

Recycled-Plastic Lumber & Posts Production Line

Complete Turnkey Business Proposal



Made-in-China supplier reference: real recycled-plastic lumber & posts production line equipment.

80-150 kg/h screened profile output	1 profile launch die family	HDPE/PP controlled polymer family	9-15 entry workforce
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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

A medium recycling-and-profile plant converting qualified sorted HDPE/PP waste or purchased recycled compound into one solid plastic-lumber or fence-post profile through feedstock inspection, washing and drying where required, size reduction, metal removal, densification or compounding with melt filtration, controlled pellet or agglomerate feeding, profile extrusion, die forming, cooling/calibration, haul-off, cutting, conditioning and mechanical/weathering tests.

Why this project fits Afghanistan

- Local plastic waste can become durable non-structural outdoor products.
- Fence posts and landscape profiles suit a controlled single-profile launch.
- Purchased compound isolates extrusion from the larger waste-washing problem.
- Structural, fire and long-life claims require product-specific engineering evidence.

Sanaatchi delivery scope

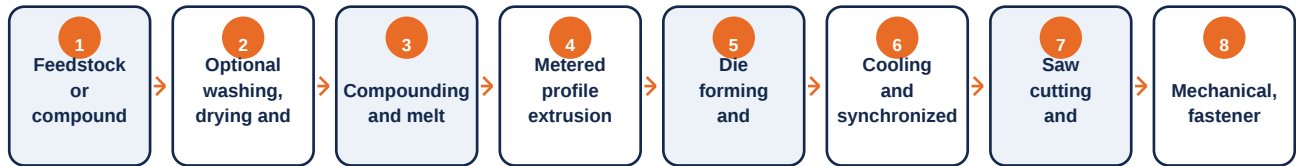
- Factory setup planning, supplier pre-qualification, and technical comparison
- Complete production-line and individual equipment supply
- Factory layout, utilities, civil-work coordination, installation, and commissioning
- Raw-material sourcing, trial-batch qualification, and repeat supply planning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

Recommended configuration

For the lowest controlled entry, buy a qualified recycled HDPE/PP compound and launch one non-structural solid fence-post or landscape profile at 80-150 kg/h. Include a single-screw profile extruder designed for recycled material, continuous melt filter, one die/calibrator, water cooling, haul-off, saw, dust/fume control and flexural, creep, impact, fastener-pullout and UV tests. If local mixed waste is the feed, add a complete sorting, washing, drying and compounding plant as a separate mandatory scope.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Non-structural recycled-plastic fence post	Section, length, mass, polymer, flexural strength/stiffness, creep, impact, fastener pullout, UV class and use limitation	Farms, gardens and landscape works
Landscape plastic-lumber profile	Buyer-defined section with span/load table and fastening method	Benches, edging and non-structural outdoor fabrication

A profile extruder does not turn unsorted municipal waste directly into certified lumber. Supplier trials must use the final compound and die. Acceptance checks contamination, MFR, moisture, filter pressure, output, dimensions, voids, cooling distortion, density, flexural properties, impact, creep under declared load, screw/nail pullout and accelerated UV. No load-bearing, fire-safe or food-contact claim is permitted without named tests and engineering approval.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Feed preparation/compound receiving	Provides clean homogeneous polymer feed	Purchased compound at entry
2	Recycled-plastic profile extruder	Plasticizes and meters HDPE/PP	80-150 kg/h
3	Continuous melt filter	Removes residual contamination	Pressure monitored
4	One die and calibrator	Forms the launch solid section	Fence-post basis
5	Cooling, haul-off and saw	Controls shape, length and cut	Synchronized line
6	Profile laboratory	Tests dimensions, flexure, creep, impact and UV	Declared end-use protocol

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 recycled-plastic lumber & posts production line equipment.



Made-in-China supplier reference: second real machine configuration for recycled-plastic lumber & posts production line.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Qualified recycled HDPE or PP compound with lot certificate
- Compatible stabilizer, colour and processing package
- Only documented segregated clean rework to validated limit
- Straps, labels, pallets and replaceable filter screens

Utilities & infrastructure

- Stable three-phase electricity with verified connected load
- Closed-loop cooling water sized for the contracted process
- Dry covered material and finished-goods storage
- Ventilation, fire protection, safe lifting and guarded machinery
- Fume extraction and safe saw-dust collection
- If local waste is used: water treatment, sludge and reject-disposal systems

Quality, safety and environmental controls

- Identify polymer, MFR, moisture, ash and contamination
- Monitor filter pressure and extrusion stability
- Gauge section, length, straightness, voids and density
- Test flexural strength/stiffness and impact
- Complete creep and fastener-pullout tests for declared use
- Validate UV retention and publish clear non-structural limits

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 route buys tested recycled compound and makes one non-structural profile. A local mixed-waste route requires separate sorting, washing, drying, wastewater and compounding equipment and cannot be hidden in the entry price.

Component	Indicative range	Notes
Profile extruder, filter, die and calibration	US\$48k-105k	Purchased-compound entry
Cooling, haul-off, saw and handling	US\$22k-55k	One solid profile
Laboratory, fumes and utilities	US\$18k-48k	End-use evidence
Freight, installation and spares	US\$20k-52k	Compound/die trial included
Indicative installed low-entry total	US\$108k-260k	Waste washing/compounding, building and stock 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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