

Commission Decision of 17 January 2003 establishing the classes of reaction-to-fire performance for certain construction products (notified under document number C(2002) 4807) (Text with EEA relevance) (2003/43/EC)

COMMISSION DECISION

of 17 January 2003

establishing the classes of reaction-to-fire performance for certain construction products

(notified under document number C(2002) 4807)

(Text with EEA relevance)

(2003/43/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Council Directive 89/106/EEC of 21 December 1988, on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products<sup>(1)</sup>, as amended by Directive 93/68/EEC<sup>(2)</sup>, and in particular Article 20(2) thereof,

Whereas:

- (1) Directive 89/106/EEC envisages that in order to take account of the different levels of protection for construction works at national, regional or local level, it may be necessary to establish in the interpretative documents classes corresponding to the performance of products in respect of each essential requirement. Those documents have been published as the

Communication of the Commission with regard to the interpretative documents of Council Directive 89/106/EEC<sup>(3)</sup>

- (2) With respect to the essential requirement of safety in the event of fire, interpretative document No 2 lists a number of interrelated measures which together define the fire safety strategy to be variously developed in the Member States.
- (3) Interpretative document No 2 identifies one of those measures as the limitation of the generation and spread of fire and smoke within a given area by limiting the potential of construction products to contribute to the full development of a fire.
- (4) The level of that limitation may be expressed only in terms of the different levels of reaction-to-fire performance of the products in their end-use application.
- (5) By way of a harmonised solution, a system of classes was adopted in Commission Decision 2000/147/EC of 8 February 2000 implementing Council Directive 89/106/EEC as regards the classification of the reaction-to-fire performance of construction products<sup>(4)</sup>.

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**Status:** Point in time view as at 23/05/2007.

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**Changes to legislation:** There are outstanding changes not yet made to Commission Decision of 17 January 2003 establishing the classes of reaction-to-fire performance for certain construction products (notified under document number C(2002) 4807) (Text with EEA relevance) (2003/43/EC). Any changes that have already been made to the legislation appear in the content and are referenced with annotations. (See end of Document for details)

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- (6) In the case of certain wood-based panels, it is necessary to use the classification established in Decision 2000/147/EC.
- (7) The reaction-to-fire performance of many construction products and/or materials, within the classification provided for in Decision 2000/147/EC, is well established and sufficiently well known to fire regulators in Member States that they do not require testing for this particular performance characteristic.
- (8) The measures provided for in this Decision are in accordance with the opinion of the Standing Committee on Construction,

HAS ADOPTED THIS DECISION:

*Article 1*

The construction products and/or materials which satisfy all the requirements of the performance characteristic 'reaction-to-fire' without need for further testing are set out in the Annex.

*Article 2*

The specific classes to be applied to different construction products and/or materials, within the reaction-to-fire classification adopted in Decision 2000/147/EC, are set out in the Annex to this Decision.

*Article 3*

Products shall be considered in relation to their end-use application, where relevant.

*Article 4*

This Decision is addressed to the Member States.

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## ANNEX

The tables set out in this annex list construction products and/or materials which satisfy all the requirements for the performance characteristic reaction to fire without need for testing.

[<sup>F1</sup>TABLE 1

### Classes of reaction to fire performance for wood-based panels

Product	EN product standard	End use condition <sup>f</sup>	Minimum density(kg/m <sup>3</sup> )	Minimum thickness(mm)	Class <sup>g</sup> (excluding floorings)	Class <sup>h</sup> (floorings)
Cement-bonded particleboard <sup>a</sup>	EN 634-2	without an air gap behind the panel	1 000	10	B-s1, d0	B <sub>fl</sub> -s1
Fibreboard, hard <sup>a</sup>	EN 622-2	without an air gap behind the wood-based panel	900	6	D-s2, d0	D <sub>fl</sub> -s1
Fibreboard, hard <sup>c</sup>	EN 622-2	with a closed air gap not more than 22 mm behind the wood-based panel	900	6	D-s2, d2	—
Particleboard <sup>d, e</sup>	EN 312	without an air gap behind the wood-based panel	600	9	D-s2, d0	D <sub>fl</sub> -s1
Fibreboard, hard and medium <sup>a, b, e</sup>	EN 622-2 EN 622-3					
MDF <sup>a, b, e</sup>	EN 622-5					

**a** Mounted without an air gap directly against class A1 or A2-s1, d0 products with minimum density 10 kg/m<sup>3</sup> or at least class D-s2, d2 products with minimum density 400 kg/m<sup>3</sup>.

**b** A substrate of cellulose insulation material of at least class E may be included if mounted directly against the wood-based panel, but not for floorings.

**c** Mounted with an air gap behind. The reverse face of the cavity shall be at least class A2-s1, d0 products with minimum density 10 kg/m<sup>3</sup>.

