Guidance Note No 19/1

CE Marking – windows and doorsets

What is CE marking?

The CE marking of products in the European Union is used by manufacturers to indicate that their products conform to requirements in specific European technical standards, known as harmonised Euro Norms (hENs) or European Technical Assessments (ETAs).

CE marking is essentially a passport for the product, allowing it to be placed legally on the market in any given European member state. Note that, however, regulatory requirements may differ from country to country, which could mean, for example, differences in the CE marking requirements for construction products between England, Scotland, Wales and Northern Ireland, as the devolved administrations have responsibility for the Building Regulations in their respective countries.

To CE mark a construction product, manufacturers have to provide documentary evidence that their product meets the required standard, demonstrating to specifiers, contractors, building inspectors, Trading Standards, etc, that the product complies with the essential requirements contained in the standard.

By definition, a construction product is any product or 'kit'[1] which is produced and placed on the market for incorporation in a permanent manner in construction works or parts thereof, where the performance of the product affects the performance of the construction works with respect to certain "basic requirements", which include safety, hygiene, accessibility and heat retention.

CE

The CE mark (shown left) must be displayed on the product, label, packaging or accompanying commercial documents. The CE mark enables manufacturers to state the performance of their products; it is not a quality mark. The presence of a CE mark does not mean that a construction product can be used for any application; conformity with the building project requirements must be checked for each specific use.

[1] Kit – a construction product placed on the market by a single manufacturer as a set of at least two separate components that need to be put together to be incorporated in the construction works

Why is it important?

The Construction Products Regulation 2011 (CPR)[2], which replaces the Construction Products Directive (CPD), makes **CE marking a mandatory legal requirement for all products placed on the market and covered by a hEN from 1st July 2013**. A "Declaration of Performance" for the product must be drawn up and CE marking applied by the manufacturer. This is the most significant change for a decade in the way that construction products are sold in Europe.

In England, Trading Standards will enforce the CPR and any breaches by manufacturers could result in a fine of up to £5,000 and/or a three month jail sentence.

Note that National Building Regulations will still apply.

Scope of this Guidance Note

This Guidance Note is intended for manufacturers of windows and external doors, covered by the harmonised product standard **BS EN 14351-1**.

This standard applies to products including: windows, casement doors, external pedestrian doorsets, external doors on escape routes and roof windows (including roof windows with external fire resistance).

This standard does **not** apply to other products, which will need to be CE marked using other standards, including:

- external pedestrian doorsets and windows subject to fire resistance and smoke leakage regulations (CE marking in compliance with prEN 16034 when published)
- curtain walling with or without structural glazing (CE marking in compliance with EN 13830) – see Guidance Note 20
- internal doors (CE marking in compliance with prEN 14351-2 when published).

Who is the "manufacturer"?

