CE Marking of Glass Products – Theory and Practice: How to Interpret the hENs and Apply Them to Your Production

Summary of the presentation

Glass Processing Days 2005

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Content

- The Construction Product Directive (CPD)
- Systems of Attestation of Conformity
- hEN's and other types of European standards
- Initial type testing, factory production control and involvement of Notified Bodies
- Product descriptions, system description and technical files
- Examples of 'How to comply'.
- How to prepare a CE Label and accompanying information
- Question and answer. This can cover any topic regarding compliance with the hENs.

The CPD

The Construction Products Directive

(89/106/EC)

The framework of the CPD

- Break down technical barriers to trade :
  - a system of harmonised technical specifications,
  - an agreed system of attestation of conformity for each product family,
  - a framework of notified bodies,
  - the CE marking of products.

The CPD

- 6 Essential requirements
  - mechanical resistance and stability
  - safety in case of fire
  - hygiene, health, environment
  - safety in use
  - sound protection
  - energy insulation

The CPD – Manufacturer shall :

- The manufacturer shall be responsible for the attestation that products are in conformity with the requirements of a technical specification.
- The evaluation of conformity of a product is dependent on:
  - (a) the manufacturer having an Initial Type test performed to ensure that the product conforms with the relevant technical specifications
  - (b) the manufacturer having a factory production control (FPC) system to ensure that production conforms with the relevant technical specifications

System of attestation of conformity

- Defines the degree of involvement of third parties in assessing the conformity of the product,
- for each intended use a unique attestation system has been decided,
- to avoid barrier to trade arising from different attestation levels required by MS's for the same product for the same intended use.

Attestation systems and tasks

- Six systems of attestation are used under the CPD :
  - System 1+ - Product conformity certification with audit testing.
  - System 1 - Product conformity certification without audit testing.
  - System 2+ - Factory Production Control (FPC) certification with continuous surveillance.
  - System 2 - Factory Production Control (FPC) certification without surveillance.
  - System 3 - Initial Type Testing (ITT).
  - System 4 - Manufacturer's tasks only.

Attestation tasks under the CPD

Glass products

ATTESTATION OF CONFORMITY	1 +	1	2 +	2	3	4
Task for the manufacturer						
Factory production control	X	X	X	X	X	X
Further testing of samples taken at factory according to prescribed test	X	X	X			
Initial type testing			X	X		X
Task for the notified body						
Initial type testing	X	X			X	
Certification of FPC	X	X	X	X		
Surveillance of FPC	X	X	X			
Audit testing of samples	X					

X = task required

Roles of Manufacturer and Notified Body under the Systems of Attestation Applicable to Glass Products under Mandate M135

SYSTEM OF ATTESTATION	ROLE OF MANUFACTURER		ROLE OF NOTIFIED BODY			
	Factory production Control (FPC)	Initial Type Testing (ITT)	Inspection of FPC Docs	ITT	Initial Inspection of FPC	Continuous surveillance
1	X		X	X	X	X
3	X			X		
4	X	X				

Relationship between Intended Use and System of Attestation for Glass Products

SYSTEM OF ATTESTATION	INTENDED USE
1	Fire Resistance, Bullet Resistance, Explosion Resistance
3	Reaction to Fire, External Fire Performance, "Safety-in-use" risks, Energy Conservation, Noise Reduction
4	Anything Else

Construction Product directive role of CEN

- CEN to draft standards for construction products to achieve the 6 essential requirements for buildings.
- European standards to replace any corresponding national standards.

A system of harmonised technical specifications

- harmonised European product standards (hENs),
- to cover all the performance characteristics required by regulations in any Member State,
- manufacturers can be sure that the methods of test and methods of declaration of results will be the same for any Member-State.

Annex ZA of harmonised Standards

- Contains a list the regulated requirements which in turn may refer to separate supporting standards such as test standards.
- Is a checklist for CE marking from which the manufacturer can see all the possible requirements of his product and how they can be met.
- The parts of the standard which are not required by regulations are termed the voluntary or non-harmonised parts of the standard.

