
Projektiranje in uporaba mavčnih plošč na okvirjih – 1. del: Splošno

Design and application of plasterboard systems on frames - Part 1: General

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Design and application of plasterboard systems on frames - Part 1: General

Conception et mise en oeuvre d'ouvrages en plaques de
plâtre sur ossatures - Partie 1: Generalities

Plannung und ausführung von Gipsplatten systemen auf
unterconstruction - Teil 1 : General

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 241.

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Foreword

This document has been prepared by the Technical Committee CEN/TC 241 “Gypsum and gypsum based products” the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This standard is one of a series of standards for construction products based on gypsum and their intended uses.

This standard includes the following parts:

Part 1: General

Part 2: Non-load bearing metal frame partitions

Part 3: Non-load bearing timber frame partitions

Part 4: Load bearing metal frame partitions

Part 5: Load bearing timber frame partitions

Part 6: Metal frame dry linings

Part 7: Timber frame dry linings

Part 8: Metal frame ceilings

Part 9: Timber frame ceilings

Part 10: Non loadbearing shaftwall systems

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Introduction

The properties of gypsum plasterboards make them particularly suitable for use in situations where fire protection, sound and thermal insulation are required. To obtain full advantage of these properties in partitions, their design and installation have to be correct.

Following the recommendations for the design and installation given in this part of the standard will enable expected performances to be achieved for non load bearing metal frame partitions.

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1 Scope

This part of this European Standard provides recommendations for the design and application of gypsum plasterboard to meet the performance requirements of the completed works. The products described are covered by harmonised technical specifications.

Recommendations on the installation of plasterboard as drylining and for the construction of plasterboard partitions and ceilings are given in parts 2 to 10 of this standard.

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.

prEN 520, *Specification for gypsum plasterboards*

prEN 15303-1, *Design and application of plasterboard system on frames — Part 1: General*

EN 13963, *Specification for Jointing materials for gypsum plasterboard*

EN 14195, *Metal framing components — Definitions, requirements and test methods*

prEN 14566, *Mechanical fasteners for gypsum plasterboard*

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3 Definitions

[oSIST prEN 15303-1:2007](https://standards.iteh.ai/catalog/standards/sist/648920af-490d-4f27-8d3f-653df0d7c7b4/osist-pr-en-15303-1-2007)

For the purposes of this European Standard, the definitions in part 1 and the following definitions apply:

(Note: these definitions to be copied from EN520 to ensure consistency)

3.1

lining

dry covering to any internal building surface

3.2

plasterboard drylining

lining constructed of gypsum plasterboard

3.3

plasterboard seamless drylining

plasterboard drylining that incorporates plasterboard seamless joints

3.4

gypsum baseboard

gypsum plasterboard in which the gypsum plasterboard face is suitable for receiving gypsum plaster

3.5

gypsum wallboard

gypsum plasterboard in which the gypsum plasterboard face is suitable for receiving gypsum plaster

3.6

gypsum wallboard F

gypsum wallboard with a gypsum plasterboard core that maintains its cohesion at high temperatures

3.7

gypsum plank

gypsum wallboard or gypsum baseboard of narrow width and large thickness

3.8

gypsum moisture resistant wallboard

gypsum wallboard in which the gypsum plasterboard core and paper sheets are water resistant

3.9

gypsum moisture resistant wallboard F

gypsum moisture resistant wallboard with a gypsum plasterboard core that maintains its cohesion at high temperatures

(Other definitions from EN 520)

3.10

gypsum coreboard

gypsum plasterboard specifically for use between the studs in a shaftwall system

3.11

gypsum Cove

see definition in cove standard

3.12

gypsum plasterboard composite

laminate in which one or more of the layers is gypsum plasterboard

3.13

insulating gypsum plasterboard

gypsum plasterboard composite that incorporates a film of low thermal emissivity

3.14

vapour control gypsum plasterboard

gypsum plasterboard composite that incorporates a film of low water vapour permeability

4 Design

4.1 General

Prior to the commencement of the contract there should be an exchange of pertinent information between all parties concerned. The designer should include working drawings and specifications, prepared in sufficient detail to afford proper guidance in the preparation of estimates and the execution of the work.

