THE KNITWEAR SOURCING & MANUFACTURING PLAYBOOK

A Field Manual on Garment Engineering, Fabric Specifications, Factory Communication, and Quality Control

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Confidential Buyer Field Guide • For International Apparel Brands, Wholesalers & Merchandisers

1. THE SOURCING ECOSYSTEM: FROM YARN TO FINISHED CARTON

Knitwear manufacturing differs fundamentally from woven production. While woven fabrics are cut from rigid rolls, knit structures are flexible loops formed from continuous yarn. Understanding the 7 core stages in the Tirupur cluster empowers buyers to prevent quality defects, forecast accurate lead times, and optimize costing before issuing purchase orders.

Stage	Process Description	Typical Duration	Key Buyer Checkpoint & Tolerance
1. Yarn & Knitting	Ring-spun or compact combed yarn spun; knitted on 24G/28G circular machines.	7 - 10 Days	Verify yarn count (26s, 30s), machine gauge, and raw greige weight.
2. Wet Processing	Softflow azo-free reactive dyeing, enzyme bio-wash, stenter drying, compacting.	5 - 7 Days	Lab dip shade sign-off under D65 / TL84 light box; colorfastness check.
3. Pre-Production (PP)	Complete size-set cut and sewn using approved bulk trims, labels, and thread.	4 - 6 Days	Full Point of Measure (POM) audit against approved tech pack tolerance.
4. Bulk Cutting	Fabric relaxation (24 hrs mandatory), lay spreading, automated band knife cutting.	3 - 4 Days	Marker efficiency, shade lot sorting (preventing panel-to-panel shading).
5. Embellishment	Automated screen printing, Tajima embroidery, silicone badge heat seal.	4 - 6 Days	Strike-off visual approval, stretch cracking test, 60°C wash test.
6. Sewing Assembly	4-thread overlock, flatlock seams, bottom coverstitch, collar rib attach.	7 - 12 Days	Inline AQL audit, SPI (Stitches Per Inch) check, seam tensile strength.
7. Finishing & Pack	Thread trimming, vacuum steam pressing, needle detector scan, polybagging.	4 - 6 Days	Final AQL 2.5 audit, barcode scan, carton drop test (ISTA 1A).

TIRUPUR BENCH RULE: FABRIC RELAXATION & LEAD TIMES

Lead Time Secret: *The single largest cause of factory shipment delays is not sewing floor capacity—it is late lab dip approvals and unrelaxed knit fabric. Oger Knits mandates a minimum 24-hour tension relaxation period after fabric compacting before cutting; skipping this causes severe post-wash spirality and torque.*

CRITICAL COMMUNICATION TIMELINE: 30 TO 45 DAYS PRODUCTION

To ensure on-time vessel departure, maintain strict milestone gates: **Day 0:** PO & Tech pack release • **Day 5:** Lab dip approval • **Day 12:** PP sample sign-off • **Day 28:** Inline AQL 2.5 check • **Day 38:** Final inspection certificate • **Day 42:** Ex-factory dispatch to Chennai / Tuticorin port.

2. KNIT FABRIC SELECTION & GSM WEIGHT MATRIX

Selecting the proper yarn gauge, fabric construction, and finishing directly determines hand-feel, drape, and unit cost. Below is Oger Knits' standard benchmark specification matrix for common apparel categories:

Fabric Type	Yarn Count	GSM Range	Ideal Application	Target Shrinkage
Lightweight Combed Jersey	34s/1 or 30s/1 Compact	150 - 160 GSM	Summer tees, undershirts, active lifestyle	< 4% L / < 4% W
Commercial Mid-weight Jersey	26s/1 or 24s/1 Combed	180 - 190 GSM	Standard brand graphic t-shirts, merch	< 5% L / < 4% W
Heavy Boxy Streetwear Jersey	16s/1 or 20s/1 Ring-spun	240 - 280 GSM	Oversized drop-shoulder streetwear tees	< 3% L / < 3% W
Classic Honeycomb Pique	26s/1 CVC or 100% Cotton	220 - 240 GSM	Corporate polos, school uniforms, golf wear	< 4% L / < 3% W
French Terry (Diagonal Loop)	24s face / 10s loop	280 - 320 GSM	Crewnecks, lounge joggers, light hoodies	< 5% L / < 4% W
Heavy 3-End Brushed Fleece	20s face / 10s fleece	380 - 450 GSM	Premium winter streetwear hoodies	< 3% L / < 3% W