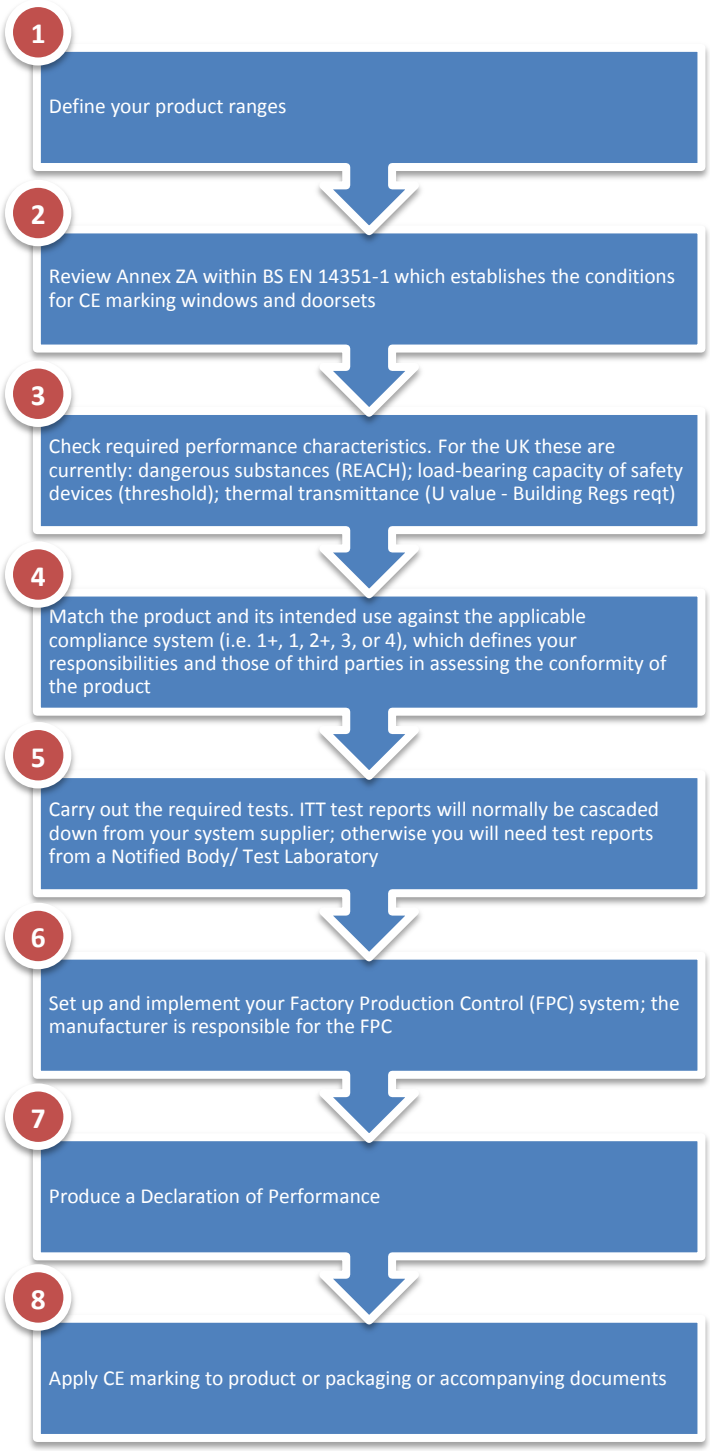
Manufacturers are any natural or legal persons who manufacture products (e.g. windows, doors), or who have such products designed or manufactured, and market those products under his name or trademark.

Using the example of a window, a company that assembles all the components including the frame and the glazing to produce a finished window product for the market is classed as a manufacturer for the purposes of the CPR: **a company that buys frames from one source, Insulated Glazed Units (IGUs) from another and hardware from another to produce windows is deemed to be the manufacturer under the Construction Products Regulation 2011 and is therefore legally responsible for CE marking.**

[2] The CPR can be found at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:088:0005:0043:EN:PDF

What does the manufacturer need to do?

The chart below sets out the CE marking process in brief. The following sections of this Guidance Note provide further details on each step.



1 Define your product ranges

For the purposes of this guidance note, your products will be windows and/or pedestrian doorsets covered by BS EN 14351-1.

You should where possible group your product range, e.g. casement, fixed, multilight, etc. This will allow you to declare separate performance levels for each style against the required characteristics. It is the collection of characteristics and their performance values that define the product type.

- If you decide all your products are to be placed into a single group you will need to prepare only one Declaration of Performance (detailed in section 8 below), but this will need to state the worst properties achieved across the group.
- As the Declaration of Performance is a legal statement of the performance of your products, you must use only this data when referring to your products, for example in any sales literature and on websites.
- Hence you need to think carefully about the optimum grouping of your products.

2 Review Annex ZA

Annex ZA forms part of each harmonised standard (hEN) and this provides the checklist for CE marking that you must review.

Annex ZA normally sets out:

- which product performance characteristics need to be determined and declared by you
- who is responsible for the tasks that lead to the Declaration of Performance, i.e. which are your responsibility and which are the responsibility of an independent third party (a 'Notified Body' i.e. a UKAS accredited test house)
- the information that needs to accompany the CE marking symbol.

In particular, Annex ZA of BS EN 14351-1 sets out:

- the performance characteristics that are relevant to windows and external pedestrian doorsets used for communication in domestic and commercial locations (Table ZA.1) – see section 3 below
- the "Assessment and Verification of Constancy of Performance" or AVCP – which defines the degree of involvement of independent third parties in testing the product in accordance with the relevant clauses within the standard and its intended use (Table AZ.2) – see section 4 below
- how the testing and control tasks for the manufacturer and for any Notified Body are assigned within each AVCP system across the essential characteristics (Tables ZA.3a-c) – see sections 4, 5 and 6 below
- the contents of the Declaration of Performance (ZA.2.2) – see section 7 below
- the requirements for CE Marking and labelling (ZA.3) – see section 8 below.

