BM TRADA

CE

Technical information

CE marking of windows & external pedestrian doorsets

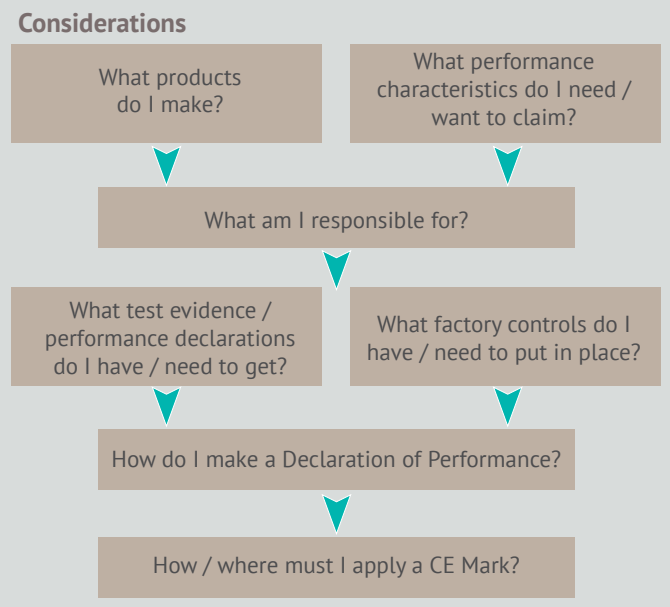
Guidance for manufacturers

01 Introduction

From 1st October 2013 it became illegal to place windows and external pedestrian doorsets on the market without a CE Mark and a Declaration of Performance (DOP). This is due to the introduction of the European Construction Products Regulation (CPR) which is an EU law and is being adopted by all member states including the UK.

This guide explains what manufacturers / assemblers of complete window and external doorsets (that are not fire, smoke or emergency escape doors) will need to do to comply with the CPR, which means meeting the requirements of the Product Standard BS EN 14351-1: 2006 +A1:2010: *Windows and doors – Product standard, performance characteristics – Part 1: Windows and external pedestrian doorsets without resistance to fire and / or smoke leakage characteristics.*

We recommend that you also read BS EN 14351-1 which contains further information on the process.



02 What products do I make?

The first thing to do is to define your products and group them into 'product families'.

When grouping products, you should consider whether you can demonstrate that variations within the same product family do not impact on the performance characteristics you need or want to claim.

The declared performance for the product family must be the lowest performance achieved by the product range covered by the family, so bear in mind that grouping a wide range of variations into a family will not show the higher performing variations e.g. a multi-light window or doorset with side lights / panels is likely to achieve a lower performance than a single window or doorset. Likewise, a tilt / turn window typically will have a lower performance than a side hung window.

When attempting to identify product families it is sensible to consider:

1. Variations in the core components within a product family i.e.
   a. **Frame** e.g. materials (i.e. PVC-U, timber, aluminium or steel) and dimensions
   b. **Casement / leaf** e.g. materials and dimensions, as well as different opening configurations (e.g. side hung, top hung, tilt / turn windows* and side hung, sliding and bi-folding doors)
   c. **Hardware** e.g. differing hardware suppliers
   d. **Weather sealing** e.g. different types of seal
   e. **Infill panels - glazed / non-glazed** e.g. variations in glazing or the size / shape of infill panels in door leaves.
2. Whether any variations in core components are likely to impact on the performance claimed for the product family e.g. changes in weather sealing where watertightness is being claimed.
3. Whether you have test evidence to demonstrate that the performance claimed is representative of all the core component variations within the product family e.g. test evidence for the least favourable configuration / components. This should be the performance being claimed.

The product family must be clearly defined and described (ideally including drawings), this detailed description should be held by the manufacturer in a Technical File along with technical specifications, test reports and other relevant documents to support the Declaration of Performance (DOP).

Ultimately it is your decision as the manufacturer as to how you group your products and therefore how many Declarations of Performance and CE Marks you create but you need to ensure there is evidence to support the grouping and that the performance of your products is best represented.