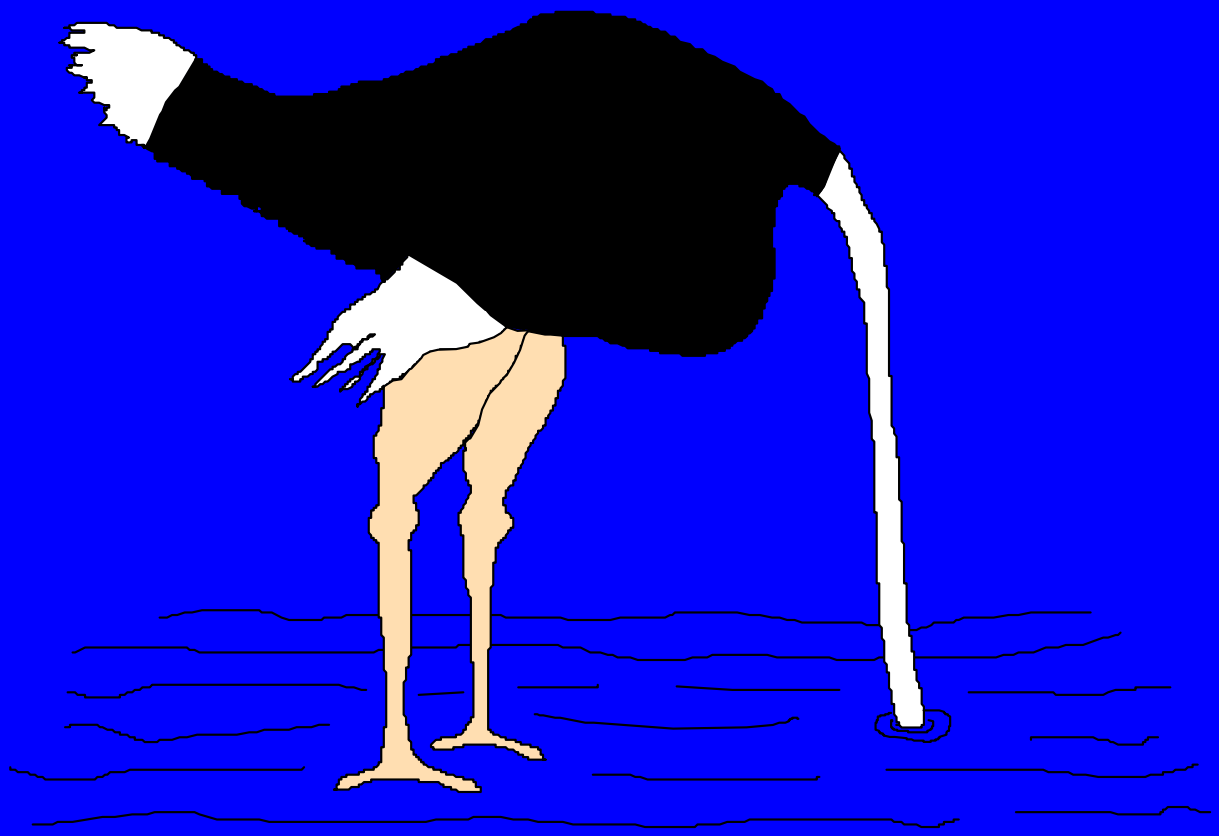
Manufacturer's declaration of conformity and technical file

- To complete a "Declaration of conformity",
- keep a technical file concerning the product (depending on the level required) :
  - certificate of product conformity;
  - FPC certificate;
  - test laboratory reports or certificates;
  - own test results;
  - any other relevant info...

Evaluation of Conformity

How to prove the product meets the harmonised European standards (hEN) ?

Role of the Manufacturer in the preparation to CE marking...



...or

Preparations for CE marking must focus on four targets:

- Draw up a product description to show the product conforms;
- Perform Initial Type Tests following EN standards;
- Align factory production controls with EN standards;
- Prepare all commercial issues (labelling, invoices, customer information).

Role of the Manufacturer

- What product(s) are you selling?
- Is it a ‘Construction’ product?
- What is its intended purpose?
- Is the system of attestation
  - Level 4?
  - Level 3?
  - Level 1?

Role of the Manufacturer

- Have you assessed what ITT will be required?
- What is the range of product to be covered?
- Have you identified a notified body?

