



Novoferm Schievano S.r.l.

The New Generation of Firedoors

Product Standard EN 16034

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Introduction

A modern company, while operating in mature sectors, is actually part of an increasingly *technocratic* world, influenced by technical, behavioural, legal and market standards.

With the advent of CE marking, especially for products for public use (such as firedoors, lifts and emergency exits), many new obstacles have arisen for the entry of new producers due to the initial costs of testing, certifications and research, which are unrelated to the manufacturers' expertise.

We need to reckon with a highly complex system of European technical regulations established in recent years by extremely specialised regulators. This reality is difficult to understand and interpret when viewed from outside; it seems distant but it actually concerns **everyday products**.

On the other hand, rigorous European standards are increasing the quality of European products and making them appreciated worldwide.

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1. CPR 305/2011/EU Construction Products Regulation

European standards are gradually replacing national standards, which, by incorporating them and making them their own, become harmonised standards. The reference standard for construction products is the **CPR 305/2011/EU** Construction Products Regulation.

It involves the following parties:

- manufacturers when the declaration of performance is made for their products;
- notified bodies in the country of member states;
- users (designers, builders etc.) when they select the most suitable products for use;

It establishes:

- the basic requirements for construction works;
- the declaration of performance;
- assessment and verification systems of constancy of performance.

The CPR 305/2011/UEU Regulation, in force since 1 July 2013, replaces the Construction Products Directive (CPD), which established the same areas in a less stringent manner.

Manufacturers need to distinguish products determined by the standard with **CE marking**, in compliance with the procedure of designing, testing and controlling production, established by specific harmonised product standards. In formal terms, “EN ...” technical standards are acknowledged by national bodies that simply translate them into the language of their country and put their signature to the standard. In Italy the regulator is UNI, and standards become “UNI-EN ...”. In Germany, they become “DIN-EN...” etc.

2. CE marking: the fundamental steps

The CE mark has the literal meaning of “European Conformity”. The graphic sign shows that the product to which it is applied complies with current European standards.

CE marking aims to give increasing protection to users and consumers through a process that controls and improves the quality of products.

The path a manufacturer needs to follow involves the following stages:

- Initial type testing (ITT);
- Extension of test results (EXAP)
- Production control (EPC);
- Product traceability.

2.1 ITT - Initial Type Testing

Components, accessories and doors need to be tested by a notified body, which has the task of assessing that products and services comply with the conditions established by European Directives. This body is authorised and registered with NANDO, the register of European notified bodies.

European Directives govern all products (materials, manufactured goods, systems, etc.) that are made to become a permanent part of construction works such as buildings and civil engineering works, which need to comply with at least one of the following requirements:

- mechanical resistance and stability;
- safety in case of fire;
- hygiene, health and the environment;
- safety in use;
- protection against noise;
- energy saving;
- sustainable use of natural resources in implementing construction works.

cribed in the CPD 89/106

Recently introduced

More specifically for firedoors, fire resistance tests are governed by the EN 1634 standard.

2.2 Classification

The exposure conditions, performance criteria and classification procedures to be used for fire resistance tests are included in the EN 13501 standard.

Symbols:

R	Load bearing capacity
E	Tightness
I	Insulation
W	Irradiation
M	Mechanical action
C	Automatic closing device
S	Smoke control
RC	Burglar resistance

2.3 EXAP - Extended Application

These standards establish the validity and applicability of the ITT results for **products modified** at the production unit. For firedoors, the EN 15269 standard is applied.

2.4 FPC - Factory Production Control

To achieve and maintain CE marking, manufacturers of doors and accessories need to establish and apply production control at the factory (FPC).

It aims to guarantee the reproducibility of the sample that has been duly tested and certified.

Manufacturers need to:

- prepare the procedures and documents that register the controls made;
- start controls: at the time of purchases, by checking basic materials, establishing production processes and intermediate controls, and final inspection of finished products;
- guarantee, where applicable, the traceability of lots and individual products and their components.

This system ensures that manufactured products comply with the product that passed the initial tests (except for variations permitted by EXAP).

The standard involves **5 levels** of assessment and verification of constancy of performance called AVCP (former System of Attestation and Conformity or SAC). Each CE marked product falls into one of the 5 pre-established levels. The more important the product is considered for safety, the more stringent are the controls.

Attestation and Conformity System AVCP (former SAC)					
	Levels:				
The responsibility of the Manufacturer:	1+	1	2+	3	4
Initial type testing (ITT)					
Factory production control (FAC)					
Regular tests according to schedule					
The responsibility of the Notified Body:	1+	1	2+	3	4
Initial type testing (ITT)					
Certification of FPC					
Supervision of FPC					
Audit-Testing of samples					

The manufacturer needs to establish a production control system in the very broad sense, since it is intended to guarantee the stability and reliability of the performance of finished products.

