Introduction

This guide has been written to help users and specifiers of wood based panels to understand the documentation and labelling that should accompany (on a website, e-mail or physically) wood based panels that bear the CE marking.

Drawing up of a declaration of performance (DoP) and consequent CE marking is required by the European Construction Products Regulations 305/2011 (CPR) for any product placed on the European market for use in construction that is covered by a European harmonised standard (European standard with an Annex ZA allowing CE marking); one such product group are panel products that falls within the scope of EN 13986 (the wood based panels harmonised standard). According to the CPR a 'construction product' is defined as "any product or kit which is produced and placed on the market for incorporation in a permanent manner in construction works or parts thereof and the performance of which has an effect on the performance of the construction works with respect to the basic requirements for construction works;" so in short this means any product that is important to a structure that has a bearing on aspects such as structural performance, fire, thermal, acoustics etc… that is fixed in such a way that removing it would change how the building performs.

Wood based panels that are not required to bear the CE mark are those used in non-construction applications such as furniture. It is worth noting that sometimes non-construction can get confused with non-structural, but construction products and indeed wood based panels can be both structural and non-structural.

Declaration of performance (DoP)

A declaration of performance (DoP) is a legal document that is the manufacturer's declaration of the performance of a product, therefore all product placed on the market that refers to the DoP must meet or exceed those declared performances. The DoP is drawn up, the CE marking is affixed and user information is supplied by the person who first places a wood based panel on the European market, for manufacturers within the European Union, they are the first placers. However importers of product from outside of the EU also have responsibilities to ensure that the manufacturers they are buying from have carried out all the necessary testing and controls and that all the DoP, CE marking and user information are present and correct before they pace it on the market.

CE marking

The letters "CE" are the abbreviation of French phrase "Conformité Européene" which literally means "European Conformity". The CE marking is a symbol of free marketability in the European Economic Area (Internal Market). CE marking can be affixed only once a DoP has been drawn up and signed, the CPR has a set number of criteria that is required by a CE mark, this guide gives examples showing what is required by the CE mark and also for any on-product labelling.

Examples with explanations

Example 1 – structural wood based panel (particleboard)

DECLARATION OF PERFORMANCE

No. **e.g. (xyzDoPv1)**

Manufacturer:-

Any company

Any street

Anywhere

Any post code

The number of the DoP is critical for the link between the CE mark and the DoP. This number should change if there is a change to the information in the DoP.

The unique ID code is important for finding the essential characteristics and their values that relate to that particular thickness and grade e.g. P5 18mm.

The AVCP gives the rules for assessment. In this case 2+ is applicable as it is a structural product and the FPC must be certified.

Unique identification code of the product type	Intended use	Systems of AVCP	Notified Body	Harmonised standard
P5 <3mm to >40mm[1]	Internal use as structural components in humid conditions	2+	1234	EN 13986:2004 + A1:2015

[1] The unique identification code of the product-type is a combination of the technical class and the individual product's nominal thickness.

The notified body number relates to the organisation who has certified the factory production control system

Declared performance [covering a range of product-types P5 <3mm to >40mm[1]]

As an example 18mm P5 would have the properties from this column

Essential characteristics	Performance									
	Thickness (mm)									
	<3	3 to 4	>4 to 6	>6 to 10	>10 to 13	>13 to 20	>20 to 25	>25 to 32	>32 to 40	>40
Characteristic strength (N/mm²)*										
- **Bending f_m**	NPD	NPD	NPD	15.0	15.0	13.3	11.7	10.0	8.3	7.5
- **Compression f_c**	NPD	NPD	NPD	12.7	12.7	11.8	10.3	9.8	8.5	7.8
- **Tension f_t**	NPD	NPD	NPD	9.4	9.4	8.5	7.4	6.6	5.6	5.6
- **Panel Shear f_v**	NPD				7.0	6.5				
- **Planar shear f_r**	NPD				1.9	1.7				
Mean stiffness (MOE) (N/mm²)*										
- **Tension E_t**	NPD				2000	1900				
- **Compression E_c**	NPD				2000	1900				
- **Bending E_m**	NPD	NPD	NPD	3500	3500	3300				
- **Panel Shear G_v**	NPD	NPD	NPD	960	960	930	860	750	690	660
Characteristic strength under point load $F_{max,k}$ (kN) *(for floors and roofs)*	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Mean stiffness under point load, R (N/mm) *(for floors and roofs)*	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Characteristic serviceability strength under point load $F_{ser,k}$ (kN) *(for floors and roofs)*	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD

NPD means No Performance Determined, this is used where no claim is made for that particular characteristic

If this were a generic flooring grade product it would have information on point load and soft body impact properties and could have a column of its own for the joist spans it is applicable to.