3. COST ANATOMY CASE STUDY: $4.20 VS $8.50 T-SHIRT

Why does one 100% cotton t-shirt cost $4.20 FOB Tirupur while another costs $8.50? Understanding where pennies become dollars protects your margins and stops factories from silently substituting low-grade materials.

Cost Component	Commercial Grade Tee ($4.20 FOB)	Luxury Heavyweight Brand Tee ($8.50 FOB)	Cost Impact Driver
Yarn & Fiber	$1.35 (180 GSM, 24s/1 Semi-combed)	$3.10 (260 GSM, 16s/1 Long-staple Combed Compact)	+44% fabric weight + premium fiber staple
Knitting & Dyeing	$0.65 (Standard reactive dye, open-stenter)	$1.25 (Double azo-free bio-polish + enzyme wash)	Extended wash cycles and silicone hand-feel finishing
Cutting & Sewing (CMT)	$0.90 (Standard speed line, 10 SPI, poly thread)	$1.85 (Reinforced twin-needle, 13 SPI, split hem tape)	Stitch density, tape reinforcement, skilled floor time
Embellishment	$0.40 (1-color front waterbase screen print)	$0.90 (High-density puff print + 8K stitch sleeve embroidery)	Specialty ink cures, multiple print heads, stitch counts
Labels & Packaging	$0.25 (Heat transfer neck tag, thin polybag)	$0.55 (Woven damask label, custom hangtag, bio-polybag)	Custom branded trims and sustainable packaging specs
Testing, QC & Overhead	$0.65 (Factory standard batch QC & margins)	$0.85 (Full 3rd-party AQL 2.5 audit & shrinkage testing)	Independent lab testing, shrinkage certificates

MERCHANDISING BENCH NOTE: QUOTE NORMALIZATION

Buyer Costing Rule: *When comparing factory FOB quotes, never compare final unit price alone. Ask for yarn yield in grams per piece, machine gauge, and waste factor (typically 5-7% in Tirupur). A factory quoting 50 cents lower may simply be cutting neck rib width or under-specifying weight.*

4. FACTORY-READY TECH PACK SPECIFICATIONS & POM TOLERANCES

Factories cannot sew guesswork. A complete knitwear tech pack must provide clear Points of Measure (POM) and exact commercial tolerance limits. Standard knit t-shirt grading intervals (in Centimeters):

POM Code	Point of Measure Description	Tol (±)	XS	S	M (Base)	L	XL	2XL
POM 01	Body Length from High Point Shoulder (HPS)	**± 1.0**	68.0	70.0	**72.0**	74.0	76.0	78.0
POM 02	Chest Width (1" below armhole seam)	**± 1.0**	49.0	52.0	**55.0**	58.0	61.0	64.0
POM 03	Bottom Sweep / Hem Opening (Straight)	**± 1.0**	49.0	52.0	**55.0**	58.0	61.0	64.0
POM 04	Across Shoulder (Seam to Seam)	**± 0.5**	45.0	47.0	**49.0**	51.0	53.0	55.0
POM 05	Sleeve Length (from shoulder point)	**± 0.5**	20.5	21.5	**22.5**	23.5	24.5	25.5
POM 06	Armhole Depth (Straight from shoulder)	**± 0.5**	23.0	24.0	**25.0**	26.0	27.0	28.0
POM 07	Neck Width (Seam to Seam)	**± 0.5**	17.0	17.5	**18.0**	18.5	19.0	19.5
POM 08	Front Neck Drop (from imaginary line)	**± 0.3**	9.0	9.5	**10.0**	10.5	11.0	11.5
POM 09	Collar Rib Height / Band Width	**± 0.2**	2.2	2.2	**2.2**	2.2	2.2	2.2