3 Check required performance characteristics

Table ZA.1 in BS EN 14351-1 identifies the relevant "essential characteristics" you will need to declare for your products. The essential characteristics are those which relate to the basic requirements for construction works set out in the CPR as mentioned above. All of the essential characteristics must be considered but you will only have to provide performance evidence for those characteristics that are applicable to your product(s).

The rule is that you **must** determine the performance of any characteristic in the product standard that:

- has an identified threshold value
- is a requirement under UK building regulations.

Hence based on these criteria, for windows and doorsets not on escape routes there are only three essential characteristics that must be determined:

- **dangerous substances[3] (REACH requirement)**
- **load bearing capacity of safety devices when fitted (Threshold requirement)**
- **thermal transmittance (UK building regulations requirement).**

Note that for doorsets on escape routes, there is one further essential characteristic to declare:

- **ability to release (UK building regulations requirement).**

Additional essential characteristics from Annex ZA can be included in the Declaration of Performance (see examples in section 8 below).

"Empty" declarations are not permitted; when an essential characteristic has not been determined, the option "no performance determined" (NPD) can be used in the Declaration of Performance (DoP) and accompanying information. Note that if you have declared "NPD" against watertightness, for example, you cannot then claim a performance value for this product against this characteristic in any sales literature or on your website.

[3] Influence on indoor air quality and not required for roof windows.

4 Determine the compliance system & responsibilities

You now need to refer to the system of Assessment and Verification of Constancy of Performance (AVCP), which sets out the tasks required for each system and who is responsible for each task, as summarised in the table below.

TASK	System 4	System 3	System 2+	System 1	System 1+
Factory Production Control (FPC)	Manufacturer	Manufacturer	Manufacturer	Manufacturer	Manufacturer
Factory sample tests	-	-	Manufacturer	Manufacturer	Manufacturer
Initial Type Tests (ITT)	Manufacturer	Notified Body	Manufacturer	Notified Body	Notified Body
FPC inspection	-	-	Notified Body	Notified Body	Notified Body
FPC certification	-	-	Notified Body	Notified Body	Notified Body
Audit testing	-	-	-	-	Notified Body

For each product the AVCP system which applies is decided collectively by the member states and the European Commission. Whether an approved third party or Notified Body needs to assess compliance against a task or whether a manufacturer can self-certify is based on several factors including the production process, the intended use of the product and the performance requirements, particularly in relation to health and safety; as can be seen from the table above, the lower the system number, the greater the involvement of a Notified Body.

Table ZA.2 in BS EN 14351-1 lists the AVCP systems relevant to external pedestrian doorsets and windows, including:

Product/ intended use	AVCP system designated
External pedestrian doorsets and windows (not roof windows) not on escape routes	System 3: manufacturer is responsible for FPC and can self-certify in accordance with the standard; Notified Body is responsible for Initial Type Tests
Doorsets on escape routes (i.e. doorsets with emergency or panic hardware fitted)	System 1: manufacturer is responsible for FPC and testing of samples to a test plan to ensure characteristics maintained; Notified Body is responsible for Initial Type Testing and initial inspection, continuous surveillance, assessment and approval of the FPC

Micro-enterprises[4] manufacturing construction products covered by a harmonised standard can use "Specific Technical Documentation" instead of Initial Type Testing when AVCP systems 3 and 4 apply, **if** equivalence of the testing methods can be demonstrated. This means that they can use different test methods from those specified in the standard, but they must be able to demonstrate that the methods set out in their Specific Technical Documentation are equivalent with the test methods set out in the standard, and that the construction product concerned complies with the applicable requirements. Hence it may be preferable to use the test methods specified in the standard rather than use Specific Technical Documentation.

These micro-enterprises can, however, treat products to which system 3 applies in accordance with the provisions for system 4. This means that they do not need to engage a Notified Body for ITT data and can carry out the tests themselves or engage an alternative test house.

Please note that the implementation and maintenance of a Factory Production Control (FPC) is **always** to be undertaken by the manufacturer (see section 7 below).

5 Carry out product testing

In BS EN 14351-1 the relevant test and calculation standards are listed in Section 2.2. Tables E.1 and E.2 in Annex E provide greater detail for windows and doorsets respectively.

If you manufacture your products in strict compliance with your system supplier's instructions and use their specified components and system design, the system company may provide the required Notified Body ITT reports, subject to a signed, written agreement between you and the system company in a process known as "cascading". Note that the responsibility for the Declaration of Performance and CE marking remains with the manufacturer.

As long as the product and the manufacturing process do not change, the Initial Type Tests only need to be performed once.

