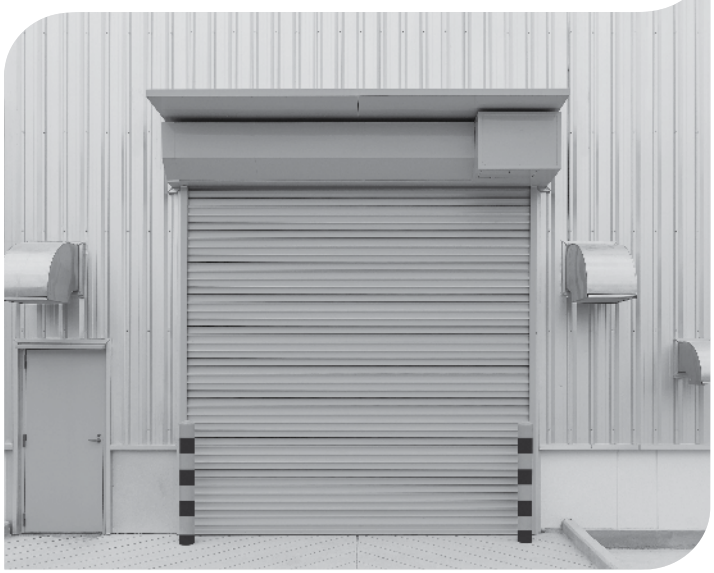
Changes to CE marking of Fire and Smoke Resisting Industrial Doors



Contents

Introduction

CE marking of powered doors, whether fire/smoke resisting or not, has been mandatory under the Machinery Directive since 1995; this remains a constant and will not change.

As of November 2019, there will be significant additional requirements for CE marking both powered and manual fire and smoke resisting doors covered by EN 13241:2003+A2:2016. This is because compliance with the Construction Products Regulation (EU) 305/2011 (CPR) becomes mandatory for both manual and powered fire resisting industrial doors on this date.

Whilst many manufacturers have been CE marking their products under the new rules on a voluntary basis during the co-existence period, the new rule will become mandatory from November 2019.

Scope

This document is supplementary to and should be used in conjunction with DHF TS 012. It covers industrial vehicle doors and shop front shutters covering doorways that have fire/smoke resisting properties. It does not cover:

i. lock or dock gates
ii. lift doors
iii. vehicle doors
iv. armoured doors
v. doors to retain animals
vi. theatre textile curtains
vii. perimeter gates (see DHF TS 011:2018)
viii. traffic barriers (see DHF TS 011:2018)
ix. pedestrian only doors
x. railway crossing traffic barriers

References

Normative standards
The current version of the following standards provides information which is supplementary to the requirements of guidance. Where referenced in this guide, compliance with the relevant elements of these standards is required. The standards listed are available with BS (BSI — UK) and IS (NSAI — Republic of Ireland) prefixes, dependent on the jurisdiction in which the manufacturer operates.

EN 13241:2003+A2:2016
Industrial, commercial, garage doors and gates. Product standard, performance characteristics. Non-fire and/or smoke control characteristics.

EN 16034:2014
Pedestrian doorsets, industrial, commercial, garage doors and openable windows. Product standard, performance characteristics. Fire resisting and/or smoke control characteristics.

EN 1634-1:2014
Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware. Fire resistance tests for doors, shutters and openable windows.

EN 1634-3:2008
Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware. Smoke control test for door and shutter assemblies.

EN 13501-2:2016
Fire classification of construction products and building elements. Classification using data from fire resistance tests, excluding ventilation services.

EN 15269-10:2011
Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies including their elements of building hardware. Fire resistance of steel rolling shutter assemblies.

EN 15269-11:2018
Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware. Part 11. Fire resistance of operable fabric curtains.

EN 15269-7:2009
Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware. Fire resistance for steel sliding doorsets.

EN 14637:2007
Building hardware. Electrically controlled hold-open systems for fire/smoke door assemblies — all door types. Requirements, test methods, application and maintenance.

