

Gypsum Board Production Line

Complete Turnkey Business Proposal



High-capacity gypsum-board production line reference

2-30m m2 per year	8-20 mm board thickness	PLC central control
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Prepared for investment planning in Afghanistan and regional export markets. Final specifications, pricing, civil works, and utility loads require supplier quotation and site survey.

Executive Summary

This proposal presents an automated paper-faced gypsum-board plant integrating powder dosing, additive preparation, high-speed mixing, continuous forming between liner papers, initial setting, cutting, multi-deck drying, trimming, inspection and stacking. Capacity can be scaled from approximately 2 to 30 million square meters per year.

Why this project fits Afghanistan

- Drywall supports faster and lighter interior construction than traditional wet masonry.
- Demand grows with commercial buildings, offices, hotels and modern housing.
- A product family of standard, moisture-resistant and fire-rated boards expands market reach.
- Local gypsum availability can improve competitiveness after purity and consistency testing.

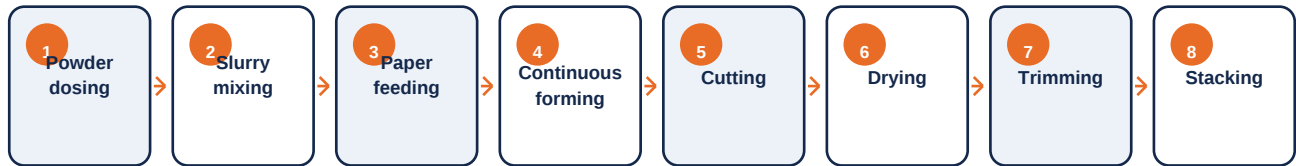
Sanaatchi delivery scope

- Factory setup planning, supplier pre-qualification, and technical comparison
- Complete production-line and individual equipment supply
- Factory layout, utilities, civil-work coordination, installation, and commissioning
- Raw-material sourcing, trial-batch qualification, and repeat supply planning
- International logistics, customs documentation, operator training, spare parts, and after-sales support

2-5 million m²/year entry configuration producing 1,200-1,220 mm wide board, 2,400-3,600 mm long and 8-20 mm thick, with PLC control and multi-zone hot-air dryer.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Standard gypsum board	8-20 mm thickness	Interior walls and ceilings
Moisture-resistant board	Hydrophobic additives and liner	Kitchens and humid areas
Fire-resistant board	Fiber and performance additives	Fire-rated assemblies
Ceiling board	Lightweight formats	Suspended ceiling systems

Board strength and dryer stability depend on gypsum purity, calcination quality, water-to-plaster ratio, liner-paper bonding and additive control. Product certification should follow the target market's dimensional, strength, fire and moisture standards.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Gypsum powder silos	Store and meter stucco	Load cells and screw feeders
2	Additive preparation	Dose starch, foam and modifiers	Recipe controlled
3	Pin mixer	Produce uniform gypsum slurry	Continuous high speed
4	Paper unwind stands	Feed face and back liner	Automatic tension
5	Forming station	Set thickness and bond papers	Servo gap control
6	Setting conveyor	Support initial hydration	Line-speed synchronized
7	Knife cutter	Cut wet board to length	Servo flying cut
8	Multi-deck dryer	Remove free moisture	Multi-zone hot air
9	Trimming and bundling	Finish edges and stack boards	Automatic
10	Dust collection	Control powder emissions	Silos, mixing and finishing

Equipment models are indicative and will be matched to the selected capacity, local raw-material tests, available utilities, and preferred automation level.

Reference Equipment Gallery



High-capacity gypsum-board production line reference



Conveying, forming and dryer-section reference



Automatic dryer discharge and roller conveyor

Images are supplier references for configuration discussion; final equipment appearance and model may differ.

Plant, Raw Materials & Utility Requirements

Raw materials

- Calcined gypsum stucco of controlled purity
- Face and back liner paper
- Starch and foaming agent
- Set accelerators and retarders
- Glass fiber and fire-performance additives
- Silicone or hydrophobic additives
- Clean process water

Utilities & infrastructure

- Stable three-phase power and PLC room
- Natural gas, diesel, thermal oil or other approved dryer fuel
- Process water treatment and storage
- Compressed air and dust extraction
- Large linear building with dryer and conveyor clearance
- Paper and finished-board warehouse protected from moisture

Quality, safety and environmental controls

- Stucco purity, fineness and setting-time tests
- Continuous slurry density and board-thickness checks
- Dryer temperature and final-moisture control
- Flexural strength and paper-bond testing
- Dimensional, edge and surface inspection
- Fire and moisture performance validation for specialty grades

A final factory layout must reserve safe forklift routes, maintenance clearances, raw-material segregation, finished-goods storage, fire protection, ventilation, and future expansion space.

Indicative Investment & Implementation Plan

LOW-ENTRY CONFIGURATION

Afghanistan entry case: economical Chinese equipment, locally fabricated noncritical items, local civil works and labor, phased automation, and land excluded. Optional automation can be added after sales are established.

Component	Indicative range	Notes
Entry production equipment	US\$0.8m-2.2m	Economy 2-3 million m2/year configuration
Local dryer building and utilities	US\$0.35m-1m	Local steelwork and civil labor where suitable
Freight and commissioning	US\$0.2m-0.6m	Supplier supervision with local installation team
Laboratory and spares	US\$0.06m-0.2m	Basic quality lab and essential drives
Working capital	US\$0.15m-0.45m	Paper, stucco, additives and launch inventory
Low-entry project total	US\$1.56m-4.45m	Land excluded; automation can be phased

Implementation sequence

Phase 1	1-2 months	Gypsum tests, product standards and market sizing
Phase 2	2-4 months	Supplier comparison and basic engineering
Phase 3	6-10 months	Manufacture and civil construction
Phase 4	2-4 months	Shipping, erection and utility completion
Phase 5	1-2 months	Dryer tuning, product trials, certification and training

Ranges are planning targets for a low-cost entry configuration, exclude land, and remain subject to confirmed capacity, supplier quotation, freight, duties, exchange rates and site conditions.

Next Steps & Contact Information

Recommended next steps

- Confirm target products, hourly output, and packaging formats
- Test representative raw materials and document quality requirements
- Complete site survey covering electricity, water, fuel, drainage, roads, and warehouse space
- Request comparable technical and commercial quotations from shortlisted suppliers
- Finalize financing, logistics, installation, training, and spare-parts plan

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Research and image references

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