Role of the Manufacturer

- Have you assessed what FPC will be required?
- Have you allowed sufficient resource to adequately cover it?
- Have you identified a notified body? (in the case of attestation level 1)

The Notified Bodies

The Notified Bodies

- Free choice of manufacturers to select a Notified Body within EEA, competent for required tasks.
- Contractual arrangements between manufacturer and Notified Body.
- Responsibilities of public nature :
  - granting of certificates, withdrawal,
  - request of further information if necessary,
  - conduct of unannounced visits in the case of quality assurance, if necessary,
  - supply information to competent authorities.

Roles Notified Body under the Systems of Attestation Applicable to Glass Products under Mandate M135

SYSTEM OF ATTESTATION	INTENDED USE	ROLE OF NOTIFIED BODY			
		Inspection of FPC Docs	ITT	Initial Inspection of FPC	Continuous surveillance
1	Fire Resistance, Bullet Resistance, Explosion Resistance	X	X	X	X
3	Reaction to Fire, External Fire Performance, “Safety-in-use” risks, Energy Conservation, Noise Reduction		X		
4	Anything Else				

The Notified Bodies
Important remarks

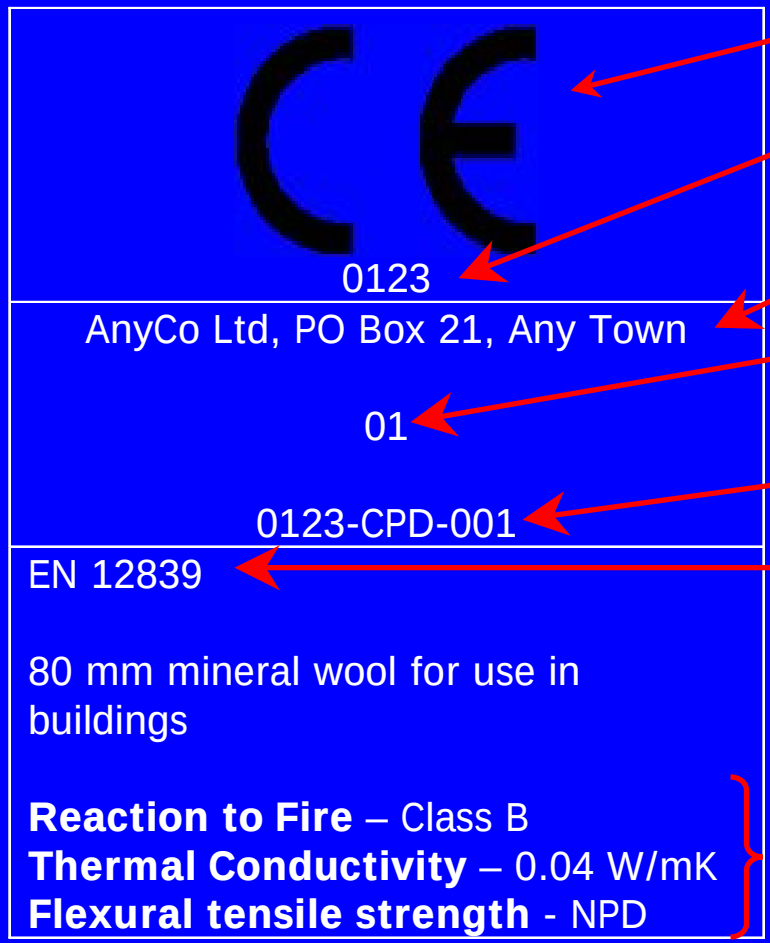
- Notified bodies have to follow the standards **as published**.
- The actions of the Notified Bodies do **NOT** release the manufacturer of any of his responsibilities.
- The manufacturer has the **free choice** of Notified Body.
- A notified body is notified by 1 Member State but can act for the **whole EU** $\Rightarrow$ only 1 certificate/test report for the whole of the EU.

The CE Marking

Responsibility for Marking

- The one who puts the products on the market :
  - the manufacturer or,
  - his agent or,
  - authorised representative established within the UE.

CE Marking



- CE logo
- Commission Notified Body Number
- Manufacturer address
- Last two digit of year of affixing CE marking
- Certificate Number
- Product Standard Number
- Product data not in Standards

CE Marking Does Mean

- That the product satisfies all the provisions of the CPD (and other applicable marking directives).
- That the product complies with European technical specifications and has been subject to appropriate conformity assessment procedures.
- That the product is fit for purpose as defined by Article 2(1) of the CPD.

