Dakar Platre

RAW MATERIAL SHEET

Natural gypsum

Raw material for powder plaster and plasterboard

Ref. FT-05 · Revision 01 · November 2026

1. Product identification

Trade name	Natural gypsum — raw material
Origin	Morocco
Intended use	After crushing, separation and calcination, the gypsum is used to produce powder plaster and plasterboard.
Description	Calcium sulphate dihydrate ($CaSO_4 \cdot 2H_2O$), converted to hemihydrate by calcination
Appearance	Odourless, crushed and friable material, white to cream in colour

2. Composition

Parameter	Value (% by weight)	Remark
$CaSO_4 \cdot 2H_2O$ (dihydrate)	> 70 %	Main component of plaster; or equivalent as CaO and SO_3
SO_3	40–45 %	Sulphate content
CaO	≈ 30 %	Varies with the raw gypsum
Loss on ignition (L.O.I.)	18–22 %	Crystalline water
SiO_2	≤ 8 %	Silica, sand, inerts; preferably ≤ 5 %
Al_2O_3	≤ 1 %	
Fe_2O_3	≤ 1 %	
MgO	≤ 1 %	

3. Processing notes

- **Calcination type:** define the target hemihydrate (α or β). Alpha hemihydrate (high performance) may require an autoclave or a pressure process; beta hemihydrate can be produced in an open kiln or a rotary kiln.
- **Temperature and duration:** these vary with the kiln and the process design; controlled process parameters are essential.
- **Grinding:** the calcined hemihydrate must be ground to the target particle size distribution.
- **Retarder:** citric acid, borax or commercial retarders can be used to control setting; the type and dosage must be determined by sample testing.

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