Knauf One Coat Plaster

Wall Surface Finishing Methods

Sand Cement Plaster

Brick/Block/AAC Work

Sand Cement Plaster

Wall Putty/ POP Punning

Painting

Gypsum Plaster

Brick/Block/AAC Work

Gypsum Plaster

Painting

Industry Shifting Towards Gypsum Plaster

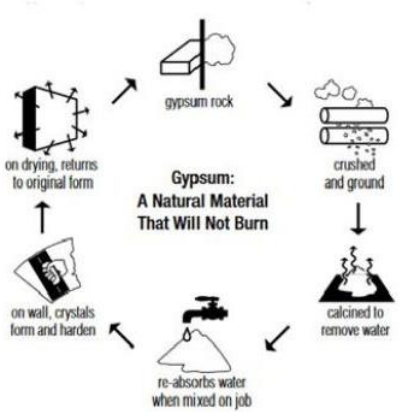
Parameters	Sand Cement Plaster	Gypsum Plaster
Surface finishing process	2 Steps	1 Steps
Water curing	Required	Not required
Shrinkage cracks	Possible	Cracks free
Construction weight	Heavier	Lighter (~25%)
Thermal conductivity	Higher	Lower
Quality of plaster mixture	Inconsistent Quality (manual mixing of sand & cement)	Consistent Quality
Finish	Rough Finish	Smooth finish
Housekeeping	Messy job site	Clean Housekeeping
Faster Construction	Time consuming process. Need 7-8 days for finishing.	Time Saving process. Ready to finish surface in 3 days.

Gypsum Plaster is becoming a preferred choice:

- Environment friendly (No river sand bed depletion)
- Saves building energy
- No Curing required
- Consistent Quality (No additional mix of aggregates)
- Lead to Green footprints.
- Less of multiple agencies & handling of materials.
- Faster construction
- Sand scarcity (Govt. restriction)

What is Gypsum Plaster?

- Gypsum {Calcium Sulphate Dihydrate ($CaSO_4.2H_2O$)} is a naturally occurring rock which, when ground to a powder and heated, losses most of its moisture. This is known as Stucco or Calcium Sulphate Hemihydrate.
- When this dry powder is mixed with water, it forms a paste or slurry which sets and hardens by chemical re-combination of gypsum with water.
- This material, which can be applied over brick, block or concrete surface (in a plastic state) to form a smooth surface is called gypsum plaster. And this process is called as Gypsum plastering.



$CaSO_4.2H_2O$

"Gypsum" or "Calcium Sulphate Dihydrate"

Calcination ~ 150 °C

+ $1^1/_2$ H_2O

$CaSO_4.{}^1/_2H_2O$

"Stucco", or "Plaster", or "Hemihydrate"

Knauf One Coat Plaster

Features:

- Excellent Converge
- Superior Workability
- Perfect Smooth Finish
- Free of Shrinkage Cracks
- Environment friendly.

Ceiling

Walls

AAC Block

Red Brick

RCC Surface

Benefits of Knauf One Coat Plaster

Faster completion of project	• Finished surface can be achieved in 3 days.
Single step process	• Same finish can be achieved in Gypsum Plaster in single step as compared to two step finish in conventional cement-sand plaster.
Superior quality	• Factory mixed product with consistent formulation. No shrinkage cracks like conventional sand cement plaster.
Excellent finish	• Smooth white finished surface ready for painting. • Excellent surface finish due to fine particles.
Environment friendly	• No water curing required in gypsum plaster saves water resources. • No cement-sand required.
Construction friendly	• Gypsum plaster is lighter than conventional sand cement plaster which helps in decreasing load of the building.

Technical Data - Knauf One Coat Plaster

- Coverage* (12 mm thickness) : Approx 16 sqft/ 25 kg bag
- Water - Powder Ratio : 1 - 1.4
- Setting time : 10-15 min.
- Color upon drying : White
- Standard Pack Size: 20kg, 25kg & 40kg
- Shelf Life** : 3 months.
- Drying Time*** : 2 to 3 days

*Under controlled conditions
**Shelf life – when properly stored and kept away from moisture/water.
***Depends on substrate type, plaster thickness, site, humidity & weather conditions

Application Process

- **Surface preparation:** Surfaces should be clean and free from dust. Remove any dust, dirt, oil particles etc. which can hinder bonding with the surface. Apply the Bull marks on the wall for levelling purpose before plastering.

- **Mixing:** Take water in a clean pot or bucket. Add plaster powder to water as per recommended ratio. Mix it thoroughly until a consistent lump free paste is obtained. Prepare plaster mix quantity which can be used in specified initial setting time.

- **Application:** Apply the plaster mortar in order to create a levelled surface. Spread the applied material and flush with straight trowel. Level the surface and align the corners. Then Prepare a thin plaster mix and apply as a finish coat to achieve a smooth finished surface. Once the plaster surface has set, smoothen with finishing trowel.

- **Finished surface:** Post complete drying, surface is ready for final finishing work which usually takes 3 days.

Frequently Asked Questions

- What is the shelf life of plaster ?
  - 3 months when stored properly & kept away from the moisture
- What will be the pack size ?
  - 20, 25 & 40 kg
- What will be the coverage of plaster ?
  - 16 sqft for 25 kg bag under control condition with average thickness of 12 mm
- What will be the thickness of plaster ?
  - It can be applied in maximum of 15mm thickness.
- Plaster is mixed with water or water is mixed to plaster powder ?
  - Gypsum Plaster powder is mixed to the water.
- What will be the setting time of plaster ?
  - 10-15 minutes in ideal conditions
- What do you mean by setting time ?
  - It is the time between the mixing of plaster to its application on the wall (end of plastic state)
- What will be the color of plaster after application ?
  - Off white post application & white after drying

Frequently Asked Questions

- What is hacking & why it is required ?
  - It refers striking of surfaces such as RCC walls, columns, beams, slabs etc., with a chisel to dent the surface in order to create a proper mechanical bond with gypsum plaster directly applied on it.
- What is the alternate of hacking ?
  - Gypsum Bonding adhesive can be used on the RCC substrate for better bonding.
- How the plaster will be applied on the RCC Substrate ?
  - Gypsum Bonding adhesive can be applied on RCC or hacking can be done
- After how many hours plaster should be applied after bonding agent application ?
  - Plaster can be applied after 1 hour (once the surface is dry) & within 7 days, subjected to humid conditions & substrate surface should be thoroughly cleaned and free from dust, oil & Greace.
- What can be the maximum thickness of plaster applied with gypsum bonding adhesive/compound ?
  - 12-15 mm
- Does gypsum plaster act as fire retardant ?
  - As the Gypsum molecule consists crystalline water, it is fire resistant.
- Test certificates are available for this ?
  - Knauf OCP is tested in accordance with IS 2547 (Part 1) & inhouse benchmarking.

Frequently Asked Questions

- Is it good for thermal insulation ?
  - It is having lower thermal conductivity
- Is cleaning required before application ?
  - Yes, the substrate surface should be free from dust, oil & grease
- Can we use nails after hardening of gypsum plaster surface ?
  - Yes, it can be used.
- Plaster is manufactured as per what IS code ?
  - Knauf OCP is manufactured and tested as per IS 2547 (Part 1)
- Do we need to use fiber mesh at the junctions, conduits ?
  - Yes, fiber mesh should be applied before application of gypsum plaster on the junctions and/or conduits for services.
- Is this a green product ?
  - Yes, as the gypsum can be recycled.
- What are the tools required for plaster application ?
  - Spatula, hand mixer, bucket/pot, Aluminium box shaped rod, Plumb bob, tape, etc.

Thank you

for your attention