03 What performance characteristics do I need / want to claim?

The Product Standard includes a list of 'Essential Characteristics' (in Annex ZA) that must be referred to in the Declaration of Performance and CE Mark. These all need to be included to confirm you have considered them, but only a few MUST have a performance claimed against them – these are Mandatory in the UK (see Section 4, Table 1A). The other 'essential' characteristics can have 'No Performance Determined' (NPD) rather than a specific claim of performance (see Section 4, Table 1B).

However, if you have test evidence against the appropriate standards then it would make sense to include this performance in the DOP. In addition, you may wish to claim performance for as many characteristics as possible to gain marketing / competitive advantage and / or meet specifications.

In addition, there are other performance characteristics referred to in BS EN 14351-1 that you may have or want to have that are not included in Annex ZA but can be added to your Declaration and CE Mark in addition to the essential characteristics, such as security, mechanical strength, etc.

04 What am I responsible for?

Responsibility for completing the various stages of the CE marking process for construction products varies depending upon how safety critical the product is. The more critical, the greater 'third party' involvement is required.

Windows and external doorsets without fire resistance, smoke leakage performance or on escape routes† are not considered safety critical and therefore are covered by Assessment and Verification of Constancy of Performance (AVCP) System 3.

This means the **Manufacturer** is responsible for all stages of the process, including the Declaration of Conformity and issue of the CE Mark.

The only Notified Body involvement is to provide test evidence. In the UK Notified Test Laboratories must be UKAS accredited.

*There is guidance for windows in Annex F of the Product Standard for choosing the most vulnerable opening configuration to test to cover the family. If you are happy to claim the lowest performance your range can achieve, it may reduce the number of tests.

†Under BS EN 14351-1, if the external door is to be used as an emergency exit and fitted with panic hardware then it is considered life critical and is covered by AVCP System 1. This requires the involvement of a Notified Certification Body throughout the process, including producing a Certificate of Conformity and CE Mark. The requirements for this process are not covered by this Guide.

05 What test evidence / performance declarations do I have / need to get?

To identify the test evidence you require, a 'Gap Analysis' is normally undertaken. This is basically to identify what you need, what you already have, and therefore any gaps in the test evidence that you will need to fill. Test evidence may be your own, cascaded from a system supplier or based on a declared value from a material supplier. 'Test evidence' may be a test report / certificate, thermal simulation report and / or COSHH sheets (for Dangerous Substances).

Whichever form the evidence takes, it is your responsibility to ensure you have the necessary documentation to support your performance claims.

When identifying gaps in your test evidence you need to consider:

- Grouping of your products into families
- The characteristics that you need / want to claim for each family
- What test evidence you already have and whether:
  - Test samples are representative of the product / family.
  - Is it to the correct test standard? Only European test standard evidence is valid.
  - Is it from a Notified Body? In the UK, test laboratories must be accredited by UKAS.

If this process identifies any gaps, you will need to conduct any additional testing required at a Notified Test Laboratory or change your Declaration(s) accordingly.

The Essential Characteristics and the related test requirements are detailed in the tables 1a and 1b.

Mandatory Essential Characteristic	Testing Required
Thermal transmittance (in the UK as it is a requirement of the Building Regulations)	Test evidence to BS EN ISO 10077-1 & BS EN ISO 10077-2 which must be completed or verified by an accredited Notified Body
Dangerous substances	Obtain declaration or COSHH sheet from material suppliers
Load-bearing capacity of safety devices (if fitted)	Test evidence to BS EN 14609 or BS EN 948, which may be included within test evidence to BS 6375: Part 2

Table 1a

Essential Characteristics where NPD can be Declared	Test Evidence unless NPD to be Declared
Air permeability	Test evidence to BS EN 1026 (should be included within test evidence to BS 6375: Part 1)
Watertightness	Test evidence to BS EN 1027 (should be included within test evidence to BS 6375: Part 1)
Resistance to wind load	Test evidence to BS EN 12210 (should be included within test evidence to BS 6375 part 1)
Acoustic performance	Test evidence to BS EN ISO 140-3 or BS EN 10140-2
Radiation properties	Declaration of Solar Transmittance to BS EN 410 from Glazing supplier
Impact resistance (Doorsets only)	Test evidence of glazing to BS EN 13049
Reaction to Fire (Roof windows only)	Test evidence to BS EN 13501-1
External fire performance (Roof windows only)	Test evidence to BS EN 13501-5
Resistance to snow and permanent load (Roof windows only)	Supplier declared load bearing capacity of glazing/ panel