**d** Mounted with an air gap behind. The reverse face of the cavity shall be at least class D-s2, d2 products with minimum density 400 kg/m<sup>3</sup>.

**e** Veneered, phenol- and melamine-faced panels are included for class excl. floorings.

**f** A vapour barrier with a thickness up to 0,4 mm and a mass up to 200 g/m<sup>2</sup> can be mounted in between the wood-based panel and a substrate if there are no air gaps in between.

**g** Class as provided for in Table 1 of the Annex to Decision 2000/147/EC.

**h** Class as provided for in Table 2 of the Annex to Decision 2000/147/EC.]

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MDF <sup>a, b, e</sup>	EN 300					
Plywood <sup>a, b, e</sup>	EN 636	-“-	400	9	D-s2, d0	D <sub>fl</sub> -s1
Solid wood panel <sup>a, b, e</sup>	EN 13353			12		
Flaxboard <sup>a, b, e</sup>	EN 15197	-“-	450	15	D-s2, d0	D <sub>fl</sub> -s1
Particleboard <sup>b, e</sup>	EN 312	with a closed or an open air gap not more than 22 mm behind the wood-based panel	600	9	D-s2, d2	—
Fibreboard, hard and medium <sup>c, e</sup>	EN 622-2 EN 622-3					
MDF <sup>c, e</sup>	EN 622-5					
OSB <sup>c, e</sup>	EN 300					
Plywood <sup>c, e</sup>	EN 636	-“-	400	9	D-s2, d2	—
Solid wood panel <sup>c, e</sup>	EN 13353			12		
Particleboard <sup>b, e</sup>	EN 312	with a closed air gap behind the wood-based panel	600	15	D-s2, d0	D <sub>fl</sub> -s1
Fibreboard, medium <sup>d, e</sup>	EN 622-3					
MDF <sup>d, e</sup>	EN 622-5					
OSB <sup>d, e</sup>	EN 300					
Plywood <sup>d, e</sup>	EN 636	-“-	400	15	D-s2, d1	D <sub>fl</sub> -s1
Solid wood panel <sup>d, e</sup>	EN 13353				D-s2, d0	
Flaxboard <sup>d, e</sup>	EN 15197	-“-	450	15	D-s2, d0	D <sub>fl</sub> -s1
Particleboard <sup>b, e</sup>	EN 312	with an open air gap behind	600	18	D-s2, d0	D <sub>fl</sub> -s1

**a** Mounted without an air gap directly against class A1 or A2-s1, d0 products with minimum density 10 kg/m<sup>3</sup> or at least class D-s2, d2 products with minimum density 400 kg/m<sup>3</sup>.

**b** A substrate of cellulose insulation material of at least class E may be included if mounted directly against the wood-based panel, but not for floorings.

**c** Mounted with an air gap behind. The reverse face of the cavity shall be at least class A2-s1, d0 products with minimum density 10 kg/m<sup>3</sup>.

**d** Mounted with an air gap behind. The reverse face of the cavity shall be at least class D-s2, d2 products with minimum density 400 kg/m<sup>3</sup>.

**e** Veneered, phenol- and melamine-faced panels are included for class excl. floorings.

**f** A vapour barrier with a thickness up to 0,4 mm and a mass up to 200 g/m<sup>2</sup> can be mounted in between the wood-based panel and a substrate if there are no air gaps in between.

**g** Class as provided for in Table 1 of the Annex to Decision 2000/147/EC.

**h** Class as provided for in Table 2 of the Annex to Decision 2000/147/EC.]

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Fibreboard, medium <sup>d, e</sup>	EN 622-3	the wood-based panel				
MDF <sup>d, e</sup>	EN 622-5					
OSB <sup>d, e</sup>	EN 300					
Plywood <sup>d, e</sup>	EN 636	-“-	400	18	D-s2, d0	D <sub>fl</sub> -s1
Solid wood panel <sup>d, e</sup>	EN 13353					
Flaxboard <sup>d, e</sup>	EN 15197	-“-	450	18	D-s2, d0	D <sub>fl</sub> -s1
Particleboard	EN 312	any	600	3	E	E <sub>fl</sub>
OSB <sup>e</sup>	EN 300					
MDF <sup>e</sup>	EN 622-5	-“-	400	3	E	E <sub>fl</sub>
			250	9	E	E <sub>fl</sub>
Plywood <sup>e</sup>	EN 636	-“-	400	3	E	E <sub>fl</sub>
Fibreboard, hard <sup>e</sup>	EN 622-2	-“-	900	3	E	E <sub>fl</sub>
Fibreboard, medium <sup>e</sup>	EN 622-3	-“-	400	9	E	E <sub>fl</sub>
Fibreboard, soft	EN 622-4	-“-	250	9	E	E <sub>fl</sub>

**a** Mounted without an air gap directly against class A1 or A2-s1, d0 products with minimum density 10 kg/m<sup>3</sup> or at least class D-s2, d2 products with minimum density 400 kg/m<sup>3</sup>.