CE Marking Does Not Mean

- A mark of origin.
- A mark of quality in the traditional sense.
- Related to aspects outside the Essential Requirements (i.e. voluntary characteristics such as colour, appearance).
- A license to use the product in all works in all Member States.

Examples of CE Marking

Example of CE Marking

CE 0123	LOGO of Producer	AnyComp Ltd P.O. Box 12 AnyTown AnyCountry Tel.:+12 34 56 78 90 Fax.: +12 34 56 78 12
	Insulating Glass Unit – Fire secure in buildings and constructions	

TYPE	Safenickname - High	EN 1279-5
BR/LxH	720 X 1700 mm	Shape: rectangular
Glass Type(s), thickness and cavity		FT6/12/(FL5/2/FS5)
Resistance to Fire		EI 30
Reaction to fire		A*
External fire behaviour		
Dangerous substances		Not releasing
Bullet Resistance		NPD
Explosion resistance		NPD
Burglar resistance		NPD
Pendulum body impact resistance		1A1
Resistance to temperature differentials		Glass Types
Resistance to wind, snow, etc (glass)		Dimensions, glass types
Resistance to wind (structural sealant edge)		1,4 N/mm²
Airborne sound insulation		Rw= 40 dBA
Light transmittance		τ = 0.71
Light reflectance		ρ = 0.15
Solar factor		g = 0.6
Thermal resistance		U = 1.5 W/(m².K)

Example of Declaration of conformity

Must be drafted in the language of the country of intended use

Declaration of conformity – Number 01234

AnyComp Ltd P.O. Box 12 AnyTown ACountry

declares that the Product:

Insulating glass unit – Firesafe

manufactured by Aplant, P.O. Box 23, Btown, Bcountry,

intended to be used in buildings and constructions,
- with the following characteristics:

BR/LxH 720 X 1700 mm	Shape: rectangular
Glass Type(s), thickness and cavity	FT6/12/(FL5/2/FS5)
Resistance to Fire	EI 30
Reaction to fire	A*
External fire behaviour	
Dangerous substances	Not releasing
Bullet Resistance	NPD
Explosion resistance	NPD
Burglar resistance	NPD
Pendulum body impact resistance	1A1
Resistance to temperature differentials	Glass Types
Resistance to wind, snow,etc (glass)	Dimensions, glass types
Resistance to wind (structural sealant edge)	1,4 N/mm²
Airborne sound insulation	Rw= 40 dBA
Light transmittance	τ = 0.71
Light reflectance	ρ = 0.15
Solar factor	g = 0.6
Thermal resistance	U = 1.5 W/(m².K)