EN 1155:1997
Building hardware. Electrically powered hold-open devices for swing doors. Requirements and test methods.

Definitions

Declaration of Performance (see annex B.1)
A legally required document declaring a construction product's performance in accordance with the Construction Products Regulation, when supplied. Performance must be declared against a list of essential characteristics specified in the relevant standards harmonised under the regulation, where they exist.

Industrial door
A door primarily intended for vehicular use, but which might also be encountered by persons in industrial, commercial, residential or domestic premises, this includes shop front shutters over pedestrian access areas.

Self-closing
The ability of a fire or smoke resisting door to close fully from any position.

Durability of ability to release
The ability of a fire or smoke resisting door to close fully from any position under all necessary operational conditions e.g. alarm, power cut or fault.

Fire door
A door able to resist fire for a specified period.

1. Requirements

1.1 Design and suitability of the system

Fire and smoke resisting doors must meet the requirements of the appropriate fire test standards but must also be suitable for the type of building, location within the building, use of the building and the nature of users. As local building regulations and rules apply (see Annex A), care must be taken to ensure that not only does the door satisfy the appropriate fire and/or smoke resistance standards but also that it will satisfy local building regulations and other legislation appropriate to the jurisdiction of the installation.

1.2 Machinery Directive 2006/42/EC (MD)

Since 1995, compliance with the Machinery Directive (MD) and related CE marking has been mandatory for all powered doors, including fire and smoke resisting doors. All powered doors must be supplied with a Declaration of Conformity and operation & maintenance manual. Doors supplied to be installed by others must also be supplied with an installation manual. For more details of how to achieve Machinery Directive compliance, please see section 1 & 4 of DHF TS 012.

1.3 Construction Products Regulation EU 305/2011 (CPR)

As of November 2019, compliance with the Construction Products Regulation becomes mandatory for the manufacture and placing on the market of fire and smoke resisting doors within scope of EN 13241:2003 + A2:2016. This new requirement is happening because the voluntary coexistence period for EN 16034:2014 is coming to an end and the scope of EN 13241 was amended in 2016 to include fire and smoke resisting doors.

1.4 Fire and smoke resistance

The door must be able to resist the spread of fire and/or smoke for the period of time specified in the fire risk assessment for the building and relevant legislation.

Fire doors are generally required to be self-closing, and wherever possible kept closed. Where necessary for the operational needs of users and the building, fire/smoke resisting doors may be held open under normal conditions but must be able to close under fire/smoke conditions. The self-closing requirement can be ignored if the door is normally kept locked closed, e.g. service riser and storage cupboard doors. Self-closing means that the door can close from any angle or position in the closing range.

Correct installation and maintenance are vital to enable fire/smoke resisting doors and shutters to perform as they were designed. To achieve this, the manufacturer must supply a comprehensive installation manual (where others will install the door) and an operation and maintenance manual for the client.

1.5 Harmonised European standards

Compliance with the Construction Products Regulation is dependent on the existence of harmonised product standards. The harmonised standards applicable to the fire and smoke resisting doors, within the scope of this guidance, under the Construction Products Regulation are:

i. non-fire and smoke resisting properties – EN 13241:2003 + A2:2016, and

ii. fire resisting properties – EN 16034:2014, tested in accordance with EN 1634-1, and

iii. smoke leakage properties – EN 16034:2014, tested in accordance with EN 1634-3.

Compliance with annex ZA of EN 13241 and EN 16034 is mandatory under the Construction Products Regulation as of November 2019. Details of how to achieve compliance with the elements covered by EN 13241 can be found in sections 1 & 4 of DHF TS 012.

1.6 Factory production control (FPC)

Manufacturers who do not have an ISO 9001 Quality Management System which satisfies the detailed requirements of the standards, will need to have a written Factory Production Control (FPC) system in place. The FPC system will be audited by the product certification body under system 1.

