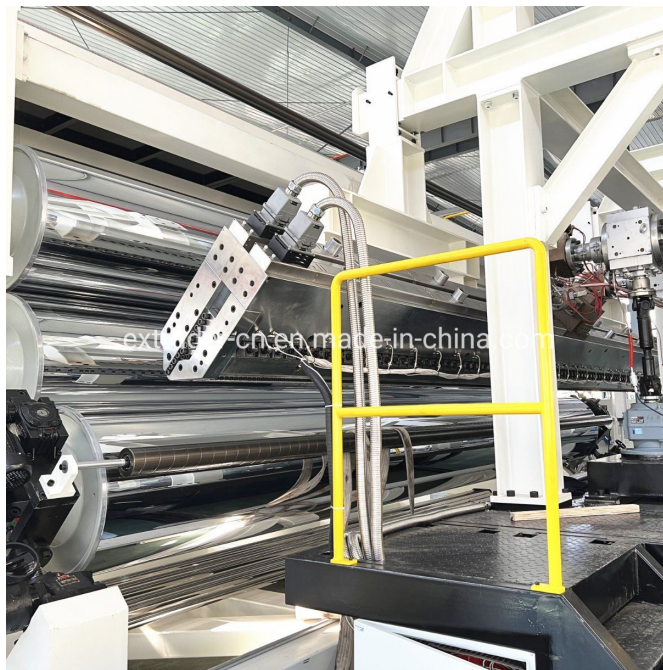




Agricultural Pond-Liner Geomembrane Production Line

Complete Turnkey Business Proposal



Made-in-China supplier reference: real agricultural pond-liner geomembrane production line equipment.

5-7 m launch roll width	1.0/1.5 mm launch thickness	400-600 kg/h screened output	18-28 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 large strategic wide-sheet extrusion plant producing certified smooth or textured HDPE pond-liner geomembrane through gravimetric virgin-resin and carbon-black masterbatch dosing, high-capacity extrusion with fine melt filtration, flat-die distribution, three-roll calendering, online thickness scanning, edge trimming, controlled cooling and haul-off, wide-roll winding, laboratory conditioning and density, carbon-black, tensile, tear, puncture, stress-crack and oxidative-induction testing.

Why this project fits Afghanistan

- Irrigation ponds, canals and water-storage projects need durable seepage control.
- Wide rolls reduce field seams and installation risk.
- Afghan solar exposure and rocky subgrade demand verified puncture and UV durability.
- Manufacturing quality alone does not replace professional liner design and field welding QA.

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

Treat this as a large project. Launch one smooth 1.0 or 1.5 mm, 5-7 m wide HDPE geomembrane at 400-600 kg/h using certified virgin geomembrane resin and qualified carbon-black masterbatch. Include gravimetric dosing, wide flat die, calender, online gauge, roll handling and a GRI-GM13-capable laboratory. Installation welding equipment and certified field seams are a separate but essential service scope.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Smooth HDPE pond-liner geomembrane	Thickness, width, density, carbon black content/dispersion, tensile, tear, puncture, stress crack, OIT, roll length and traceability	Irrigation ponds, reservoirs, canals and water projects

This is an engineered geosynthetic, not ordinary black PE sheet. Acceptance requires a sustained full-width run and cross-web thickness map plus named tests for density, carbon black content/dispersion, tensile/yield/break, elongation, tear, puncture, dimensional stability, stress cracking and standard/high-pressure OIT. Every roll is traceable. Pond design must include subgrade, geotextile protection, anchorage, drainage and certified trial seams.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Gravimetric dosing and large extruder	Controls certified resin recipe	400-600 kg/h
2	Wide automatic flat die	Distributes melt across 5-7 m	Deckled launch width
3	Three-roll calender and thickness scanner	Controls surface and gauge	Full-width mapping
4	Cooling, haul-off and edge trim	Stabilizes membrane	Tension synchronized
5	Wide-roll winder and handling	Builds and safely moves rolls	Rated crane/shaft
6	Geomembrane laboratory	Performs GM13-type release tests	Stress-crack and OIT included

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 agricultural pond-liner geomembrane production line equipment.



Made-in-China supplier reference: second real machine configuration for agricultural pond-liner geomembrane production line.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Certified virgin HDPE geomembrane resin
- Qualified carbon-black masterbatch and approved antioxidants
- Roll cores, protective wrap, labels and traceability tags

Utilities & infrastructure

- Stable three-phase electricity with verified connected load
- Ventilation, fire protection, guarded drives and lockout procedures
- Dry segregated raw-material and finished-goods storage
- Maintenance workshop, lifting tools and critical spares
- Large engineered building with wide-line foundations and crane
- Closed-loop calender/cooling water and controlled laboratory
- Qualified field welding, destructive seam test and vacuum/air-channel test equipment

Quality, safety and environmental controls

- Verify every resin/masterbatch certificate and lot
- Map thickness continuously across full width
- Test density and carbon-black content/dispersion
- Test tensile, elongation, tear and puncture
- Test stress-crack resistance and OIT
- Inspect roll surface, edges, length and traceability; qualify field seams

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

This opportunity belongs in large projects. Narrow generic sheet machines and uncertified black film are not acceptable substitutes for engineered pond-liner geomembrane.

Component	Indicative range	Notes
Dosing, extrusion, filter and wide die	US\$280k-620k	400-600 kg/h certified route
Calender, gauge, cooling and winding	US\$220k-520k	5-7 m wide handling
Laboratory, crane and utilities	US\$120k-310k	GM13-type release capability
Freight, civil works, erection and spares	US\$180k-450k	Large-project installation
Indicative installed project total	US\$800k-1.90m	Land, building shell, resin and field installation 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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