Racking resistance (*for walls*) (N), Characteristic Racking Strength $F_{Rd,max,k}$ *(for walls)*	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Racking resistance (*for walls*) (N/mm), Mean Stiffness R_{mean}	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Embedment strength (N/mm^2)	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Soft Body Impact resistance										
Floor/roofs				NPD	NPD	NPD	NPD	NPD	NPD	NPD
Walls										
Reaction to fire (Without airgap mounted to class A1 orA2-s1, d0 product with density 10kg/m^3 or D-s2, d2 products with minimum density 400kg/m^3)**	NPD	NPD	NPD	NPD	D-s2,d0	D-s2,d0	D-s2,d0	D-s2,d0	D-s2,d0	D-s2,d0
Water vapour permeability μ	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Release of formaldehyde	E1	E1	E1	E1	E1	E1	E1	E1	E1	E1
Release (content) of pentachlorophenol (PCP)	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm
Airborne sound insulation (surface mass) (R)	NPD	NPD	NPD	NPD	NPD		NPD	NPD	NPD	
Sound absorption Frequency range 250Hz to 500Hz **(α)******	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	
Sound absorption Frequency range 1000Hz to 2000Hz **(α)******	0.25	0.25	0.25	0.25	0.25		0.25	0.25	0.25	
Thermal conductivity λ	NPD	NPD	NPD	NPD	NPD		NPD	NPD	NPD	
Air permeability V_0 (m^3/h)	NPD	NPD	NPD	NPD	NPD		NPD	NPD	NPD	
Durability										
Internal bond (N/mm^2)	0.50	0.50	0.45	0.45	0.45		0.35	0.30	0.25	
Swelling in thickness (%)	16	16	14	13	11		10	9	9	
Internal bond after cyclic test (N/mm^2)	0.30	0.30	0.30	0.25	0.25	0.22	0.20	0.17	0.15	0.12
Swelling in thickness after cyclic test (%)	12	12	12	12	12	12	11	10	9	9
Moisture resistance Internal bond after boil test (%)	0.15	0.15	0.15	0.15	0.15	0.14	0.12	0.11	0.10	0.09
Mechanical (creep k_{def})*** **service class 1**	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
Mechanical (creep k_{def})*** **service class 2**	3	3	3	3	3	3	3	3	3	3

Mechanical (duration of load k_{mod})***	**Action mode**				
	Permanent	**Long Term**	**Medium Term**	**Short Term**	**Instantaneous**
Service class 1	0.30	0.45	0.65	0.85	1.10
Service class 2	0.20	0.30	0.45	0.60	0.80
Biological	**Use classes 1 & 2**				

Reaction to fire class should be given with end use conditions

Some properties may be claimed (NPD) on the DoP but generic non-manufacturer specific information can be found in standards such as EN 13986 or guidance documents such as Panel Guide (see WPIF website).

- Taken from EN 12369-1

**reaction to fire classes from Table 1 of Commission Decision 2003/43/EC of January 2003 (OJEU L13 of 18.1.2003) corrected by Corrigendum (OJEU L33 of 8.2.2003) and amended by Commission decision 2007/348/EC of May 2007 (OJEU L131 of 23-05-2007); also reproduced in Table 8 of EN 13986:2004+A1:2015 and installed according to CEN/TR 12872

**Taken from Eurocode 5 (EN 1995-1-1)

**** Taken from EN 13986:2004+A1:2015

The performance of the product identified is in conformity with the declared performances.

This declaration of performance is issued, in accordance with regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

.....*Joe Bloggs*.....

At.....*his factory*.....on.....*1/9/14*.....

.....*signature*.....

As the DoP is a legal document it has to be signed and dated as being correct for the product supplied with the same DoP number on the CE marking. It is this document that would be needed in case of any dispute about the performance of the product

Example 2 – non-structural wood based panel (MDF)

DECLARATION OF PERFORMANCE

No. **e.g. (xyzDoPv1)**

Manufacturer:-

Any company

Any street

Anywhere

Any post code

Note in the case of a non-structural panel product there is no involvement of a notified body

Unique identification code of the product type	Intended use	Systems of AVCP	Notified Body	Harmonised standard
MDF 1.8mm to >45mm *	Internal use as non-structural components in dry conditions	4	Not applicable	EN 13986:2004+A1:2015
*The unique identification code of the product-type is a combination of the technical class and the individual product's nominal thickness.				

Declared performance **[covering a range of product-types MDF 1.8mm to >45mm*]**

Note the lack of structural essential characteristics

Reaction to fire class should be given with end use conditions

Essential characteristics	Performance								
	Thickness(mm)								
				>6 to 9	>9 to 12	>12 to 19	>19 to 30	<>30 to 45	>45
Reaction to fire (Without airgap mounted to class A1 orA2-s1, d0 product with density 10kg/m³ or D-s2, d2 products with minimum density 400kg/m³)**	NPD	NPD	NPD	NPD	D-s2,d0	D-s2,d0	D-s2,d0	D-s2,d0	D-s2,d0
Water vapour permeability (μ)	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Release of formaldehyde	E1	E1	E1	E1	E1	E1	E1	E1	E1
Release (content) of pentachlorophenol (PCP)	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm
Airborne sound insulation (surface mass) ®	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Sound absorption Frequency range 250Hz to 500Hz **(α)**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sound absorption Frequency range 1000Hz to 2000Hz **(α)**	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Thermal conductivity λ	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Air Permeability V_0 (m³/h)	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Durability									
Internal bond (N/mm²)	0.65	0.65	0.65	0.65	0.60	0.55	0.55	0.50	0.50
Swelling in thickness (%)	45	35	30	17	15	12	10	8	6
Biological	**Use class 1**								

**reaction to fire classes from Table 1 of Commission Decision 2003/43/EC of January 2003 (OJEU L13 of 18.1.2003) corrected by Corrigendum (OJEU L33 of 8.2.2003) and amended by Commission decision 2007/348/EC of May 2007 (OJEU L131 of 23-05-2007); also reproduced in Table 8 of EN 13986:2004+A1:2015 and installed according to CEN/TR 12872.