It involves the following:

- the overall production process (calibration of tools, procedures, controls, maintenance);
- supplies and controls on entry;
- management of non-compliance and corrective actions;
- controls of finished products;
- warehouse management (traceability of components and materials).

For control purposes, ISO 9001-2008 Quality Certification procedures are applied.

Remember that the ISO 9001-2008 standard is aimed at the repeatability of results (and therefore products) in compliance with pre-established tolerances and specifications. Therefore, it does not concern product quality in the usual sense of the word. In other words, ISO 9001 Certification is actually Certification of Repeatability.

It follows that Quality Certification is totally aimed at implementing FPC.

2.5 Traceability of finished products

Manufacturers of firedoors are required to guarantee **traceability**. This allows eventual withdrawal or recall of a product from the market if a manufacturer considers that it fails to conform or comply with the requirements of CE marking.

3. Declaration of Performance (DoP)

A key concept of the new 305/11 Regulation, with fundamental changes compared to the former CPD 89/106/EEC Directive, is the Declaration of Performance (DoP), which replaces the former Declaration of Conformity for construction products. The CPR requires a manufacturer to duly declare the **performance of a product**, instead of conformity to the certified prototype, as required previously.

The aforesaid Declaration of Performance:


- is mandatory for all manufacturers covered by a harmonised standard;
- must contain information on its intended use;
- must include the performance of at least one of the essential characteristics.

Manufacturers need to assume responsibility for the performance declared.

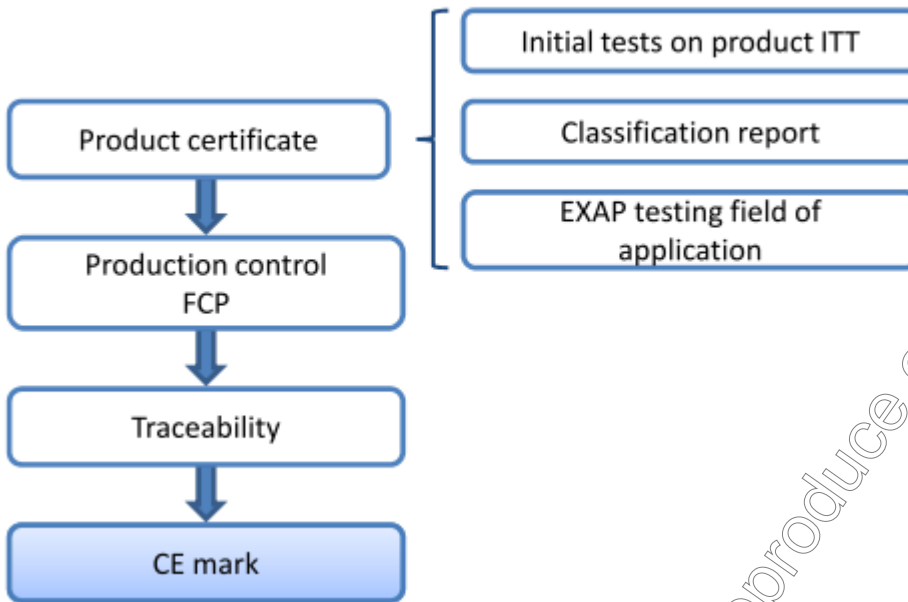
Derogations to the Declaration of Performance - DoP (Article 5 of Law no. 305/2011) are only allowed in specific cases:

- the product is manufactured as a single sample or to customer specifications, and it is not part of standard production;
- the product is manufactured at the worksite;
- the product is manufactured using traditional restoration methods.

Example of CE Marking on firedoors:

 XXX	CE marking, consisting of the "CE"-symbol Identification number of the product certification body
AnyCo Ltd, PO Box 21, B-1050, Brussels, Belgium 14 to be given by the manufacturer	name and the registered address of the manufacturer, or identifying mark Last two digits of the year in which the marking was first affixed Reference number of the DoP
EN 16034:2014 to be given by the manufacturer fire and/or smoke compartmentation and/or escape routes Resistance to fire (for fire compartmentation uses): E: 90 EI ₁ : 60 EI ₂ : 90 EW: 60 Smoke control (only for applications where limitation of smoke spread is required): S ₂₀₀ Ability to release: released Self-closing (only for self-closing fire resistant and/or smoke control doorsets and /or openable windows): C Durability of ability to release: release maintained Durability of self-closing (only for self-closing fire resistant and/or smoke control doorsets and /or openable windows): - against degradation (cycling testing): 2 - against ageing (corrosion): achieved	No. of European standard applied, as referenced in OJEU (see Note 14) Unique identification code of the product-type Intended use of the product as laid down in the European standard applied Level or class of the performance declared

