

Contents

Page

Foreword	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	7
4 Symbols	7
4.1 General	7
4.2 Latin letters	7
4.3 Greek letters	8
5 Building products	9
5.1 Earth blocks	9
5.2 Earth masonry mortar	9
5.3 Insulation	9
5.4 Plasters/renders on earth block masonry	10
6 Design and construction	10
6.1 Service classes	10
6.2 Ring ties and ring beams	10
6.3 Floor supports	11
6.4 Lintel design	11
6.5 Supports for concentrated loads	11
6.6 Minimum wall area	11
6.7 Mixed masonry	11
6.8 Mixed constructions	11
6.9 Chases and recesses	12
6.10 Constructional moisture protection	12
6.10.1 Accidental damage prevention	12
6.10.2 Splash water and rising damp	12
6.10.3 Protection against weathering	12
6.10.4 Moisture protection against influences of use	12
6.11 Thermal insulation	12
6.12 Sound insulation	12
7 Design	13
7.1 General	13
7.2 Verification using the partial factor method	13
7.2.1 Design values of material properties	13
7.2.2 Actions	13
7.2.3 Combinations of actions	13
7.2.4 Ultimate limit state	14
7.2.5 Serviceability limit state	15
7.2.6 Bond between earth block and earth masonry mortar	15
7.3 Characteristic compressive strength of earth block masonry	15
7.4 Structural stability of the building	16
7.5 Earthquakes	16
7.6 Calculation method for walls subjected to vertical and wind loads	16
7.6.1 Application conditions	16
7.6.2 Verification of the minimum superimposed load	17

7.6.3	Design value of the vertical load resistance	17
7.6.4	Reduction factors	19
7.6.5	Effective height of walls	20
7.6.6	Slenderness	21
7.6.7	Lintels	21
7.7	Load-bearing earth block masonry walls in case of fire	22
7.7.1	General	22
7.7.2	Types of walls, wall functions	22
7.7.3	Plaster and rendering	22
7.8	Determination of fire resistance	22
8	Execution	23
8.1	Weather protection at the construction site	23
8.2	Technical execution	23
8.3	Shrinkage	24
8.4	Plaster	24
Annex A (informative) Dismantling and recycling		25
A.1	General	25
A.2	Dismantling	25
A.3	Recycling	25
A.4	Procedure	25
A.5	Remanufacturing	25
A.6	Landfill	26
A.7	Life cycle assessment	26
Bibliography		27
Figure 1 -- Dimensions of b and b for walls restrained on three or four sides		21
Table 1 -- Values of the block compressive strength f_{st} as a function of the compressive strength Table 2 -- Compressive strength f_m values for masonry mortar		9
Table 3 -- Definition of service classes		10
Table 4 -- Partial factors M for materials in the ultimate limit state		15
Table 5 -- Characteristic compressive strength f_k , in N/mm ² , for single-leaf masonry made of		16
Table 6 -- Requirements for using the verification method		17
Table 7 -- Ambient humidity factors M for service classes		18
Table 8 -- Reduction factor 2		20
Table 9 -- Minimum thickness of load-bearing single-leaf compartment walls (criteria REI) for fire resistance classifications		23