

Steel Hot-Dip Galvanising Plant

Complete Turnkey Business Proposal



Made-in-China supplier reference: real steel hot-dip galvanising plant equipment.

bankable study investment gate	confirmed feedstock supply gate	EPC scope delivery gate	quality laboratory release gate
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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

Strategic hot-dip galvanising that receives fabricated steel, degreases, pickles, fluxes, dries, immerses it in molten zinc, cools, inspects and dispatches corrosion-protected components.

Why this project fits Afghanistan

- This is a strategic plant, not a low-entry equipment package.
- Bankable feedstock, utility, permit, market, EPC and financing evidence is required before selection.
- Operate only with an independent laboratory, defined quality release and preventive-maintenance program.

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

Develop only after confirmed steelwork throughput, zinc and chemical supply, environmental permit, fume/acid control, safe handling, bath-size demand, inspection standards and experienced galvanising operator support are bankable.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Hot-dip galvanised steelwork	Component dimensions/weight, coating mass/thickness, surface preparation, alloy chemistry, drainage/venting, finish standard and packing	Construction steelwork, towers, transmission structures, fencing, solar supports, road furniture, fabricators and infrastructure contractors

Final capacity, process, resource quality, utilities, permit conditions, emissions, acceptance test and commercial terms require independent engineering review before any order.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Receiving/jigging and degreasing	Prepares steelwork	Oil and handling control
2	Pickling/rinsing/flux system	Cleans and activates steel	Acid, iron and flux quality
3	Drying and zinc kettle	Applies zinc coating	Bath temperature and chemistry
4	Cooling/passivation/finishing	Stabilises coated work	Appearance and protection
5	Inspection and waste-treatment system	Releases compliant work	Coating mass and environmental control

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 steel hot-dip galvanising plant equipment.



Made-in-China supplier reference: second real machine configuration for steel hot-dip galvanising plant.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Fabricated steelwork, zinc ingots, acid, flux salts, degreasing chemicals, passivation chemicals, jigs, packaging, fume-treatment media, water-treatment chemicals and laboratory consumables

Utilities & infrastructure

- Bankable electricity/fuel/water plans, process cooling and treatment, plant fire safety, laboratory, covered stores and qualified operation team
- Environmental permits, emissions control, waste route, maintenance workshop, critical spares and site-specific safety systems

Quality, safety and environmental controls

- Confirm customer component sizes, steel chemistry/venting design, zinc/chemical contracts, acid/fume/waste permit, crane/handling and coating-standard requirements before EPC contracting
- Control cleaning, pickling, rinsing, flux, kettle temperature/composition, immersion, drainage, dross/ash, cooling, coating thickness and finish
- Test coating thickness/mass, adhesion/appearance, bare spots, drainage, zinc chemistry, bath contamination and waste-treatment performance

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

A galvanising plant must be engineered around real steelwork sizes, venting, zinc chemistry and environmental controls. The zinc kettle is only one part of the system.

Component	Indicative range	Notes
Pre-treatment tanks, cranes and jigging	US\$12m-40m	Workpiece size and throughput
Zinc kettle, furnace and fume extraction	US\$20m-70m	Bath size and fuel/emissions
Treatment, laboratory, utilities and installation	US\$12m-40m	Environmental/safety critical
Indicative strategic project total	US\$44m-150m	Land, finance 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

- steel-fire-rated-doors-frames
- light-gauge-steel-building-frames