



CERTIFICATE OF APPROVAL

No CF 351

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, United Kingdom

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:

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: 15th September 2011
Reissued: 17th February 2025
Valid to: 14th September 2029





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

Ref	Range	Type	Security	Knuckle Size	Size (mm)	Material	Grade	Permitted Use
7230	Shrouded Bearing	High Performance		12	102 x 76 x 2.5	Stainless steel	13	ITT60, IMM/MM120
7235					102 x 89 x 2.5		13	
7240					102 x 102 x 2.5		13	
7230DB			Dog Bolt		102 x 76 x 2.5		13	
7530	Slimline	High Performance Slimline Butt		10	102 x 76 x 2.5	Stainless steel	13	ITT30, IMM/MM120
7535					102 x 89 x 2.5		13	
7540					102 x 102 x 2.5		13	
7730	Concealed Bearing	High Performance		13	102 x 76 x 3	Mild steel	13	ITT30, ITT60, IMM/MM120
						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	High Performance	Anti-Ligature	13	102 x 70 x 3	Stainless steel	14	ITT60, IMM/MM120
7730AL					102 x 76 x 3		14	
7735AL					102 x 89 x 3		14	
7730DB	Concealed Bearing	High Performance	Dog Bolt	13	102 x 76 x 3	Stainless steel	14	ITT30, ITT60, IMM/MM120
7735DB					102 x 89 x 3		14	
7740DB					102 x 102 x 3		14	
7730T2 to T12	Concealed Bearing	Conductor		13	102 x 76 x 3	Mild steel	13	ITT30, ITT60, IMM/MM120
						Stainless steel	14	
7735T2 to T12					102 x 89 x 3	Mild steel	13	
						Stainless steel	14	
7740T2 to T12					102 x 102 x 3	Mild steel	13	
						Stainless steel	14	
7745T2 to T12					114 x 102 x 3	Mild steel	13	
						Stainless steel	13	

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Ref	Range	Type	Security	Knuckle Size	Size (mm)	Material	Grade	Permitted Use				
7755	Concealed Bearing	Lift Off		13	102 x 76 x 3	Mild steel	13	ITT30, IMM/MM120				
						Stainless steel	13					
7756									102 x 76 x 3	Mild steel	13	
										Stainless steel	13	
7765									102 x 89 x 3	Mild steel	13	
										Stainless steel	13	
7766									102 x 89 x 3	Mild steel	13	
										Stainless steel	13	
7775									102 x 102 x 3	Mild steel	13	ITT30, ITT60, IMM/MM120
										Stainless steel	13	
7776									102 x 102 x 3	Mild steel	13	
										Stainless steel	13	
7830	Dual Bearing	High Performance Butt		13	102 x 76 x 3	Stainless Steel	13	ITT30, IMM/MM120				
7840									102 x 102 x 3	13		
7845									114 x 102 x 3	13		
7845DB			Dog Bolt				114 x 102 x 3		13			
7935	Loadmaster	High Performance		16	102 x 89 x 3	Mild steel	13	ITT30, ITT60, IMM/MM120				
					102 x 89 x 3	Stainless steel	14					
7980	Loadmaster	High Performance	Dog Bolt	19	114.3 x 114.3 x 4	Stainless steel	14	ITT60 (57mm thick), IMM/MM120				

Hinges are certificated with both square and radiused corners.

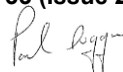
- This certification is provided to the client for its own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose.
- This approval relates to their use with the following door assemblies:-

Code ITT - 20 minute to 60 minute door assemblies door assemblies incorporating intumescent perimeter seals and consisting of timber faced and edged leaves with timber or cellulosic cores, hung in timber or cellulosic frames.

Code IMM / MM - 20 minute to 120 minute door assemblies consisting of uninsulated or insulated predominantly steel leaves, hung in steel frames with or without intumescent seals.
- 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.

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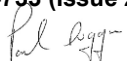
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5. The hinges are approved on the basis of:
- i) Initial type testing to EN1935 and EN 1634-1
 - ii) An appraisal against TS24
 - iii) Certification of quality management system.
 - iv) Inspection and surveillance of factory production control
 - v) 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.
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 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.
 - b. 60 minute timber based assemblies (ITT) for 7980 hinges only:
 - iv) Door frame density - 650 kg/m³ (60 minutes)
 - v) Door leaves shall have a minimum thickness of 57 mm for 60 minute applications.
 - vi) Lipping density - 650 kg/m³.
 - vii) Core density – 750 kg/m³.
 - viii) Facings density - 650 kg/m³.
 - c. Steel-based assemblies (MM/IMM)
 - i) Door leaves shall have a minimum thickness of 44 mm for up to 240 minute applications.

