OEM & Private Label | 3D Printed Products

Scope & business model

Scope: physical products made using 3D printers and marketed under as OEM & Private Lable.

Recommended entry route: approve a U.S. contract-print/OEM partner for pilot batches; retain design control, brand ownership, final release and customer service at Green Globe. Internalize production only after repeat demand is proven.

01 | Choose the commercial structure

MODEL	WHO PRINTS / WHO OWNS BRAND	WHERE GREEN GLOBE EARNS
A. Green Globe private label	Approved U.S. OEM prints to controlled specs; packaging, listings and customer relationship.	Direct Clients, Online Sellers / wholesale margin.
B. Green Globe as OEM	Green Globe operates printers or controls production; B2B buyer owns its brand and approved artwork.	Manufacturing + engineering + fulfillment fee.

02 | Define the first product portfolio

Suitable low-regulation pilot SKUs: non-load-bearing desktop organizers, display stands, decorative items, planters, custom signage, mock-ups, non-safety industrial jigs and prototype housings. Confirm each item's end use before committing.

Launch hold / specialist review: toys or products intended for children; food-contact articles; patient-contact or medical parts; electrical or fire-safety equipment; PPE; and automotive/aerospace safety-critical parts. A 3D-printing process does not exempt the finished product from its applicable rules. [2-6]

03 | Documented order-to-delivery chain

Opportunity → SKU & regulatory screen → IP/design approval → OEM qualification → engineering specification → first article → signed sample approval → controlled batch → final quality release → label/pack → delivery → complaint & recall monitoring.

Control principle: Every commercial SKU must have (i) a written intended-use statement; (ii) one approved CAD/revision and material; (iii) one "golden sample" and acceptance criteria; (iv) documented batch identity; and (v) an assigned U.S. regulatory/certification owner. This is the release gate before any listing goes live.

EXECUTION SYSTEM

12-Step Manufacturing Procedure

A purchase order must not trigger commercial production before the specification and sample are approved.

STEP / OWNER	REQUIRED ACTIVITY	RECORD / EXIT GATE
01 Sales / Product	Record target buyer, purpose, operating conditions, geometry, volume, sales channel, and customer brand requirements.	Product Brief; SKU code
02 Compliance / QA	Classify finished item: intended age, food/skin contact, structural or electrical use; identify federal and state rules.	SKU Compliance Matrix; HOLD/GO
03 Legal / Design	Clear trademarks and third-party models; obtain commercial print license or documented customer IP authorization.	IP release; artwork approval
04 Procurement / QA	Screen U.S. or foreign OEM by process, capacity, equipment, insurance, sample quality, traceability and audit rights.	Supplier Qualification File
05 Engineering	Freeze CAD/STEP/STL, drawing, tolerances, color/finish, material grade, orientation, infill, wall thickness and acceptance tests.	Revision-controlled Specification
06 Materials / QA	Approve resin/filament/powder supplier, batch ID, SDS, storage and shelf-life conditions; plan replacements.	Approved BOM and material lots
07 Finance / Sales	Set MOQ, unit quote, tooling/design charges, freight, duties (if imported), defect allowance, lead time and payment milestones.	Approved price / sales terms
08 Engineering / Buyer	Print samples; inspect fit, finish and functional performance; customer signs physical/photo golden sample.	First Article Report + approval
09 QA / Production	Validate repeatability with a pilot lot; lock machine/slicer settings and sampling plan. Revalidate after key changes.	Process release; controlled work instruction
10 Operations	Issue PO/work order; confirm schedule, material availability, artwork, packaging, carrier and approved production route.	Authorized WO / PO
11 Production / QA	Print, post-process, inspect, record rejects, segregate nonconforming pieces and authorize rework or scrap.	Lot history + QA release
12 Fulfillment / Care	Apply correct branding and origin statements, pack, ship, issue invoice, track returns/complaints and corrective actions.	Shipping trace + complaint log

Technical Production & Quality SOP

Apply to in-house printers and require equivalent documentary proof from every contract OEM.

01 | Production work order: mandatory data fields

WO-3DP-____ / SKU-____: buyer / private-label brand; CAD revision; drawing and dimensions; material + supplier lot; technology (FDM/FFF, SLA/DLP, SLS/MJF or metal AM); machine ID; nozzle/layer parameters; orientation, supports, infill, temperature/curing profile; quantity; due date; packaging specification; inspector; and change record.

02 | Controlled production sequence

STAGE	MINIMUM CONTROL / EVIDENCE
Pre-print	Check approved design + slicer version, machine calibration, clean build surface, approved material lot, dryer/room conditions and operator authorization.
In-process	Identify each build; log machine ID, time, key settings, intervention, failure reason, yield and reprint decision. Preserve build files.
Post-process	Use validated cooling / washing / UV cure / depowdering / support removal; inspect deformation, cracks, porous surfaces and sharp edges.
Inspection	100% visual and count check; dimensional sampling against critical dimensions; fit/function tests and destructive strength tests only where defined by the product risk and approved plan.
Lot release	QA compares results with signed sample and specification; identifies accepted / rework / rejected quantities; blocks unapproved material/design changes.

