SANAATCHI
INDUSTRIAL VISION GROUP

Gypsum Powder & Plaster Production Line

Complete Turnkey Business Proposal

Made-in-China supplier reference: real gypsum powder & plaster production line equipment.

2-4 t/h screened starter output	**25-40 kg** launch bag sizes	**1 grade** initial plaster recipe	**16-26** entry workforce

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

A medium-industrial mineral-processing line converting tested natural gypsum rock into controlled plaster powder through covered receiving, primary crushing, drying where required, controlled grinding, calcination to remove chemically bound water, cooling and ageing, fine grinding and classification, optional recipe blending, dust-controlled silo storage, laboratory release and valve-bag packing. It is a calcined-plaster plant, not merely a stone mill.

Why this project fits Afghanistan

- Afghan gypsum deposits can support local wall-plaster, block and moulding industries when chemistry is consistent.
- Calcination control-not grinding alone-determines setting time, water demand and strength.
- A 2-4 t/h modular plant limits fuel and inventory exposure while building contractor confidence.
- Dust containment and sealed dry storage protect workers and preserve product quality.

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

Recommended configuration	Begin only after deposit sampling proves gypsum purity and harmful salts. Screen one 2-4 t/h line with jaw/hammer crushing, feed bin, Raymond or vertical mill, indirect or boiling-furnace calciner, cooler, ageing silo, classifier, dust collectors, one product silo, 25-40 kg valve-bag packer and a plaster laboratory. Contract product setting time and strength before equipment selection.

Manufacturing Process & Product Portfolio

Integrated process flow

Target products

Product	Typical specification	Primary market
General building plaster	Buyer-approved fineness, setting time, water demand, strength, soundness and moisture	Plasterers, dry-mix producers and building-material distributors
Gypsum-block or moulding plaster	Separate controlled setting and strength recipe after trials	Gypsum block and decorative-cornice workshops

Natural gypsum purity, free moisture, soluble salts and clay directly affect fuel use and plaster quality. The supplier must run representative Afghan rock and guarantee feed and finished-product basis. Acceptance measures tonnes per hour, fuel and kWh per tonne, calcination temperature profile, combined water, fineness, setting time, water-plaster ratio, strength, soundness, moisture and bag weight.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Receiving hopper, crusher and metal protection	Reduces tested gypsum rock to stable mill feed	Deposit-specific top size
2	Dryer or hot-gas feed system	Controls excess feed moisture where required	Install after moisture study
3	Raymond or vertical grinding mill	Produces controlled calciner feed	2-4 t/h product basis
4	Boiling or indirect calcination system	Converts gypsum dihydrate to plaster hemihydrate	Temperature and residence control
5	Cooler, ageing silo and classifier	Stabilizes plaster and controls fineness	One launch grade
6	Baghouse and sealed conveyors	Captures fine combustible-free mineral dust	Negative-pressure transfers
7	Product silo and valve-bag packer	Stores and packs released plaster	25-40 kg bags
8	Gypsum/plaster laboratory	Tests chemistry, setting and strength	Buyer-agreed methods

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

Made-in-China supplier reference: real gypsum powder & plaster production line equipment.

Made-in-China supplier reference: second real machine configuration for gypsum powder & plaster production line.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Tested natural gypsum rock with controlled purity, moisture, clay and soluble salts
- Fuel selected for calciner design and reliable local supply
- Approved setting-control additives only after formulation trials
- Valve bags, pallets, wrap, labels, filters, grinding parts and critical spares

Utilities & infrastructure

- Stable three-phase power and transformer/motor-starting study
- Reliable calciner fuel, combustion controls and safe fuel storage
- Covered dry raw-material and finished-product storage
- Dust extraction at crusher, mill, silos and packing points
- Laboratory water, compressed air and fire/emergency systems

Quality, safety and environmental controls

- Sample every quarry lot for purity, moisture and harmful salts
- Control crusher feed, mill fineness and calciner residence
- Trend calcination temperature and combined-water result
- Test setting time, water demand, strength and soundness
- Verify silo moisture, bag weight and sealing
- Trace each packed lot to quarry and production conditions

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

The lowest credible plant makes one tested building-plaster grade at 2-4 t/h with proper calcination, dust control and laboratory release. Quarry fleet, land, building and working inventory are excluded.

Component	Indicative range	Notes
Crushing, drying and grinding section	US$180k-480k	2-4 t/h mineral preparation
Calciner, cooler, classifier and dust control	US$260k-720k	Core plaster-quality section
Silos, packing, laboratory and utilities	US$120k-330k	One product grade
Civil works, freight, erection and spares	US$180k-520k	Fuel and foundation dependent
Indicative installed project total	US$740k-2.05m	Quarry fleet, land, building and working capital excluded

Implementation sequence

Phase 1	2-5 weeks	Confirm product specification, representative raw material, buyer, capacity, site and utilities
Phase 2	3-7 weeks	Run supplier trials with the buyer material and freeze the balanced machine, tooling and utility scope
Phase 3	8-22 weeks	Manufacture or refurbish, inspect, document and ship the contracted equipment
Phase 4	3-12 weeks	Install, commission, train operators and pass material-specific acceptance tests

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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