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8. When fitted to insulated timber door assemblies, the required additional intumescent protection will be as follows:

All types of hinges

- i) The required protection for ITT30 applications will be 1 mm thickness of mono ammonium phosphate or 1 mm graphite intumescent sheet material behind both blades (see 'Scope of Approval' below).

Lift Off hinges

- ii) The required protection for ITT60 applications will be 1 mm thickness of mono ammonium phosphate or 1 mm graphite intumescent sheet material behind both blades (see 'Scope of Approval' below).

High Performance hinges

- i) The required protection for ITT60 applications will be 2 mm thickness of mono ammonium phosphate or 2 mm graphite intumescent sheet material behind both blades (see 'Scope of Approval' below).

Conductor hinges

- i) The required protection for ITT60 applications will be 2 mm thickness of mono ammonium phosphate behind both blades (see 'Scope of Approval' below).

Failure to install the protection will invalidate this certificate

9. When fitted to **predominately steel based door assemblies**, there is no requirement for intumescent protection unless this is dictated by the doorset.
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. This approval is applicable only to the specified hinges when mounted in the applications stated and used with door assemblies that are CERTIFIRE approved or have achieved the appropriate fire resistance performance when tested at a laboratory accredited to IS/IEC 17025 (under International Laboratory accreditation Cooperation (ILAC) membership), in accordance with BS 476: Part 22: 1987 and/or BS EN 1634:1.

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15. 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 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.

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

Class	Approved Door Type			
	IMM	MM	ITT	ITM
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
- ✓* - The following hinges, 7230, 7235, 7240, 7230DB, 7729AL and 7980 are not approved for FD30, E30 and EI30 applications.
- ✓~ - The following hinges, 7530, 7535, 7540, 7729AL, 7755, 7756, 7765, 7766, 7830, 7840, 7845 and 7845DB are not approved for FD60, E60 and EI60 applications, the 7980 hinge is limited for use with 57 mm thick doors only.
- ✓! - The following hinges, 7980 are not approved for FD60, E60 and EI60 applications unless the door is 57 mm thick.

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18. Doors are classified as the following types:

Code ITT - 20 minute to 120 minute door assemblies door assemblies incorporating intumescent perimeter seals and consisting of timber faced and edged leaves with timber or cellulosic cores, hung in timber or cellulosic frames.

Code ITM - 20 minute to 120 minute door assemblies door assemblies incorporating intumescent perimeter seals and consisting of timber faced and edged leaves with timber or cellulosic cores, hung in steel 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.
- Where a anti ligature hinge is used on a doorset, the knuckle of the hinge shall not be recessed into the door leaf or door frame, but fitted flush to the door leaf and door frame.
- *As identified in Annex E of EN1935, where doors incorporate closers without backcheck the effective door mass should assumed to be 20% higher than the actual door mass. For back-check closers the effective door mass should assumed to be 75 % higher than the actual door mass.*

Classification codes

The approval provides the following classifications:

Mild steel 7230 hinge – Maximum leaf weight 100 kg:

4	7	5	1	1	0	0	12
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Stainless steel 7230DB hinge with dog bolt – Maximum leaf weight 120 kg:

4	7	6	1	1	4	1	13
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Stainless steel 7230, 7235, 7240 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 7755, 7756, 7765 & 7766 – Maximum leaf weight 120 kg:

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

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

4	7	6	1	1	4	0	13
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Stainless steel Loadmaster 7935 and 7980 – Maximum leaf weight 160 kg:

4	7	7	1	1	4	0	14
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Mild steel Loadmaster 7935 and 7980 – Maximum leaf weight 120 kg:

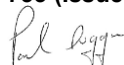
4	7	7	1	1	1	0	13
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Mild steel, Concealed Bearing butt hinges 7730, 7735, 7740 – Maximum leaf weight 120 kg:

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

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4	7	6	1	1	4	0	13
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Stainless steel, Concealed Bearing butt hinges 7730DB, 7735DB and 7740DB 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 7729AL, 7730AL & 7735AL Anti-ligature–
Maximum leaf weight 160 kg:

4	7	7	1	1	4	0	14
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Stainless steel, Concealed Bearing butt hinges 7730, 7735 & 7740 – Maximum leaf weight
160 kg:

4	7	7	1	1	4	0	14
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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).

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