained in this data sheet may be obtained from  
Cooke Brothers Ltd (Tel: 01922 740001).

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