5. HOW TO WRITE ACTIONABLE SAMPLE FIT COMMENTS

Vague subjective comments like *'collar fits weird'* or *'make chest slightly looser'* force patternmakers to guess, leading to multiple costly prototype iterations. Use quantitative pattern adjustment instructions:

Vague Buyer Comment (Avoid)	Accurate Technical Pattern Instruction	Patternmaker Root Cause Adjustment
'The neck hole is choking me.'	**'Increase front neck drop by +1.0 cm from HPS and widen neck opening by +0.8 cm.'**	Scoops front collar curve while keeping back neck rise stable to prevent back collar sagging.
'Shoulders look bunchy and slouchy.'	**'Reduce shoulder slope drop by 0.7 cm and decrease across-shoulder width by 1.5 cm total.'**	Corrects angle between collar seam and acromion bone point for crisp drape.
'Fabric under armhole is pulling and tight.'	**'Increase armhole depth by +1.0 cm straight down and widen bicep by +0.8 cm.'**	Relieves diagonal tension draglines across the upper bust line.
'Bottom hem flares out like a bell.'	**'Taper side seam inward by 1.5 cm at bottom sweep and tighten coverstitch tension.'**	Eliminates wave hem caused by fabric feeding too fast under twin-needle looper.

6. AQL 2.5 / 4.0 QUALITY CONTROL AUDITING STANDARD

Commercial knitwear export shipments are audited under ISO 2859-1 (ANSI/ASQ Z1.4) Normal Single Sampling Plan Level II. Oger Knits enforces strict classification thresholds across all orders:

Order Quantity (Units)	Sample Size Inspected	Critical Defect (Ac / Re)	Major Defect (AQL 2.5 Ac / Re)	Minor Defect (AQL 4.0 Ac / Re)
151 to 500	50 pcs	0 / 1 (Zero Tolerance)	3 / 4	5 / 6
501 to 1,200	80 pcs	0 / 1 (Zero Tolerance)	5 / 6	7 / 8
1,201 to 3,200	125 pcs	0 / 1 (Zero Tolerance)	7 / 8	10 / 11
3,201 to 10,000	200 pcs	0 / 1 (Zero Tolerance)	10 / 11	14 / 15
10,001 to 35,000	315 pcs	0 / 1 (Zero Tolerance)	14 / 15	21 / 22

DEFECT SEVERITY CLASSIFICATION BENCHMARK

• **Critical Defects (Ac 0 / Re 1):** Broken needle fragments in seams, sharp foreign objects, non-compliant azo/carcinogenic chemical dye levels, mold or mildew odor, missing mandatory country-of-origin / fiber content legal labels.
• **Major Defects (AQL 2.5):** Open seam hole > 0.5 cm, drop stitch run in body jersey, measurement out of tolerance limit by > 1.5 cm, noticeable fabric color shading between front and back panel, peeling print.
• **Minor Defects (AQL 4.0):** Loose uncut thread end > 1.5 cm (removable), minor removable chalk mark, slightly uneven bottom hem stitch tension (< 0.5 cm variance), wrinkled collar band pressable with steam.

7. HOW TO ENGAGE OGER KNITS FOR BULK MANUFACTURING

Oger Knits is a full-package knitwear manufacturer based in Tirupur, India, specializing in premium custom-dyed combed cotton apparel, streetwear heavyweight fleece, and high-performance corporate uniforms.

FACTORY PRODUCTION CAPABILITIES & TERMS:
• **Standard Custom-Dye MOQ:** 250 to 500 pieces per style/color (Lower MOQs supported for approved development programs).
• **Sampling Turnaround:** 7 to 10 working days from tech pack freeze and lab dip sign-off.
• **Bulk Production Delivery:** 30 to 45 calendar days ex-factory to Tuticorin / Chennai seaport or Coimbatore / Bangalore airport.
• **Factory Certifications:** OEKO-TEX Standard 100, Sedex SMETA 4-Pillar Social Compliance, GOTS Organic Cotton available.
• **Direct Merchandiser Desk:** Submit tech pack PDFs, BOMs, or RFQ queries directly via our main commercial manufacturing site at **https://ogerknits.com** or email **info@ogerknits.com**.