03 | Quality, traceability and changes

- Product standard: maintain a master drawing, bill of materials, customer-approved color/texture and measurable acceptance limits; cosmetic appearance alone is not sufficient for functional products.
- Records: tie shipped SKU/lot to print build, printer, process revision, material lot, inspections, pack label and shipment/customer. Set a defensible retention policy by product category.
- Changes: written engineering change notice for resin/filament supplier, formulation/color, printer, orientation, cure or finishing changes; assess repeat testing and buyer approval.
- Benchmark: ISO/ASTM 52920 describes qualification principles for industrial AM sites; it is a useful voluntary operating framework, not a universal legal certification. [1]

04 | Cost / profitability sign-off

Full unit cost = material used (including supports and scrap) + occupied machine hours + operator/post-processing time + inspections/testing + packaging/label + overhead + freight/fulfillment + returns/warranty reserve + applicable duties/taxes.
Commercial approvals: compute gross margin by SKU, minimum order quantity, capacity utilization, lead-time buffer and reprint rate before confirming customer pricing.

Compliance & Release Checklist

Apply by finished-product type, source country, intended user and U.S. state of sale - not by printing method.

TOPIC	GREEN GLOBE ACTION / RULE TRIGGER
General consumer goods	Screen for applicable CPSC rules. Domestic maker/importer issues a General Certificate of Conformity (GCC) only when a covered mandatory product rule requires certification; it is not automatic for every printed item. [3]
Children / toys	Products primarily intended for children aged 12 or under may need CPSC-accepted third-party testing, a Children's Product Certificate (CPC), and permanent tracking labels. Small-batch status is not a blanket exemption. [4]
CPSC eFiling (current)	Since 8 Jul 2026, importers generally eFile certificate data for imported CPSC-certified products (foreign-trade-zone entries: 8 Jan 2027). U.S.-made goods have updated certificate content requirements but not import eFiling. [5]
Food / medical	For food-contact products, verify authorization of all relevant substances for the actual conditions of use; a filament called "food-safe" does not approve the finished article. Medical-device claims trigger FDA device classification and controls. [6-7]
Origin & U.S. claims	FTC unqualified "Made in USA" claims require "all or virtually all" U.S. origin, not just U.S. final printing; substantiate every claim. Imported finished items need CBP origin-marking review. [8,12]
Facility / workforce	Evaluate printer emissions, ventilation/filtration, resin and powder handling, SDS availability, operator training, guarding, fire and waste controls under applicable OSHA and local requirements. [2,9]
Brand / online sales	Search marks and designs before launch; assess third-party IP rights. Online listings must support advertised claims and shipping dates; provide delay / cancellation / refund notices when required. [10-11]

OEM Contract, Rollout & Decision Gates

Contract templates and targets below are recommendations; validate with U.S. product counsel and tax/insurance advisers.

01 | Mandatory OEM / private-label agreement schedule

COMMERCIAL + IP	QUALITY + OPERATIONS	RISK + EXIT
Legal entity; scope; territories; SKUs; exclusive/non-exclusive rights; price, MOQ and escalation; deposit/credit/payment terms.	Signed specs, golden sample, tooling ownership, print file custody, subcontracting consent, approved sources and packaging artwork.	Product responsibilities, test/certificate owner, insurance, warranty, indemnity, recall coordination and incident reporting.
Clear ownership of customer CAD and modified design; no OEM re-sale or unauthorized duplication; confidentiality and data controls.	Acceptance / rejection criteria; change control; inspection and audit rights; records, defect thresholds and rework authorization.	Corrective action deadlines, dispute forum, IP infringement handling, transition/termination and handover of stock/files.

Monthly MD dashboard (proposed): active approved SKUs | gross margin by SKU | quoted vs actual unit cost | first-pass yield | scrap/reprint % | delivered on time % | returns/defects per 1,000 shipped | open safety complaints | supplier capacity.

PRIMARY U.S. REGULATORY & TECHNICAL REFERENCES (LIVE OFFICIAL LINKS)

1 ASTM / ISO - AM site qualification

2 CDC/NIOSH - Safe 3D printing

3 CPSC - GCC requirements

4 CPSC - Children's certificate

5 CPSC - Certificates / eFiling

6 FDA - Food-contact materials

7 FDA - 3D medical devices

8 FTC - Made in USA standard

9 OSHA - Hazard communications

10 USPTO - Trademark basics

11 FTC - Internet order delivery rule

12 CBP - Import origin marking example