NA to BS EN 1996-1-2:2005

Incorporating corrigendum October 2015

NATIONAL ANNEX

UK National Annex to Eurocode 6: Design of masonry structures –

Part 1-2: General rules – Structural fire design

ICS 13.220.50; 91.010.30; 91.080.30

British Standards

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Date	Text affected
31 October 2015	Table NA 3.6, row 1.1.1 has been corrected.

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National Annex (informative) to BS EN 1996-1-2:2005, Eurocode 6: Design of masonry structures – Part 1-2: General rules – Structural fire design

Introduction

This National Annex has been prepared by BSI Subcommittee B/525/6, *Use of masonry*. It is to be used in conjunction with BS EN 1996-1-2:2005.

NA.1 Scope

This National Annex gives:

a) decisions for the Nationally Determined Parameters described in the following subclauses of BS EN 1996-1-2:2005:

2.2(2)	actions;
2.3(2)	design value of material properties;
2.4.2(3)	member analysis;
3.3.3.1(1)	thermal elongation;
3.3.3.2(1)	specific heat capacity;
3.3.3.3	thermal conductivity;
4.5(3)	assessment by tabulated data;
Annex B	values of t_F and l_F.

b) decisions on the use of informative Annexes A, C, D and E;

c) references to non-contradictory complementary information to assist the user to apply BS EN 1996-1-2:2005 (see **NA.4**).

NA.2 Nationally Determined Parameters

*NOTE No values are given for the symbols in clauses **NA.2.1** to **NA.2.7**, as the calculation methods given in Annexes C and D will not be used in the UK. In the event that a calculation method becomes available in a non-contradictory complementary publication, the recommended values for the symbols given in the relevant notes in BS EN 1996-1-2 may be considered to be acceptable for use.*

NA.2.1 Actions [see BS EN 1996-1-2:2005, **2.2**(2)]

The value of ε_m, the emissivity of a masonry surface: nvg

NA.2.2 Design values for material properties [see BS EN 1996-1-2:2005, **2.3**(2)]

$\gamma_{M,fi}$ for thermal properties for the fire situation: nvg

$\gamma_{M,fi}$ for mechanical properties for the fire situation: nvg

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NA.2.3 Member analysis
[see BS EN 1996-1-2:2005, **2.4.2**(3)]

γ_G, the partial factor for permanent actions: nvg

$\gamma_{Q,1}$, the partial factor for variable action 1: nvg

NA.2.4 Thermal elongation
[see BS EN 1996-1-2:2005, **3.3.3.1**(1)]

The values for ε_T (‰), the variation of the thermal elongation with temperature: nvg

NA.2.5 Specific heat capacity
[see BS EN 1996-1-2:2005, **3.3.3.2**(1)]

The values for c_a, the specific heat capacity with temperature: nvg

NA.2.6 Thermal conductivity
[see BS EN 1996-1-2:2005, **3.3.3.3**]

The values for λ_a, the thermal conductivity with temperature: nvg

NA.2.7 Assessment by tabulated data
[see BS EN 1996-1-2:2005, **4.5**(3)]

The values for γ_{Glo}: nvg

NOTE No value of γ_{Glo} is given, as it is only needed when fire tests are to be performed, or existing fire tests have to be interpreted.

A value may be assessed from the NA to BS EN 1996-1-1:2005, Tables NA.1 and NA.2 (γ_M) and the NA to BS EN 1990:2002, Table NA.A1.2 (noting that γ_F is given there in terms of γ_G and γ_Q, as applied to dead and imposed loads respectively). In arriving at the values of t_F and l_F in NA.3, account has been taken of the global safety factor applicable to the fire test data that was used to formulate the tables.

The tables applicable to $\alpha = 0.6$ may be used when the verification of vertical load capacity indicates that only up to 0.6 of the permitted design vertical load resistance is being used.$\alpha = 1.0$ should be used when more than 0.6 of the permitted capacity is being used.

NA.3 Annex B – Tabulated values of fire resistance of masonry walls (values of t_F and l_F) [see BS EN 1996-1-2:2005, Annex B, Note 4]

NOTE The values chosen are presented in tabular form and, for ease of use, each table retains the numbering of its counterpart in BS EN 1996-1-2:2005, Annex B. Those tables in that document that are not relevant are not given in this National Annex.

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NA.3.1 Clay masonry

[see BS EN 1996-1-2:2005, Table N.B.1.1]

The values in respect of N.B.1.1 are as given in Table NA.1.1

Table NA.1.1 **Clay masonry minimum thickness of separating non-loadbearing walls (criteria EI) for fire resistance classifications**

Row No.	Material properties: gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_F for fire resistance classification EI for time (minutes) $t_{fi,d}$					
		30	**60**	**90**	**120**	**180**	**240**
1.S	*Group 1S units*						
1.S.1	Mortar : general purpose, thin layer, lightweight $\rho \geqslant 1\,200$						
1.S 1.1		65	65	90	100	170	170
1.S 1.2		(65)	(65)	(90)	(100)	(100)	(140)
1.	*Group 1 units*						
1.1	Mortar : general purpose, thin layer, lightweight $\rho \geqslant 1\,000$						
1.1.1		65	100	100	100	170	200
1.1.2		(65)	(65)	(90)	(100)	(140)	(170)
2	*Group 2 units*						
2.1	Mortar : general purpose, thin layer, lightweight $\rho \geqslant 700$ 25% < perforation $\leqslant$ 40%						
2.1.1		100	130	215	215	240	240
2.1.2		(100)	(130)	(215)	(215)	(215)	(240)

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NA.3.2 Clay masonry
[see BS EN 1996-1-2:2005, Table N.B.1.2]

The values in respect of N.B.1.2 are as given in Table NA.1.2

Table NA.1.2 **Clay masonry minimum thickness of separating loadbearing single-leaf walls (criteria REI) for fire resistance classifications**

Row No.	Material properties: gross density, ρ [kg/m^3]	Minimum wall thickness, in mm, t_F for fire resistance classification REI for time (minutes) $t_{fi,d}$					
		30	**60**	**90**	**120**	**180**	**240**
1S	*Group 1S units*						
1S.1	Mortar: general purpose, thin layer $\rho \geqslant 1\,200$						
1S.1.1 1S.1.2	$\alpha \leqslant 1{,}0$	90 (90)	90 (90)	100 (90)	100 (100)	170 (140)	170 (140)
1S.1.3 1S.1.4	$\alpha \leqslant 0{,}6$	90 (90)	90 (90)	100 (90)	100 (100)	170 (100)	170 (140)
1	*Group 1 units* Mortar: general purpose, thin layer						
1.2	$\rho \leqslant 1\,000$						
1.2.1 1.2.2	$\alpha \leqslant 1{,}0$	100 (90)	100 (100)	100 (100)	140 (100)	200 (170)	200 (170)
1.2.3 1.2.4	$\alpha \leqslant 0{,}6$	90 (90)	100 (90)	100 (100)	140 (100)	170 (140)	200 (170)
2	*Group 2 units*						
2.1	Mortar: general purpose, thin layer $\rho > 700$ 25% < perforation $\leqslant$ 40%						
2.1.1 2.1.2	$\alpha \leqslant 1{,}0$	100 (100)	130 (130)	215 (215)	215 (215)	240 (215)	240 (240)
2.1.3 2.1.4	$\alpha \leqslant 0{,}6$	100 (100)	130 (130)	215 (215)	215 (215)	240 (215)	240 (240)

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