**b** A substrate of cellulose insulation material of at least class E may be included if mounted directly against the wood-based panel, but not for floorings.

**c** Mounted with an air gap behind. The reverse face of the cavity shall be at least class A2-s1, d0 products with minimum density 10 kg/m<sup>3</sup>.

**d** Mounted with an air gap behind. The reverse face of the cavity shall be at least class D-s2, d2 products with minimum density 400 kg/m<sup>3</sup>.

**e** Veneered, phenol- and melamine-faced panels are included for class excl. floorings.

**f** A vapour barrier with a thickness up to 0,4 mm and a mass up to 200 g/m<sup>2</sup> can be mounted in between the wood-based panel and a substrate if there are no air gaps in between.

**g** Class as provided for in Table 1 of the Annex to Decision 2000/147/EC.

**h** Class as provided for in Table 2 of the Annex to Decision 2000/147/EC.]

### Textual Amendments

- F1** Substituted by [Commission Decision of 15 May 2007 amending Decision 2003/43/EC establishing the classes of reaction-to-fire performance for certain construction products as regards wood-based panels \(notified under document number C\(2007\) 2045\) \(Text with EEA relevance\) \(2007/348/EC\)](#).

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## Classes of reaction — to — fire performance of gypsum plasterboards

Gypsum plasterboard	Nominal board thickness (mm)	Gypsum core		Paper grammage <sup>a</sup> (g/m <sup>2</sup> )	Substrate	Class <sup>b</sup> (excluding floorings)
		Density (kg/m <sup>3</sup> )	Reaction to fire class			
Conforming to EN 520 (except perforated boards)	≥ 6,5 < 9,5	≥ 800	A1	≤ 220	Any wood-based product with density ≥ 400 kg/m <sup>3</sup> or any product of at least class A2-s1, d0	A2-s1, d0
				> 220 ≤ 320		B-s1, d0
	≥ 9,5	≥ 600		≤ 220	Any wood-based product with density ≥ 400 kg/m <sup>3</sup> or any product of at least class A2-s1, d0 or any insulating product of at least class E-d2 mounted according to method 1	A2-s1, d0
				> 220 ≤ 320		B-s1, d0

**a** Determined according to EN ISO 536 and with no more than 5 % organic additive content.**b** Classes as provided for in Table 1 of the Annex to Commission Decision 2000/147/EC.**Textual Amendments****F2** Inserted by Commission Decision of 7 August 2003 amending Decision 2003/43/EC establishing the classes of reaction-to-fire performance of certain construction products (notified under document number C(2003) 2592) (Text with EEA relevance) (2003/593/EC).**F3** Substituted by Commission Decision of 5 October 2006 amending Decision 2003/43/EC establishing the classes of reaction-to-fire performance for certain construction products as regards gypsum plasterboards (notified under document number C(2006) 4360) (Text with EEA relevance) (2006/673/EC).

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Note: Mounting and fixing

The gypsum plasterboards (hereinafter — ‘gypsum boards’) shall be mounted and fixed using one of the three following methods:

*Method 1 — Mechanically fixed to a supporting substructure*

The gypsum boards, or (in the case of multi-layer systems) at least the outermost layer of boards, shall be mechanically fixed to a metal substructure (made from components detailed in EN 14195) or to a timber substructure (in accordance with EN 336 and EN 1995-1-1).

When the substructure provides supporting members in one direction only, the maximum span between the supporting members shall not exceed a dimension equal to 50 times the thickness of the gypsum boards.

When the substructure includes supporting members in two directions the maximum span in either direction shall not exceed a dimension equal to 100 times the thickness of the gypsum boards.

The mechanical fixings shall be screws, staples or nails, which shall be fixed through the thickness of the gypsum boards into the substructure at centres not exceeding 300 mm measured along the length of each supporting member.

Behind the gypsum boards may be an air space, or an insulating product. The substrate may be:

- (a) any wood-based product with density  $\geq 400 \text{ kg/m}^3$  or any product of at least class A2-s1, d0 in case of gypsum boards of  $\geq 6,5 \text{ mm}$  and  $< 9,5 \text{ mm}$  nominal thickness and  $\geq 800 \text{ kg/m}^3$  core density, or
- (b) any wood-based product with density  $\geq 400 \text{ kg/m}^3$  or any product of at least class A2-s1, d0 in case of gypsum boards of  $\geq 9,5 \text{ mm}$  nominal thickness and  $\geq 600 \text{ kg/m}^3$  core density, or
- (c) any insulating material of at least class E-d2 in case of gypsum boards of  $\geq 9,5 \text{ mm}$  nominal thickness and  $\geq 600 \text{ kg/m}^3$  core density.