The CE marking process



Structure of the Technical CEN/TC33 Technical Committee:

CEN/TC 33 Subcommittees and Working Groups	
Working group	Title
CEN/TC 33/WG 1	Windows and doors
CEN/TC 33/WG 3	Blinds and shutters
CEN/TC 33/WG 4	Building hardware
CEN/TC 33/WG 5	Industrial, commercial and garage doors and gates
CEN/TC 33/WG 6	Curtain walling
CEN/TC 33/WG 7	Burglary resistance
CEN/TC 33/WG 8	Fire and smoke control
CEN/TC 33/WG 9	Powered Pedestrian Doors (PPD)

4. Product standard EN 16034

On 8 July 2014, the Technical Committee of the European standardisation body CEN reported that the draft standard prEN 16034 was voted and approved by the European Union member states.

Therefore, on 1 October 2014 the draft standard became the EN 16034 standard, pending publication in the Official Journal of the European Union.

The official name of the standard is:

“Pedestrian doorsets, industrial, commercial, garage doors and openable windows - Product standard, performance characteristics - Fire resisting and/or smoke control characteristics”.

With its full coming into force, at the end of the transitional period of coexistence with national standards, all firedoors must be:

- successfully tested for compliance with the EN 1634 European testing standard;
- CE marked.

In addition, with further tests, fire and smoke protection products can be enhanced with other functions such as watertightness, air permeability, wind resistance, heat and acoustic insulation, closing capacity and impact resistance.

For Italy, **smoke-proof** doors are a new product, which had never been introduced by our regulations, although already in use in many other countries.

In the last few years, the Novoferm group has made a great effort to launch a new smoke-proof door on the market, which is certified in accordance with the above European standards.

The new door will be called “**Elite +**” and will go into production in January 2015.

The application of “CE” marking will be examined as soon as possible.

Fields of application of the standard:

Fields Standard	Industrial	Commercial	Garage	Windows and openable doors	For outdoors	For indoors	Fire and smoke-proof
EN 14351-1							
prEN 14351-2							
EN 16034							
EN 13241-1							
EN 16035							

Table of related standards:

Product type:	Product standard:	Certification standard:	Classification standard:	Extensions standard:
Firedoors	EN 16034	EN 1634-1	EN 13501-2 (E, E1, E12, EW)	EN 15269-...
Smoke-proof doors	EN 16034	EN 1634-3		EN 15269-...
Doors for outdoors	EN 14351-1			
Doors for indoors	prEN 14351-2			
Industrial, commercial and garage doors	EN 13241-1	EN 12605		
Motorizations	EN 16361			

EXAP list - EN 15269 standard:

EN 15269-1	General requirements
EN 15269-2	Metal doors on hinges or pivots
EN 15269-3	Wood doors
prEN 15269-4	Glass doors (draft not launched yet)
prEN 15269-5	Glass doors with metal frames
prEN 15269-6	Sliding wood doors
EN 15269-7	Sliding metal doors
prEN 15269-8	Folding wood doors (draft not launched yet)
prEN 15269-9	Folding metal doors (draft not launched yet)
EN 15269-10	Roller closures
prEN 15269-11	Flexible curtain doors
prEN 15269-20	Smoke-proof doors

AVCP (SAC) control system established by the EN 16034 standard (level 1 is required for fire doors):

Table ZA.3.1 — Assignment of AVCP tasks for fire resisting and/or smoke control doorsets and for openable windows under system 1

Tasks		Content of the task	AVCP to apply
Tasks for the manufacturer	Factory production control (FPC)	Parameters related to essential characteristic of Table ZA.1 relevant for the intended use which are declared	6.2
	Further testing of samples taken at factory according to the prescribed test plan	Essential characteristic of Table ZA.1 relevant for the intended use which are declared	6.1.1
Tasks for the notified product certification body	Determination of the product type on the basis of type testing (including sampling), type calculation, tabulated values or descriptive documentation of the product	Essential characteristics of Table ZA.1, relevant for the intended use: - Resistance to fire E, I - Smoke leakage S - Ability to release (only for the related hardware) - Self closing C	6.1.1
	Initial inspection of manufacturing plant and of FPC	Parameters related to essential characteristics of Table ZA.1, relevant for the intended use which are declared, namely: - Resistance to fire E, I - Smoke leakage S - Ability to release (only for the related hardware) - Self closing C Documentation of the FPC.	6.2.4
	Continuous surveillance, assessment and evaluation of FPC	Parameters related to essential characteristics of Table ZA.1, relevant for the intended use which are declared, namely: - Resistance to fire - Smoke control - Ability to release - Self closing Documentation of the FPC.	6.2.5

Estimated phases and times of the distribution process:

Approval of the standard by the Technical Committee
Date of Ratification (DOR) 08-07-2014



Date of Availability (DAV) of the standard (1 October 2014)



Date of Announcement (DOA) (31-01-2015)



Publication in the Official Journal of the European Union
Date of Publication (DOP) 30-04-2015
The last date for the publication of the UNI EN standard



***Valid only for the CE (DOW)
standard
(not later than 31-10-2019)***

The given dates are those expected to date, however, at the national level the period of coexistence may be reduced. It remains unlikely that the above periods will be prolonged.