Table 1b

Declaration of Performance Date of declaration	
Manufacturer	Company name
Product Type	Product name and description e.g. Perfecto Timber external doorsets
Manufacturer's Reference No.	Reference Number e.g. 111-222
Intended Use	e.g. Not on escape routes
Authorised Representative	Supplier name, if different to Manufacturer
AVCP System	3
Reaction to Fire (Roof windows only)	Test evidence to BS EN 13501-1
External fire performance (Roof windows only)	Test evidence to BS EN 13501-5
Resistance to snow and permanent load (Roof windows only)	Supplier declared load bearing capacity of glazing / panel
Harmonised Product Standard	BS EN 14351-1:2006 + A1:2010
Declared Performance of Each Characteristic	
Thermal transmittance	Performance e.g. 1.6W/m^{2}K
Air permeability	NPD or Performance e.g. Class 3 (600Pa)
Watertightness	NPD or Performance e.g. Class 5a (200Pa)
Resistance to wind load	NPD or Performance e.g. Class 3 A
Dangerous substances	None
Acoustics	NPD or Performance e.g. 32dB
Load bearing capacity of safety devices	Performance e.g. 350N or Pass
Impact resistance of glass or fragmental material	NPD or Declared performance (provided by glass supplier)
Radiation properties	NPD or Declared performance (provided by glass supplier)

This declaration is issued under the sole responsibility of the manufacturer, or his representative.

Signed for and on behalf of the manufacturer by:

_____

Name and title

Signature _____ Date of issue _____

Note: Performance figures for the characteristics are examples only.

06 What factory controls do I have / need to put in place?

As well as test evidence to prove product performance claims, CE marking requires manufacturers to maintain a factory production control system to demonstrate consistency / control of manufacture and provide a degree of confidence that the products placed on the market conform to the DOP

It is the manufacturer's responsibility to establish, document and maintain a Factory Production Control System:

- **Establish** - the system should cover all aspects of the production process that affect product conformity, including:
  - Personnel (e.g. responsibility, competence and training)
  - Equipment (e.g. calibration and maintenance)
  - Materials and components (e.g. inspection and testing / assessment)
  - Product (e.g. inspection, testing / assessment of products and traceability / identification)
- **Document** i.e. procedures and records for all of the above
- **Maintain** i.e.
  - Initial inspection – to check the above
  - Ongoing surveillance, inspection, testing / assessment
  - Identification of non-conformances and corrective action

In many cases manufacturers will already be operating to ISO 9001 or an existing system that meets all of the above requirements.

If not, then the manufacturer will need to put a system in place that meets the above requirements.

07 How do I make a Declaration of Performance (DOP)?

The CPR requires that the manufacturer makes a formal DOP for each of the products or product families that he places on the market. The purpose of the DOP is to enable easy comparison of performance, it should list all of the relevant essential characteristics, including declared performance for mandatory characteristics and NPD or declared performance for any other characteristics, as per the example shown on page 4.

08 How / where do I apply the CE Mark?

The manufacturer will be responsible for creating a CE Mark, printing it and applying it to their product. It must be affixed visibly, legibly and indelibly on one or more of the following locations: the product, attached label, packaging, on the accompanying commercial documentation (e.g. delivery note) or the manufacturer's published technical specifications.

The format of the CE Mark as well as the information that needs to be included to ensure traceability is detailed in the Product Standard. The following is an example CE Mark:

Name and address of Manufacturer	
Last 2 digits of year of CE marking	
BS EN 14351-1:2006 +A1:2010	
Perfecto timber external doorsets (not used on an escape route)	
Thermal Transmittance	1.6W/m^{2}K
Air permeability	Class 3 (600Pa)
Watertightness	Class 5a (200Pa)
Resistance to wind load	Class 3A
Dangerous substances	None
Acoustics	32dB
Impact resistance of glass and fragmental material	NPD
Load bearing capacity of safety devices	350N or Pass
Radiation properties. Declared values	NPD

Note: If you choose only to affix the 'CE' symbol to the product, the additional information is to be contained in document(s) accompanying the product.

The CE marking European Union