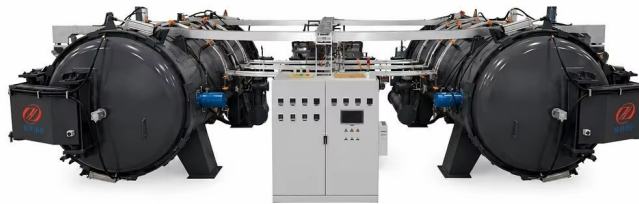




Integrated Architectural Tempered & Laminated Glass Plant

Complete Turnkey Business Proposal



Made-in-China supplier reference: real integrated architectural tempered & laminated glass 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

Integrated architectural-glass processing that cuts, edges, washes, tempers, heat-soaks where specified, laminates with PVB/SGP or EVA interlayers, autoclaves, inspects and packs flat-glass products for building applications.

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 architectural demand, qualified float-glass supply, electrical capacity, water, clean-room control, glass-handling safety, standards, engineering design responsibility, warranty limits and trained processing team are bankable.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Tempered and laminated architectural glass	Glass make-up, thickness, interlayer, heat treatment, edgework, optical/anisotropy limits, safety standard, size and packing	Facade contractors, windows/doors, offices, malls, hotels, hospitals and infrastructure glazing

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	Cutting/edgework/washing	Prepares clean glass blanks	Size and edge quality
2	Tempering and quench furnace	Creates safety glass	Stress and flatness
3	Heat-soak test where specified	Screens nickel-sulfide risk	Project standard
4	Lamination clean room/autoclave	Bonds interlayer and glass	Bubble/adhesion quality
5	Optical/safety laboratory	Releases building glass	Fragmentation, optics and bond

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 integrated architectural tempered & laminated glass plant equipment.

Made-in-China supplier reference: second real machine configuration for integrated architectural tempered & laminated glass plant.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Qualified float glass, PVB/SGP/EVA interlayers, ceramic frit or coatings as selected, edge consumables, process water, packaging, spacers, sealants and laboratory materials

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 project standards, supplier glass quality, energy, water, clean-room, safety, handling, demand and competent engineers before investment
- Control cut size, edge defects, wash quality, furnace curve, quench, heat soak, interlayer handling, autoclave cycle, bubbles, bond and optical distortion
- Test dimensions, edge, fragmentation, stress, bow, optical quality, laminate adhesion and project-specific safety 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

Tempered and laminated glass are different safety products. The plant must control edge quality, furnace settings, clean lamination and project-specific test evidence.

Component	Indicative range	Notes
Cutting, edging, washing and handling	US\$8m-25m	Sheet size/automation
Tempering, heat soak and inspection	US\$10m-35m	Furnace and safety scope
Lamination clean room/autoclave and laboratory	US\$10m-38m	Interlayer/product mix
Indicative strategic project total	US\$28m-98m	Land, float-glass stock, 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

Sanaatchi Industrial Vision Group

Afghanistan Office: +93 779 819 820 | info@sanaatchi.com

China Office: +86 159 5171 6867 | china@sanaatchi.com

Website: www.sanaatchi.com

Research and image references

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