The FPC will need to cover: (i) organisation and competence of personnel; (ii) equipment; (iii) raw materials and components; (iv) production processes; (v) product testing and evaluation; (vi) traceability and marking; (vii) non-conforming products and corrective action.

1.7 Fire and smoke resisting essential characteristics

The fire and smoke resisting essential characteristics listed in annex ZA of EN 16034:2014 must be tested and verified under Assessment and Verification of Constancy of Performance (AVCP) system 1. This will mean employing the services of a product certification body notified (authorised) by the European Commission.

The certification body will:

i. arrange for (or agree to existing) test evidence, and

ii. provide assessment and classification of the results, and

iii. assess and audit the factory production control system.

Some characteristics must be declared (mandatory), others may be declared as no performance determined (NPD), depending on the intended use of the door.

Essential Characteristics Requirements	Clause	Result	Testing
Resistance to fire	4.1	Class – mandatory	Via a notified product certification body
Smoke control	4.2	Class – can be NPD for doors that do not need smoke control	Via a notified product certification body
Ability to release	4.3	Description – can be NPD for doors that do not need to self-close	Via a notified product certification body
Self-closing	4.4	Class – can be NPD for doors that do not need to self-close	Via a notified product certification body
Durability of ability to release	4.5.1	Description – can be NPD, for doors that do not need to self-close at loss of primary and secondary power or under fault conditions	Via a notified product certification body
Durability of self-closing against: – degradation, and – ageing	4.5.2.1 4.5.2.2	Can be NPD for doors that do not need to self-close Class Description	Via a notified product certification body

Information taken from table ZA 1 of EN 16034:2014

The conditions under which a fire/smoke resisting door does not need to self-close are dictated by the building regulations in force in that local jurisdiction — see Annex A.

Any drive unit, safety device or other door hardware intended to be used with the door, must be fitted to the door sample under test or be certified for use with the door by the certification body.

These essential characteristics are in addition to those covered by EN 13241 — see section 4 of DHF TS 012:2019.

1.7.1 Resistance to fire

The ability of the door to resist fire, as tested in accordance with EN 1634-1. Resistance to fire is split into four sub sections:

i. E: integrity — (mandatory)

ii. I_1: insulation — time 180° at any point — can be NPD for doors without insulation properties

iii. I_2: insulation — time to 360° at any point on the frame — can be NPD for doors without insulation properties

iv. W: radiation — can be NPD for doors without radiation protection properties

1.7.2 Smoke control

The ability of the door to resist smoke, as tested in accordance with EN 1634-3. This can be NPD for doors without smoke resisting properties.

1.7.3 Ability to release

The ability of the door to begin closing from the held open position (if applicable), as tested in accordance with EN 1634-1.

1.7.4 Self-closing

The ability of the door to close fully, as tested in accordance with EN 1634-1.

1.7.5 Durability of ability to release

The ability of the door hold-open system to release and allow the door to close due to stored energy (spring) or gravity (direct or via counterweight system) in accordance with EN 14637 for all door types, or EN 1155 for swing doors.

The intention is to ensure that a held open door will close in response to the fire detection system, when there is a lack of power or where there is a fault in the hold open system that could prevent closing when required. This characteristic can be NPD for doors that are not held open or do not need to close when subject to power failure, or under fault conditions.

1.7.6 Durability of self-closing against degradation and ageing

The ability of the door to self-close for a declared number of cycles, as tested in accordance with EN 1634-1.

1.8 Cascaded test evidence (CPR article 36)

Although cascaded fire/smoke type test evidence is allowed for the fire and smoke resisting essential characteristics, it must be verified under system 1 by the notified product certification body.

The system 3 essential characteristics covered by EN 13241 can continue to be verified by micro enterprises under system 4 — see section 4 of DHF TS 012.

1.9 Micro-enterprises (CPR article 37)

As all fire and smoke resistance essential characteristics must be verified under system 1, the micro-enterprise test evidence relaxations allowed by article 37 are not permitted for fire or smoke resistance essential characteristics.

