

Flour Fortification & Packing Line

Complete Turnkey Business Proposal



Supplier reference: stainless micro-dosing unit for controlled flour-additive feeding.

0.5-1.0 t/batch entry batch size	20-1,000 g/min micro-doser supplier range	±1% supplier dosing reference	4-6 entry operators
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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 line upgrades already milled flour by dosing an approved vitamin-mineral premix, dispersing it uniformly and packing traceable retail or wholesale bags. It is not a flour mill: the operator buys or receives finished flour, validates the premix recipe, controls dosing accuracy and releases each batch only after homogeneity and packaging checks.

Why this project fits Afghanistan

- Existing mills can add fortification and branded packing without replacing their milling equipment.
- Precise premix dosing supports institutional, humanitarian and regulated flour contracts.
- A batch system gives economical traceability and recipe control at modest output.
- Retail and wholesale pack formats can be introduced in phases as demand grows.

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

Start with a 500-1,000 kg batch system, a calibrated micro-doser, horizontal flour blender, control sifter, magnet and one semi-automatic 5-50 kg packer. Obtain the fortification formulation and compliance limits from the competent Afghan authority or buyer before equipment sizing.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Fortified wheat flour	Micronutrient recipe approved for the target market	Retail, bakeries and institutional buyers
Fortified atta flour	High-extraction flour with validated premix dispersion	Household and food-service packs
Contract-packed flour	Buyer recipe, bag size and traceability code	Mills, aid suppliers and private labels

Micro-doser supplier references show food-grade stainless construction, screw feeding, 20-1,000 g/min configurations and approximately $\pm 1\%$ stated deviation. These are equipment claims, not proof that the finished flour meets a legal fortification standard. Commissioning must include calibration, mixer-homogeneity tests and an approved laboratory release plan.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Flour receiving hopper	Receives finished flour under dust control	Bag dump station with screen and extractor
2	Calibrated micro-doser	Meters vitamin-mineral premix at the validated rate	Food-grade screw feeder with anti-bridging hopper
3	Horizontal flour blender	Disperses premix uniformly through each batch	500-1,000 kg entry batch; validation required
4	Control sifter	Removes agglomerates and foreign material	Food-grade screen matched to flour grade
5	Magnetic separator	Controls ferrous contamination before packing	Accessible for inspection and records
6	Buffer hopper and auger feed	Delivers uniform flour flow to the packer	Dust-tight and cleanable design
7	Flour packing machine	Weights and seals retail or wholesale bags	Semi-automatic 5-50 kg entry range
8	Coder and check scale	Marks lot/date and verifies finished pack weight	Define legal metrology and coding format

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



Supplier reference: stainless micro-dosing unit for controlled flour-additive feeding.



Supplier reference: enclosed auger-fed flour pouch filling and sealing machine.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Finished food-grade wheat or atta flour
- Approved flour-fortification premix with certificate of analysis
- Food-grade bags, liners and labels
- Coding ink, thread or heat-seal consumables

Utilities & infrastructure

- Stable electricity matched to mixer and packer
- Dry, temperature-controlled premix storage
- Dust extraction and filtered ventilation
- Calibrated laboratory balance and sampling tools
- Cleanable food-grade production room with pest control

Quality, safety and environmental controls

- Approve the fortification formula and target addition rate before production
- Calibrate the micro-doser at defined intervals and after product change
- Validate mixer homogeneity with representative laboratory samples
- Segregate and reconcile premix inventory by lot
- Retain flour samples and record batch, pack weight, date and release status
- Use PPE and dust control when handling concentrated micronutrient premix

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

Lowest entry uses batch blending, one calibrated micro-doser and semi-automatic packing. It assumes finished flour is supplied by an existing mill and excludes flour, premix and laboratory working capital.

Component	Indicative range	Notes
Micro-doser and flour blender	US\$4k-10k	Batch system with food-contact stainless parts
Sifter, magnet and transfer	US\$2k-5k	Essential control and dust-tight conveying
Semi-automatic flour packing	US\$3k-8k	One launch bag range with coder
Electrical, installation, calibration and spares	US\$2k-6k	Include calibration weights and feeder spares
Freight and clearance	US\$2k-6k	Consolidate compact equipment where practical
Indicative low-entry total	US\$13k-35k	Premix, flour inventory, laboratory fees and building excluded

Implementation sequence

Phase 1	1-3 weeks	Confirm legal recipe, pack sizes, batch traceability and laboratory plan
Phase 2	2-4 weeks	Run dosing and blending trials and approve the complete equipment list
Phase 3	4-7 weeks	Manufacture, inspect and ship the selected line
Phase 4	2-4 weeks	Install, calibrate, validate homogeneity and release trial batches

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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