When selecting and designing drylining systems the designer should take into account the following points:

- a) The nature and condition of the building elements to which the system will be attached, including any necessary pre-treatment.
- b) The functional requirements.

- c) The type of finish / appearance.
- d) The dimensions required including:
 - i) the finished widths, heights and thicknesses of the systems;
 - ii) details of the nature of junctions with other building elements and construction details (e.g., doors, windows, ceiling junctions, etc.);
 - iii) the positioning of installations and fittings;
 - iv) any other situations that will affect the choice and design of drylining systems.
- e) The preparation of other building elements to provide adequate fixing points for drylining systems as necessary.
- f) The work of other trades, particularly concerning services (e.g., pipes, wires, etc.) that are intended to connect with or run within the drylining system.
- g) Manufacturing and building tolerances that may affect the design of the drylining system or the elements to which it is joined.

National regulations state certain requirements of drylinings that have to be met.

The performance of a drylining system is determined by calculation or testing in accordance with the relevant European Standard.

The designer should consider the systems selected for use and the effect this may have on the co-ordination of all trades and the overall building programme.

See also section xxxx, siteworks. (Note: this will include 4.2 of Tom's paper, re-worded as necessary).

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4.2 Functions

The following are examples of factors that can influence the choice of a drylining system and should be considered:

- a) Type of building, occupancy and use.
- b) Dimensions (height, width, thickness) of the system.
- c) Accuracy of background.
- d) Provision for services.
- e) Decoration.
- f) Loadings, to be carried by the system and imposed by the system on the structure.
- g) Exposure to knocks and abrasions.
- h) Space utilisation (optimum use of space).
- i) Temperature and humidity conditions.
- j) Thermal insulation.
- k) Sound insulation.
- l) Fire protection, fire resistance, surface spread of flame, cavity barriers.

m) Type of construction.

It is important that a decision is made as early as possible as a partition is to be constructed as an integral part of the building to take full advantage of the systems available, e.g. non-loadbearing partitions and wall and ceiling linings incorporating thermal and sound insulation.

Table 1 summarises the properties of common partitioning systems.

Table 1 — Primary functions and properties

Function or property	Points to be considered	Partitions	Wall Linings	Ceilings	Duct & Shaft
Separation	Layout of linings or partitions.	•			•
Access	Location and types of doors and hardware, hatches, etc., movable partition.	•	•	•	•
Strength and stiffness	Ability to support fixtures, e.g. cupboards, basins, services, etc. Resistance to impacts from objects, door slamming and occupants. Resistance to wind pressure. Strength of the fixings to the supporting structure.	•	•	•	•
Loadbearing	Ability to support or stiffen other elements of the structure. Resistance to wind pressure. Resistance to crowd pressure. Racking strength.	•	•	•	•
Fire protection	Regulations for fire resistance & reaction to fire & smoke control.	•	•	•	•
Acoustics	Sound insulation in conjunction with other elements. Acoustic control.	•	•	•	•
Visibility, privacy and lighting	Arrangement and type of glazing. Borrowed light.	•	•		
Hygrothermal separation	Thermal resistance in conjunction with other elements. Reduced air movement through joints, access panels, etc. Water vapour control	•	•	•	•
Distribution of services	Within partitions or linings or surface mounted.	•	•	•	•
Durability	Selection of materials. Frequency and ease of maintenance / repair.	•	•		•
Appearance	Colour, texture and decoration.	•	•	•	•
Utilisation of space	Thickness of partition or lining system. Accuracy of the background.	•	•	•	•
Security	Resistance to intrusion	•	•	•	•