The performance of the product identified is in conformity with the declared performances.

This declaration of performance is issued, in accordance with regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

.....*Joe Bloggs*.....

At.....*his factory*.....on.....*1/9/14*.....

.....*signature*.....

On product labelling (in the case of some non-structural panels on the packaging):

This label will help identify the product as supplied to ensure the correct product is used as specified. In this case 18mm P4 chipboard. All of the information given in this example should be on the product. The label is not generally stuck to the product it is most likely to be printed directly onto the surface of the product as a string of information (see example below).

On the label there is a link to the DoP (the legal document) so that if there is any future need to identify who supplied the product and the properties that were claimed, they can be found on the manufacturer's website or on request. It is the manufacturer's legal responsibility to make this information available for 10 years after it was placed on the market.

The one piece of information that will not be on the labelling in the case of a non-structural wood based panel (without an enhanced reaction to fire claim) is a Notified Body number, this is because for non-structural panels there is no notified body involvement. All other information shall be present.

	CE symbol
Manufacturer logo	Logo and/ or name and address of manufacturer
DoP ref: (xyzDoPv1)	Declaration of performance reference
EN 13986	Reference to harmonised standard
1234	Notified body number
E1	Formaldehyde classification
P4	Product technical class (unique ID code of product type, summary of performance and intended use)
18mm	Thickness (aids further identification of the product as part of the unique identification code)

Could also be presented like this:-

'CE manufacturer's logo DoP ref EN 13986 1234 E1 P4 18mm '

Example CE mark

The CE mark isn't as a matter of course printed onto the panels or packaging due to the large amount of information it contains. It has exactly the same information as the on-product label and the DoP. The CE mark will be supplied on request by the supplier if it was not given upon purchase.

CE

Manufacturer name and address or logo

DoP ref: (xyzDoPv1)

EN 13986

1234

08

P5

Internal use as structural components in humid conditions

Essential characteristics	**Performance**									
	Thickness(mm)									
	<3	**3 to 4**	**>4 to 6**	**>6 to 10**	**>10 to 13**	**>13 to 20**	**>20 to 25**	**>25 to 32**	**>32 to 40**	**>40**
***Characteristic Strength (N/mm²)**										
- **Bending** f_m	NPD	NPD	NPD	15.0	15.0	13.3	11.7	10.0	8.3	7.5
- **Compression** f_c	NPD	NPD	NPD	12.7	12.7	11.8	10.3	9.8	8.5	7.8
- **Tension** f_t	NPD	NPD	NPD	9.4	9.4	8.5	7.4	6.6	5.6	5.6
- **Panel Shear** f_v	NPD	NPD	NPD	7.0	7.0	6.5	5.9	5.2	4.8	4.4
- **Planar shear** f_r	NPD	NPD	NPD	1.9	1.9	1.7	1.5	1.3	1.2	1.0
Mean Stiffness (MOE) (N/mm²)										
- **Tension** E_t	NPD	NPD	NPD	2000	2000	1900	1800	1500	1400	1300
- **Compression** E_c	NPD	NPD	NPD	2000	2000	1900	1800	1500	1400	1300
- **Bending** E_m	NPD	NPD	NPD	3500	3500	3300	3000	2600	2400	2100
- **Panel Shear** G_v	NPD	NPD	NPD	960	960	930	860	750	690	660
Release of formaldehyde	E1	E1	E1	E1	E1	E1	E1	E1	E1	E1
Release (content) of pentachlorophenol (PCP)	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm
Sound absorption Frequency range 250Hz to 500Hz **(α)**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sound absorption Frequency range 1000Hz to 2000Hz **(α)**	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Durability										
Internal bond (N/mm²)	0.50	0.50	0.45	0.45	0.45	0.45	0.40	0.35	0.30	0.25
Swelling in thickness (%)	16	16	14	13	11	10	10	10	9	9
Internal bond after cyclic test (N/mm²)	0.30	0.30	0.30	0.25	0.25	0.22	0.20	0.17	0.15	0.12
Swelling in thickness after cyclic test (%)	12	12	12	12	12	12	11	10	9	9
Moisture resistance	0.15	0.15	0.15	0.15	0.15	0.14	0.12	0.11	0.10	0.09

Internal bond after boil test (%)										
Mechanical (duration of load k_{def}) **service class 1**	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
Mechanical (duration of load k_{def}) **service class 2**	3	3	3	3	3	3	3	3	3	3
Mechanical (creep k_{mod}) **Service class1- medium term action**	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Mechanical (creep k_{mod}) **Service class 2- medium term action**	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
Biological	**Use classes 1 & 2**									