The four essential characteristics referred to in section 3 above are detailed below:

Dangerous substances

This is a requirement under REACH regulations. COSHH sheets for the product and elements should be retained which demonstrate that in normal use dangerous substances are not emitted by the door or window to the internal environment. COSHH sheets for the aluminium profiles, hardware, gaskets, glass, etc, should be available from your supplier(s).

- If there are no dangerous substances to report, enter "None" on the DoP.

[4] Micro-enterprises are defined in the CPR as having fewer than 10 employees AND an annual turnover of less than €2,000,000.

Load bearing capacity of safety devices

Where a safety device is fitted (e.g. retaining and reversing catches, restrictors, fixing devices for cleaning) it must be tested on the window as described in BS EN 14351-1. You will need to obtain evidence of performance in the form of a written test report from a Notified Body to demonstrate compliance with the standard; this will normally be provided by your system supplier.

- For windows with no safety devices, enter “None fitted” on the DoP
- For windows with safety devices enter “350N” on the DoP (assuming you can demonstrate that this threshold value is met by the product).

Thermal transmittance

Thermal transmittance is a legal requirement within UK Building Regulations, where the exact requirement may differ between the countries that comprise the UK. This data is normally obtained by calculation/ simulation using EN ISO 10077-1 and EN ISO 10077-2. Sometimes “hot box” testing is used, which is carried out to EN ISO 12567-1 or EN ISO 12567-2.

Evidence for the performance of your product(s) will be required in the form of a written technical report from a Notified Body that demonstrates compliance with the standards. This will normally be provided by your system supplier.

Ability to release

Any emergency exit device, panic hardware or hinge fitted to a doorset on an escape route must have been tested by a Notified Body to the relevant standards BS EN 179, BS EN 1125, BS EN 1935, prEN 13633 or prEN 13637. The test evidence in the form of a written report demonstrating compliance with the relevant standards from a Notified Body may be obtained from your hardware manufacturer.

6 Set up Factory Production Control (FPC)

It is the manufacturer’s responsibility to establish, document and maintain an FPC system to ensure that the products placed on the market conform to the stated performance characteristics. Where a manufacturer is cascading their system supplier’s Notified Body ITT results under AVCP system 3, for example, the FPC needs to provide evidence that you are manufacturing to the exact same standard as the products originally tested by your supplier.

The manufacturer’s FPC system needs to consist of documented procedures, regular inspections and tests which set out how you control incoming materials or components, equipment, the production process and the product.

You should also keep a record of complaints, any non-conforming products and product recalls, and what you did to prevent the problems happening again.

Accreditation to ISO 9001 is deemed to comply with FPC requirements.

7 Produce a Declaration of Performance

Once all the appropriate conformity assessment tasks have been carried out for the product, the manufacturer then needs to complete a Declaration of Performance (DoP) and keep the supporting paperwork in a technical file. Depending on the system of AVCP required, this technical file could include: test reports verifying the declared performance levels, sample test results, authorisation to use your supplier's test reports (cascading), FPC records and FPC certificates and inspection reports.

By drawing up a DoP, the manufacturer assumes the legal responsibility for the conformity of their product with the declared performance. The DoP is to be signed by the manufacturer's designated representative.

An example of a DoP is given below. This is for a window with intended use "any other", for which AVCP system 3 applies (from Table ZA.2 of Annex ZA). The example DoP sets out the eight essential characteristics that you are required to declare for this product from the standard. As noted above, for the UK market you must declare against three characteristics: dangerous substances, load bearing capacity of safety devices and thermal transmittance. The remaining five characteristics may be declared as "NPD" but you will not be able to claim a performance value against these characteristics elsewhere (e.g. within sales literature and on the company website).

You will need to make all relevant information and documents available to enforcement authorities and cooperate with them in any necessary action to eliminate risks posed by your products. You need to keep the DoP and technical files for 10 years (i.e. after the final product in the range has sold). You also need to demonstrate that each product continues to confirm with the DoP; your FPC should describe how you take corrective action if any non-conformity is discovered.

Products of the same batch which are supplied to a single user can be accompanied by a single DoP copy. Manufacturers can supply the customer with their copy of the DoP either in paper form or by electronic means. You should supply a paper copy when requested by your customer.

The DoP must be supplied in the language of the country where the product is sold.