The system 3 essential characteristics covered by EN 13241 can continue to be verified by micro enterprises under system 4 — see section 4 of DHF TS 012.

1.10 Declaration of performance (see annex B.1)

The company or person responsible for compliance must draw up and issue a Declaration of Performance against all applicable essential characteristics stating the notified test laboratory used.

The DoP must list all essential characteristics covered by EN 13241 and EN 16034:2014 in a single document.

1.11 CE mark (see Annex B.2)

From November 2019, new fire and smoke resisting doors covered by EN 13241 and EN 16034:2014 must be CE marked against the relevant essential characteristics of both standards, as well as the long-standing requirement to CE mark powered systems under the Machinery Directive.

1.12 Fire and smoke resisting curtains

CE marking of powered fire/smoke resisting curtains has been required under the Machinery Directive since 1995.

1.12.1 Fire and smoke resisting curtains over doorways

Fire and smoke resisting curtains over doorways (within the scope of EN 13241:2003 + A2:2016) should be dealt with in exactly the same manner as explained in 1.1 to 1.13 above.

1.12.2 Fire and smoke resisting curtains forming partitions

As there is currently no product standard harmonised under the Construction Products Regulation for the mechanical and structural properties of fire and smoke resisting operable curtains that simply form room or area partitions, CE marking under the Construction Products Regulation (EU) 305/2011 is still not possible or required for these products, although the fire and smoke test standards do cover them.

Manufacturers are advised to get their fire and smoke resisting curtain assemblies tested and certified by a notified body to the requirements of EN 16034 and follow BS 8524-1 for the remaining elements.

They should issue a Declaration of Conformity, installation manual, operation and maintenance manual and CE mark the curtain in accordance with the Machinery Directive 2006/42/EC if it is powered.

Annex A (Informative)

Building regulations

As the rules for compliance differ from one jurisdiction and location to another, rather than attempt to provide the detail here, we advise that users of this document download the following documents.

A.1 England

Building Regulations 2010

Approved Document B volume 1 – domestic dwelling houses & volume 2 – buildings other than dwelling houses, section 5 "escape routes" and appendix B "fire doors" in the relevant volumes, explain how to achieve compliance.

The main points are:

i. fire and smoke resisting doors must comply with the relevant test standard
ii. fire and smoke resisting doors must be self-closing unless they are kept locked shut or are doors within flats (not entrance doors)
iii. rolling shutters in compartment walls (including fire/smoke resisting) must be openable and closeable manually by firefighters, without the use of a ladder
iv. rolling shutters on escape routes (including fire/smoke resisting) must only be activated by a local heat sensor
v. escape route doors (including fire/smoke resisting) should not present undue delay or complexity

For the finer detail, download and consult the relevant document at:

https://www.gov.uk/government/publications/fire-safety-approved-document-b

A.2 Wales

Building Regulations 2010

Approved Document B volume 1 – domestic dwelling houses & volume 2 – buildings other than dwelling houses, appendix B "Fire Doors" in the relevant volumes, explain how to achieve compliance.

The document for Wales contains very similar requirements to the England document.

For the finer detail, download and consult the relevant document at:

http://gov.wales/topics/planning/buildingregs/approved-documents/part-b-fire/?lang=en

A.3 Scotland

Building Standards

The Domestic and Non-domestic Handbooks 2017 explain how to achieve compliance.

