

Plastic Broom-Filament Production Line

Complete Turnkey Business Proposal



Made-in-China supplier reference: real plastic broom-filament production line equipment.

80-150 kg/day entry output	1 polymer controlled route	1 diameter launch product	5-8 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 small/medium monofilament line producing one PET or PP broom-bristle family through polymer drying and blending, melt extrusion and fine filtration, spinneret forming, water quench, multi-stage hot drawing, heat setting and relaxation, optional crimping or flagging, oil finish, tension-controlled winding or bundle cutting, diameter and tensile inspection and packing.

Why this project fits Afghanistan

- Broom and brush workshops need consistent local bristle bundles.
- One polymer and diameter simplify draw and heat-setting recipes.
- Qualified PET bottle flake may be used only after washing, drying and colour control.
- Diameter, straightness, recovery and bundle consistency affect broom quality.

Sanaatchi delivery scope

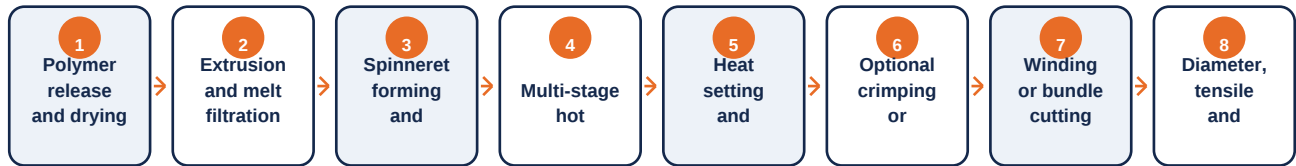
- Factory setup planning, supplier pre-qualification, and technical comparison
- Complete production-line and individual equipment supply
- Factory layout, utilities, civil-work coordination, installation, and commissioning
- Raw-material sourcing, trial-batch qualification, and repeat supply planning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

Recommended configuration

Launch one straight or lightly crimped household-broom filament in one polymer and diameter at 80-150 kg/day. Include dryer, single-screw extruder, filter/spinneret, quench, draw rollers and hot tanks/ovens, annealing, finish applicator, winding/cutting and bristle laboratory. Do not claim paintbrush, toothbrush or cosmetic filament from a broom-grade line without separate precision trials.

Manufacturing Process & Product Portfolio

Integrated process flow



Target products

Product	Typical specification	Primary market
Household-broom monofilament	Polymer, diameter, profile, colour, straight/crippled form, cut length, stiffness, tensile and bend recovery	Local broom and cleaning-brush assemblers

Bristle stiffness depends on polymer, diameter, profile and orientation, not diameter alone. Acceptance uses the contracted polymer and colour for a sustained run and measures filament diameter/profile, denier, tensile strength, elongation, shrinkage, bend recovery, straightness/crimp, bundle mass, cut length and broom insertion/pull performance. Recycled PET needs extra PVC, moisture and colour controls.

Core Equipment Schedule

Step	Equipment	Function	Indicative parameter
1	Dryer, loader and blender	Prepares stable polymer feed	PET or PP route
2	Monofilament extruder and melt filter	Forms clean stable melt	Entry output
3	Spinneret and quench tank	Defines filament count and profile	One diameter family
4	Draw rollers and hot tanks/ovens	Orients filament and develops strength	Controlled draw ratio
5	Anneal, finish and winding/cutting	Stabilizes and packages bristle	Broom bundle format
6	Filament laboratory	Tests diameter, tensile, shrinkage and recovery	Buyer sample basis

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 plastic broom-filament production line equipment.



Made-in-China supplier reference: second real machine configuration for plastic broom-filament production line.

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

Plant, Raw Materials & Utility Requirements

Raw materials

- Qualified PET, PP or PBT grade-one route at launch
- Approved colour, UV and finish package
- Clean controlled same-polymer rework only after validation
- Wrap, straps, labels and cartons

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
- Clean process water and temperature-controlled hot drawing baths

Quality, safety and environmental controls

- Verify polymer, moisture, MFR/IV and contamination
- Control melt pressure and spinneret cleanliness
- Measure diameter/profile and denier variation
- Record draw ratio, bath temperature and shrinkage
- Test tensile, elongation and bend recovery
- Approve bundle length, mass and broom assembly trial

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 modest one-polymer broom-grade line provides the lowest credible entry. Precision cosmetic/toothbrush filament, many spinnerets and bottle washing are separate projects.

Component	Indicative range	Notes
Drying, extrusion, spinneret and quench	US\$22k-52k	One polymer/diameter
Drawing, heat set, winding and cutting	US\$16k-38k	Broom-grade route
Laboratory and utilities	US\$7k-18k	Bristle performance
Freight, installation and spares	US\$9k-22k	Polymer trial included
Indicative installed low-entry total	US\$54k-130k	Building and polymer 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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- <https://zyaextruder.en.made-in-china.com/product/cZgTkjdUuRrV/China-Pet-PP-Plastic-Broom-Brush-Filament-Extruding-Machine.html>