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Projektiranje in vgradnja mavļ nih blokov

Design and application of gypsum blocks

Planung und Ausführung von Bauteilen aus Gips-Wandbauplatten

Conception et exécution des ouvrages en carreaux de plâtre

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Design and application of gypsum blocks

Conception et exécution des ouvrages en carreaux de plâtre

Planung und Ausführung von Bauteilen aus Gips-Wandbauplatten

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Contents

Page

Foreword

This document (EN 15318:2007) has been prepared by Technical Committee CEN/TC 241 “Gypsum and gypsum based products”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2008, and conflicting national standards shall be withdrawn at the latest by April 2008.

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1 Scope

This European Standard defines the rules for the design of gypsum blocks as specified in EN 12859, assembled with adhesives as specified in EN 12860. Accessory products are also defined in this document. It is applicable to non-loadbearing partition walls and internal insulation of walls in rooms of residential buildings, offices, hospitals, schools etc. and to linings of posts, beams, ducts, shafts etc, that are suitable to receive finishes such as paint and wallpaper without any prior traditional plastering, but having had normal preparation prior to painting.

Certain components requiring special provisions are not covered by this standard and require special consideration.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies

EN 12859:2001, *Gypsum blocks - Definitions, requirements and test methods*

EN 12860, *Gypsum based adhesives for gypsum blocks - Definitions, requirements and test methods*

EN 13501-2, *Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance tests, excluding ventilation services*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

3.1
partition
non-loadbearing, self-supporting vertical wall fixed to the shell construction at the periphery

3.2
dividing partition
partition separating two rooms or spaces belonging to the same structural unit (office, school, house, etc.)

3.3
backing partition
partition placed back-to-back with a wall element to which it is not connected

3.4
partition connected at top
partition extending over the whole distance between the floor and the ceiling and connected to the shell construction at the top

3.5
partition free at top
partition extending over the whole distance but not connected to the shell construction at the top

3.6
dwarf partition
partition extending only over part of the distance between the floor and the ceiling

3.7
single partition
partition of thickness equal to that of the gypsum block

3.8
multiple partition
partition comprising several single gypsum block partitions separated by a cavity, possibly fitted with insulation

3.9
composite partition
single or multiple partition connected to other materials to satisfy specific performance requirements

3.10
free-ended partition
partition with an unconnected vertical edge

3.11
overhanging partition
partition at the end of the top floor

3.12
lining (of posts)
encasement of any load bearing element

3.13
duct
vertical or inclined structure that incorporates shafts and does not convey fluids (air, smoke) directly

3.14
shaft
vertical structure that conveys fluids or gases directly

NOTE Shafts made of gypsum blocks are intended to convey only air or smoke

3.15
panel
part of partition between stiffeners, between structural elements, between stiffener and structural elements

3.16
stiffener
existing or additional structural element contributing to the stability of the gypsum block structure

3.17
additional vertical stiffener
vertical reinforcing element connected at its two ends to the structure or to an additional horizontal stiffener

3.18
additional horizontal stiffener
horizontal reinforcing element ensuring the load is transferred to the structure

3.19
horizontal stiffener for dwarf partition
horizontal reinforcing element connected at its two ends to the structure or to an additional stiffener to ensure the horizontal loads are transferred

3.20
mechanical stress level
- HIGH: stresses in non-residential rooms
- NORMAL: stresses in residential rooms

4 Design

4.1 General

By following the recommendations in this document, the designer can specify partitions suitable for the use for which they are intended.

4.2 Materials

— gypsum blocks according to EN 12859;

— gypsum-based adhesives for gypsum blocks according to EN 12860;

— other materials and accessories can be used.

4.3 Structure and Functions

4.3.1 General

The following factors can influence the choice of the type of gypsum blocks and shall be taken into account with the structural requirements:

a) type of building (single-family houses, buildings, etc.), purpose (accommodation, schools, offices, hospitals, etc.) and use (for example: damp rooms);

b) dimensional accuracy of the structure;

c) service arrangements (distribution of fluids, electricity);

d) type of connections to the structure and to the incorporated elements (frames, etc.), fixing loads.

The following functions shall also be taken into account in the choice of the type of gypsum blocks:

e) exposure to impacts and abrasion;

f) temperature and humidity conditions;

g) thermal insulation;

h) sound insulation;

i) safety in the event of fire.

4.3.2 Dividing or separating partitions

The partitions ensure one or more of the following functions:

Separation, fire protection, sound insulation or thermal insulation, supporting of loads, impact strength.

4.3.3 Backing partitions

Backings are structures intended to reinforce the thermal insulation, sound insulation or fire resistance properties of the structures against which they are backed.

4.3.4 Ducts

The ducts ensure one or more of the following functions:

— protecting the ambient medium against noise generated or transmitted by the shafts;

— protecting the shafts against fire;

— preventing propagation of the fire from one room to another.

Vertical ducts can be made of gypsum blocks on one or more faces according to their positioning relative to the shell construction. The duct walls can be single or composite according to the performance required.

4.3.5 Lining of posts

For aesthetic or technical reasons (fire resistance), all types of post (wood, metal, concrete …) can be protected by gypsum block structures.

4.4 Specific structural requirements

4.4.1 General

Depending on the type of building or purposes of the rooms, special precautions shall be taken into account.

4.4.2 Damp rooms

In rooms exposed intermittently to water, either by use or by the need to wash the surface of the partition or the adjacent floor, water-repellent gypsum blocks shall be used.