The main points are:

i. fire and smoke resisting doors must comply with the relevant test standard
ii. motorised shutters (including fire/smoke resisting) should only be activated locally
iii. motorised shutters should not be installed in the enclosure of a protected zone
iv. manual shutters (fire/smoke resisting) activated by fusible link are permitted in the enclosure of a protected zone
v. shutters (including fire/smoke resisting) should not be installed on escape routes, other than for security purposes across a shop front and which does not close automatically in the event of fire
vi. escape route doors (including fire/smoke resisting) should not present undue delay or complexity

For the finer detail, download and consult the relevant documents at:

https://beta.gov.scot/publications/building-standards-technical-handbook-2016-domestic/

https://beta.gov.scot/publications/building-standards-technical-handbook-2016-non-domestic/

A.4 Northern Ireland

Building Regulations (Northern Ireland) 2012

Technical Booklet E, section 2 and 4 explain how to achieve compliance:

i. fire and smoke resisting doors must comply with the relevant test standard
ii. rolling shutters in compartment walls must be manually openable and closeable by firefighters
iii. escape route doors (including fire/smoke resisting) should not present undue delay or complexity

For the finer detail, download and consult the relevant documents at:

http://www.buildingcontrol-ni.com/assets/pdf/TechnicalBookletE2012.pdf

A.5 Republic of Ireland

Building Regulations 2006

Technical Guidance Document B, appendix B explains how to achieve compliance.

The main points are:

i. fire and smoke resisting doors must comply with the relevant test standard
ii. escape route doors (including fire/smoke resisting) should not present undue delay or complexity
iii. escape route doors (including fire/smoke resisting) should generally be outwardly opening swing doors or permanently held open when the building is in normal use

For the finer detail, download and consult the relevant documents at:

http://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/BuildingStandards/FileDownLoad%2C1640%2Cen.pdf

Company:	Address:

Declaration of Performance

Construction Products Regulation (EU) 305/2011

1. Unique identification code of the product type:

2. Intended use:

3. System of AVCP: **Systems 1, 3 and 4**

4. Harmonised standards: **EN 13241:2003 + A2:2016 & EN 16034:2014**

5. Notified bodies:

6. Declared performance:

Essential Characteristics	Declared Performance	AVCP System	Harmonised Standards
Water tightness		3	EN 13241: 2003 + A2:2016
Dangerous substances		3	
Resistance to wind load		3	
Thermal resistance		3	
Air permeability		3	
Safe opening		3	
Definition of geometry of glass components		4	
Mechanical resistance and stability		4	
Operating forces		3	
Durability of water tightness, thermal resistance and air permeability against degradation		3	
Resistance to fire	E I_1 I_2 W	1	EN 16034:2014
Smoke control		1	
Ability to release		1	
Self-closing		1	
Durability of ability to release		1	
Durability of self-closing against: degradation and ageing		1	

6. Appropriate Technical Documentation

The performance of the product identified above is in conformity with the declared performances. This declaration of performance is issued under the sole responsibility of the manufacturer identified above.

Name, date & signature:

Annex B.1 (Informative)

Example Declaration of Performance Construction Products Regulation

NOTE 1: Manual doors do not require the operating forces reference.

NOTE 2: Horizontally moving doors do not require the safe opening reference.

NOTE 3: Section 6 is only required where article 36 evidence is being used for AVCP 3 items.

Company:		Address:	
CE	(EU) 305/2011 & 2006/42/EC	**Year:** **Product type:** **Unique Identification no:**	
Essential Characteristics		Declared Performance	Harmonised Standards
Water tightness			EN 13241:2003 + A2:2016
Dangerous substances			
Resistance to wind load			
Thermal resistance			
Air permeability			
Safe opening			
Definition of geometry of glass components			
Mechanical resistance and stability			
Operating forces			
Durability of water tightness, thermal resistance and air permeability against degradation			
Resistance to fire		E I_1 I_2 W	EN 16034:2014
Smoke control			
Ability to release			
Self-closing			
Durability of ability to release			
Durability of self-closing against degradation and ageing			
Type testing by:			
Intended use:			

Annex B.2 (Informative)

Example CE mark Machinery Directive and Construction Products Regulation

NOTE 1: Manual doors will not have the Machinery Directive 2006/42/EC or operating forces references.

NOTE 2: Characteristics declared as NPD do not need to be included on the CE label.

NOTE 3: Information on the CE label must match that on the DoP.

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