Example Declaration of Performance

Construction Products Regulation Declaration of Performance **No 001 CPR 07-2013**		
1. Unique product identification code:	**Side hung casement A rated window code 1234567**	
2. Type, batch or serial number:	**XYZ 123 abc**	
3. Intended use:	**Any other (not on escape routes)**	
4. Manufacturer:	**A N Other Windows Ltd 23 Frame Street Glazeborough Shinyshire AB1 2CD**	
5. Authorised representative:	**Not applicable**	
6. System of Assessment and Verification of Constancy of Performance:	**System 3**	
7. Notified Body and tasks:	**BSI 0086 performed Initial Type Tests under system 3 and issued test report No's 246/13579, 248/24680 & 250/12345**	
8. European Technical Assessment:	**Not applicable**	
9. Declared performance:		
Essential characteristic	*Declared performance*	*Harmonised standard*
Watertightness	**Class 2A (200 Pa)**	**BS EN 14351-1: 2006 + A1:2010**
Dangerous substances	**None**	
Resistance to wind load	**Class 3A**	
Load bearing capacity of safety devices	**350 N**	
Acoustic performance	**NPD**	
Thermal transmittance	**1.7 W/m^{2}K**	
Radiation properties Solar gain Light transmittance	 **NPD** **NPD**	
Air permeability	**Class 3 (600 Pa)**	
10. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4. Signed for and on behalf of the manufacturer by:		
Name & job title:	**Ian Somebody, Managing Director**	
Place of issue:	**Glazeborough**	
Date of issue:	**12 July 2013**	
Signature:	*Ian Somebody*	

Your DoP ref

Your product type

Your product batch ref

Refers to Annex ZA, Table ZA.2

Entity legally responsible for the DoP

Refers to Annex ZA, Table ZA.2 and Item 3 above (intended use)

Legally required to declare performance of these three characteristics in the UK

"NPD" on DoP, so cannot make claims for this performance elsewhere

8 Apply CE marking

Once the above steps are completed, the manufacturer can CE mark their product. The CE mark is the primary means of notification that the manufacturer takes responsibility for the product's conformity with the DoP, as well as with all the applicable requirements defined in the CPR and all other additional related regulations. **No DoP = no CE mark.**

The CE mark must be affixed before the product is placed on the market and must be the only marking which demonstrates the conformity of the product with the declared performance against the essential characteristics (refer to Article 9 of the CPR).

The CE marking must be affixed visibly, legibly and indelibly in one or more of the following ways:

- on the product
- on an attached label.

Where these options are not practical on account of the nature of the product, then alternatively it may be affixed to:

- the packaging
- accompanying documentation (e.g. delivery note).

An example of a CE mark (based on the earlier DoP example) is shown below.

Example of CE marking

CE	**13** **A N Other Windows Ltd, 23 Frame Street, Glazeborough, Shinyshire AB1 2CD** **Side hung casement window 1234567** **No 001 CPR 07-2013**	
Essential characteristic	*Declared performance*	*Harmonised standard*
Watertightness	**Class 5A (200 Pa)**	**BS EN 14351-1: 2006 + A1:2010**
Dangerous substances	**None**	
Resistance to wind load Test pressure Frame deflection	 **Class 2 (800 Pa)** **Class A (≤ 1/150)**	
Load bearing capacity of safety devices	**350 N**	
Thermal transmittance	**1.7 W/m^{2}K**	
Air permeability	**Class 3 (600 Pa)**	
Type testing conducted by and EC certificate issued by:	**0086**	
Intended for use:	**Other**	

Last two digits of year of CE marking

Name and address of manufacturer, legally responsible for CE marking

Description/ code for product type

DoP reference

Includes all essential characteristics from the DoP that are **not** classified as "NPD"

Notified body ID – see list at http://ec.europa.eu/enterprise/newapproach/nando/

Intended use from BS EN 14351-1

The CE mark comprises:

- CE mark/logo
- last two digits of the year in which it was first affixed
- name and registered address of the manufacturer (or the identifying mark allowing identification of the name and address of the manufacturer easily and without ambiguity)
- unique identification code of the product type
- reference number of the DoP
- level or class of performance declared*
- reference to the harmonised technical specification applied
- identification number of the Notified Body (if applicable)
- intended use, as set out in the harmonised technical specification applied.

*In the example provided, we have listed the performance against all of the essential characteristics as listed on the DoP, apart from those declared as “NPD”.

The European Commission is considering allowing a condensed version of the CE mark to be used, which provides only some of the information listed above along with a reference to the DoP and the web address where it can be downloaded. We will update this guidance when this option is confirmed.