Each joint between adjoining gypsum boards shall have a gap width  $\leq 4 \text{ mm}$ . This provision applies for any joint regardless of that the joint is or is not supported directly by a substructure supporting member and regardless of that the joint is or is not filled with a jointing material.

In cases (a) and (b) each joint between adjoining gypsum boards, which is not supported directly by a substructure supporting member and which has a gap width  $> 1 \text{ mm}$ , shall be fully filled with a jointing material as specified in EN 13963 (the other joints may remain unfilled).

In case (c) all joints between adjoining gypsum boards shall be fully filled with a jointing material as specified in EN 13963.

*Method 2 — Mechanically fixed to a solid wood-based substrate*

The gypsum boards shall be mechanically fixed to a solid wood-based substrate with density  $\geq 400 \text{ kg/m}^3$ .

There shall be no cavity between the gypsum boards and the substrate.

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The mechanical fixings shall be screws, staples or nails. The distance between the mechanical fixings shall correspond to the rules given above for method 1.

Each joint between adjoining gypsum boards shall have a gap width  $\leq 4$  mm and may remain unfilled.

*Method 3 — Mechanically fixed or bonded to a solid substrate (dry lining system)*

The gypsum boards shall be fixed directly to a solid substrate with a reaction to fire classification of at least class A2-s1, d0.

The gypsum boards may be fixed using screws or nails fixed through the thickness of the gypsum boards into the solid substrate or may be bonded to the substrate using ‘dabs’ of a gypsum based adhesive as specified in EN 14496.

In either case the screw or nail fixings or the adhesive ‘dabs’ shall be positioned at maximum 600 mm vertical and horizontal centres.

All joints between adjoining gypsum boards may remain unfilled.]

TABLE 3

Classes of reaction-to-fire performance of high-pressure decorative laminate panels

High pressure decorative laminate panels <sup>a</sup>	Product detail	Minimum density(kg/m <sup>3</sup> )	Minimum overall thickness(mm)	Class <sup>b</sup> (excluding floorings)
Interior grade non-FR Compact HPL panels <sup>c</sup>	Compact HPL meeting EN 438-4 type CGS	1 350	6	D-s2, d0
Interior grade non-FR HPL composite panels with wood-based substrates <sup>c</sup>	Composite panels comprising non-FR grade HPL meeting the requirements of EN 438-3, adhesively bonded to both sides of non-FR grade wood-based core of minimum thickness 12 mm complying with EN 13986, using PVAc or	Wood-based core minimum density 600 HPL minimum density 1 350	12 mm wood-based core with HPL $\geq 0,5$ mm bonded to both sides	D-s2, d0

**a** Either directly fixed (i.e. with no air gap) to a material having a reaction to fire of A2-s1, d0 or better and a density of at least 600 kg/m<sup>3</sup>, or mounted on a timber or metal batten support frame, with a non-ventilated (i.e. void open only at the top) air gap of at least 30 mm, the reverse face of the cavity so formed having a reaction to fire classification of A2-s1, d0 or better.

**b** Classes as provided for in Table 1 of the Annex to Decision 2000/147/EC.

**c** Complying with European Standard EN 438-7.



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	thermosetting adhesive at an application rate of 60 to 120 g/m <sup>2</sup>			
<b>a</b>	Either directly fixed (i.e. with no air gap) to a material having a reaction to fire of A2-s1, d0 or better and a density of at least 600 kg/m <sup>3</sup> , or mounted on a timber or metal batten support frame, with a non-ventilated (i.e. void open only at the top) air gap of at least 30 mm, the reverse face of the cavity so formed having a reaction to fire classification of A2-s1, d0 or better.			
<b>b</b>	Classes as provided for in Table 1 of the Annex to Decision 2000/147/EC.			
<b>c</b>	Complying with European Standard EN 438-7.			

TABLE 4

Classes of reaction-to-fire performance of structural timber products<sup>0</sup>

	<b>Product detail</b>	<b>Minimum mean density<sup>c</sup>(kg/m<sup>3</sup>)</b>	<b>Minimum overall thickness(mm)</b>	<b>Class<sup>b</sup>(excluding floorings)</b>
<b>Structural timber</b>	Visual and machine graded structural timber with rectangular cross-sections shaped by sawing, planing or other methods or with round cross-sections	350	22	D-s2, d0
<b>a</b>	Applies to all species covered by the product standards.			
<b>b</b>	Classes as provided for in Table 1 of the Annex to Decision 2000/147/EC.			
<b>c</b>	Conditioned according to EN 13238.]			

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- (1) OJ L 40, 11.2.1989, p. 12.
- (2) OJ L 220, 30.8.1993, p. 1.
- (3) OJ C 62, 28.2.1994, p. 1.
- (4) OJ L 50, 23.2.2000, p. 14.

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