N.B.

Date of Ratification (DOR): the date when the Technical Committee approves the EN (or HD for CENELEC). From this date onwards, we can say that the standard has been approved.

Date of Availability (DAV): the date when the final draft in the official language is distributed by the Central Secretariat.

Date of Announcement (DOA): the last date that the existence of an EN (or HD for CENELEC) needs to be announced at a national level.

Date of Publication (DOP): the last date on which an EN must be implemented at the national level with the publication of the translated version or simply upon receipt (the UNI does not always translate standards).

Date of Withdrawal (DOW): the last date by which national standards must be withdrawn if they conflict with European standards.

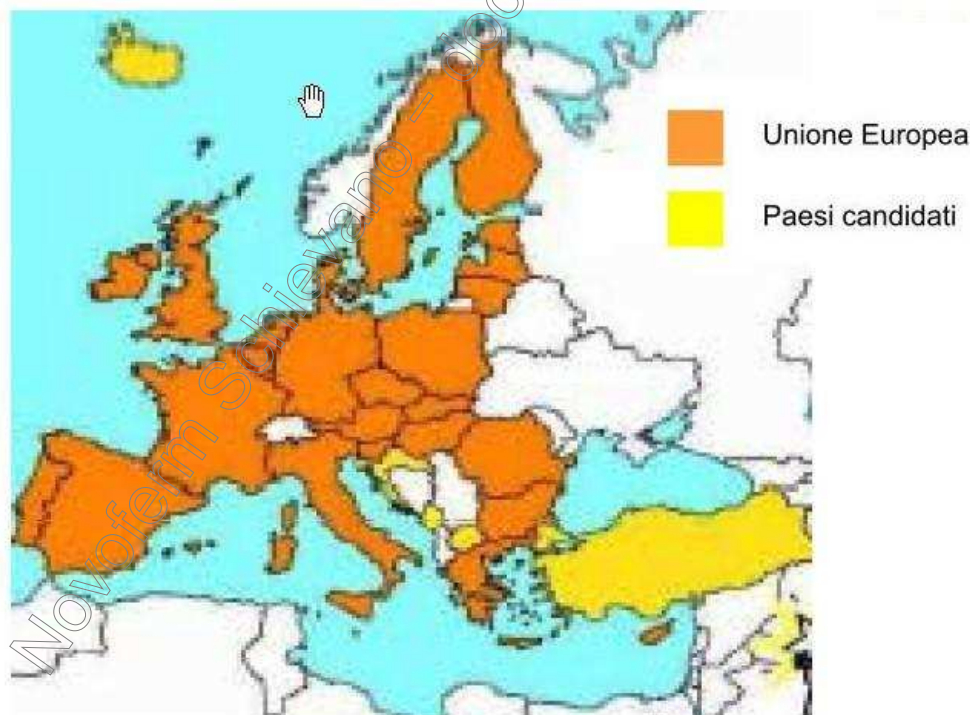
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The Italian standard and the European standard compared:

For your information, we have compared the current Italian standard with the new European standard. Certain comparisons are arbitrary but useful as a guide.

Italian standard M.D. 14-12-1993 (G.U. 303 of 28-12-1993)	European standard EN 16034
Test report (UNI 9723)	Test report (ITT) (UNI-EN1634)
Test certificate	Classification report EN 13501
Extensions (UNI 9723 FA1)	Extensions EXAP EN 15269-xx
Ministerial approval	Product certificate
Ministerial controls	AVCP system (former SAC)
Declaration of Conformity	Declaration of Performance (DoP)
Data plate	Traceability
-	CE marking

Countries participating in the drafting of the EN 16034 standard and interested in its introduction (for countries that are voluntary candidates):



Glossary:

AVCP	Assessment and Verification of Constancy of Performance, replaces SAC
CEN	European Committee for Standardisation
CPR	Construction Products Regulation
DoP	Declaration of Performance
EN	European Standard
EXAP	Extensions
FPC	Factory Production Control
ITT	Initial Type Testing
prEN	Draft European Standard
SAC	System of Attestation and Conformity, now AVCP
UNI-EN	European standards implemented by the Italian standardisation body

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