For further information on how to reproduce the CE logo and to obtain logos to download go to: http://ec.europa.eu/enterprise/faq/ce-mark.htm

Some additional elements of the CPR…

Manufacturers must ensure that their product is accompanied by operating instructions and safety information in the language of the country where the product is sold. Operating instructions should include all necessary information regarding routine care and maintenance, cleaning, suitable cleaning products, lubricants, the settings for moving parts and all procedures for replacing parts or coatings that are damaged or worn.

The manufacturer is also required to be able to provide a list with details of the economic operators they have supplied product to or been supplied product by, should a Market Surveillance inspection be carried out (e.g. by Trading Standards).

Summary

- Action depends on the product's intended use
- Characteristics that must be declared:
  - Dangerous substances
  - Load bearing capacity of safety devices (if fitted)
  - Thermal transmittance
  - Ability to release (for doors on escape doors)
- For AVCP system 3:
  - Notified Body to conduct Initial Type Tests
  - Manufacturer to implement and maintain Factory Production Control system
  - Manufacturer to make Declaration of Performance and CE mark product
- **This must be completed by 1 July 2013.**

The Council for Aluminium in Building is committed to providing authoritative, impartial advice on the use of aluminium throughout the construction industry. CAB makes every effort to ensure the technical accuracy, correctness, appropriateness and completeness of its guidance publications and other information. However CAB, its members and its employees, can take no responsibility for any subsequent use of information nor for any errors or omissions in the information supplied.

Glossary

AVCP: For each product within the scope of a hEN, the Assessment & Verification of Constancy of Performance (AVCP) system determines whether an approved third party or Notified Body needs to assess compliance against a task or whether a manufacturer can self-certify. This is based on several factors including the production process, the intended use of the product and the performance requirements, particularly in relation to health and safety.

COSHH: is the law that requires employers to control substances that are hazardous to health.

CPD: the Construction Products Directive (CPD) of 1989 was introduced to create a common framework for the regulations on buildings and construction works. It was one of the early directives from the EU designed to create a single market for goods and services. The CPD was replaced in 2011 by the Construction Products Regulation (CPR).

CPR: the Construction Products Regulation builds on the CPD and will necessitate the most significant change in over a decade for the construction products industry, as it will now become mandatory from 1 July 2013 for manufacturers to apply CE marking to their products which are manufactured to a harmonised European Standard or a European Technical Assessment. Regulations are the most direct form of EU law - as soon as they are passed, they have binding legal force throughout every member state of the EU, on a par with national laws.

DoP: the CPR requires the manufacturer to prepare a Declaration of Performance (DoP) which is the legal statement of a product's performance. The information that needs to be included in the DoP is detailed in Annex ZA of the relevant hEN.

FPC: Factory Production Control (FPC) is the documented set of policies, procedures, regular inspections and tests that the manufacturer uses to control incoming materials or components, equipment, the production process and the manufactured product(s).

hEN: a harmonised Euro Norm (hEN) standard is a European standard created on the basis of a request from the European Commission to a recognised European Standards Organisation to develop a European standard that provides solutions for compliance with a legal provision. Such a request provides guidelines which requested standards must respect to meet the essential requirements or other provisions of relevant European Union harmonisation legislation. Manufacturers can use harmonised standards to demonstrate that their products, services or processes comply with relevant EU legislation.

ITT: Initial Type Tests (ITT) are performed on a representative sample of the product to prove that it complies with the performance characteristics set out in the relevant product standard and that the performance declarations made by the manufacturer in the DoP represent the true behaviour of the product.

Notified Body: an organisation that has been accredited by a member state to assess whether a product meets certain preordained standards. Assessment can include inspection and examination of a product, its design and manufacture. A list of Notified Bodies in the UK can be found at http://ec.europa.eu/enterprise/newapproach/nando/index.cfm?fuseaction=country.notifiedbody&cou_id=826.

REACH: is a European Union regulation concerning the Registration, Evaluation, Authorisation and restriction of Chemicals (REACH). It came into force on 1st June 2007 it aims include the protection of human health and the environment from the use of chemicals and to make the people who place chemicals on the market (manufacturers and importers) responsible for understanding and managing the risks associated with their use.

UKAS: the United Kingdom Accreditation Service (UKAS) is the sole national accreditation body recognised by government to assess, against internationally agreed standards, organisations that provide certification, testing, inspection and calibration services. Accreditation by UKAS demonstrates the competence, impartiality and performance capability of these evaluators.