conforms with EN 1279-5, Annex ZA

Certi**ficates Number 7890 applies**

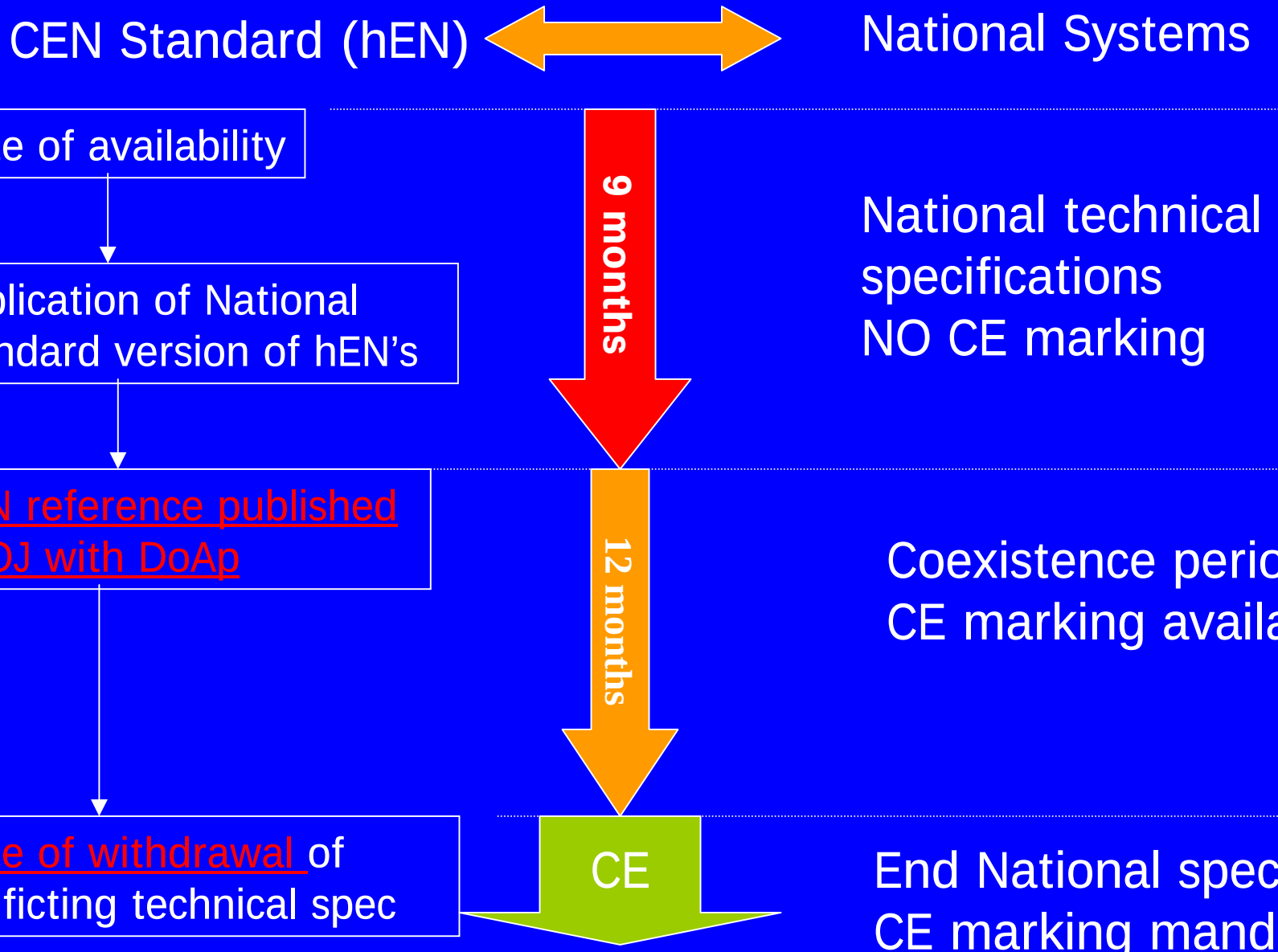
Date : day/month/year

(Signature)

John Smith, General manager of AnyComp Ltd

Transitional Arrangements

TRANSITIONAL ARRANGEMENTS



CE marking start…

- Basic & special glass products (float, cast…)
- Thermally toughened
- Chemically toughened
- Heat strengthened
- Coated glass

September 2005

- Laminated glass
- Insulating glass
- Heat soaked thermally toughened

March 2006 ?

Remaining barriers after CPD

- National, voluntary quality marks;
- insurance requirements (not mandatory);
- guidance documents, design codes, etc;
- standard wordings in specifications/ contracts;
- knowledge and practice of designers and inspectors;
- some prescriptive requirements in building regulations;
- “pure” national consumer preferences.

Product Description – System description – Technical Files

Meaning of these terms

Product Description - Definition

- Document that details the relevant parameters, e.g. process conditions, structure, etc., for defining a product that complies with the standard. It includes specific reference(s) to characteristics that are modified by the production process.

- EN 12150-2, EN 14449, etc.

Product Description

- The product description must initially be specific to the product range(s), manufacturing line and site.

- However, it may be made applicable to multiple lines and/or sites (see clause 5.2.1.1) if the appropriate systems are in place.

System Description – Definition - for Insulating Glass Units only

- Description of components and the edge seal of the insulating glass unit in terms relevant to identification, and in terms relevant to edge seal performance
- EN 1279-1

Technical File

- Manufacturer's detailed documentation.
- Covers :
  - Product description
  - System descrition (if appropriate)
  - Factory Production Control manual
  - Initial Type Test results
  - Certificate of Conformity (if appropriate)
  - Declaration of Conformity

For Further Informations

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