

Introduction to Gypsum Installation

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Designed as a quick-reference guide for students, apprentices, and DIY enthusiasts.

1. What Is Gypsum?

Property	Details
Composition	Calcium sulfate dihydrate (CaSO ₄ ·2H ₂ O)
Common Forms	- Drywall / plasterboard (core + paper facings)
	- Plaster of Paris (powder that rehydrates)
Key Advantages	Light, fire-resistant, sound-dampening, easy to cut, smooth finish
Typical Uses	Interior walls & ceilings, partitions, soffits, decorative moldings

2. Types of Gypsum Board

Type	Core Thickness	Typical Applications	Special Features
Standard (Regular) Board	½ in (12mm) – 5/8 in (15mm)	General wall & ceiling	Cost-effective
Moisture-Resistant (MR) / Green Board	Same as standard	Bathrooms, kitchens, laundry rooms	Water-repellent core
Fire-Resistant (FR) / Type-X	5/8 in (15mm) – ¾ in (19mm)	Fire-rated assemblies, garages	Glass-fiber reinforcement
Sound-Proof (Acoustic) Board	¾ in (19mm) – 1 in (25mm)	Home theaters, multi-family walls	High-density core
Light-Weight (LWB)	¼ in – ½ in	Ceiling tiles, non-structural partitions	Reduced load on framing
Impact-Resistant (IR)	5/8 in – ¾ in	High-traffic areas, schools	Hardened surface layer

3. Tools & Materials Checklist

Category	Essential Items

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Cutting	Utility knife, drywall saw, T-square, snap cutter, rotary cutter (for curves)
Fastening	Drywall screws (coarse-thread for wood, fine-thread for metal), nails (rare), screw gun or drill
Finishing	Joint tape (paper or fiberglass), joint compound (all-purpose or setting-type), corner bead, sanding block/sponge
Safety	Dust mask/respirator, safety glasses, hearing protection, gloves
Measuring & Layout	Tape measure, level, chalk line, laser level (optional)
Miscellaneous	Drywall lift (for ceilings), pry bar, hammer, stud finder

4. Preparing the Work Area

1. **Inspect framing** – Verify stud spacing (typically 16-in or 24-in on-center) and that studs are plumb and level.
 2. **Clear obstacles** – Remove old insulation, debris, and any protruding fasteners.
 3. **Mark layout** – Use a chalk line to indicate board edges, ceiling joist lines, and door/window openings.
 4. **Control dust** – Seal off adjoining rooms, use a shop-vac with a HEPA filter, and wear a respirator.
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5. Installation Steps

5.1. Hanging Wall Boards

1. **Start at a corner** – Position the first sheet with its long edge perpendicular to the studs.
2. **Leave a gap** – Keep a ¼-in (6-mm) expansion gap at the floor and ceiling; use a spacer or shims