

OFFICIAL B2B ENGINEERING SPECIFICATION DOSSIER · VELLA-DOC-2026-05

48°C FORMULA COMPATIBILITY MATRIX & 4-GATE AQL ISO 2859-1 QC PROTOCOL

Laboratory Stability Testing & Pre-Shipment Inspection Standards (IQC · IPQC · FQC · OQC)

Executive Engineering Summary: Every Vella production order is governed by a locked Golden Sample and a 4-Gate AQL ISO 2859-1 General Inspection Level II protocol (Critical = 0, Major = 1.0-1.5, Minor = 2.5-4.0). Before balance payment is released, buyers receive a photographed OQC laboratory dossier.

1. Quantitative Engineering & Commercial Matrix

Formula / Test Category	Incompatible Material (Avoid)	Vella Recommended Specification	Laboratory Verification Protocol	Pass Criterion
Alcohol >30% (Perfume/Toner)	PC, PS, standard PMMA (crazing)	Super-flint glass or chemical-grade PETG	48C / 30-day immersion + crimp vacuum	Weight loss < =1.0%; 0 crazing
Low pH AHA/BHA & Vitamin C	Direct metal spring contact; standard NBR	External-spring airless PP or amber glass	48C / 30-day pH drift & discoloration	0 metal corrosion; stroke +-5%
Essential Oils & Facial Oils	Natural rubber / standard TPE dropper bulb	Fluorosilicone, vulcanised silicone or NBR	48C / 30-day inverted bulb swell test	Hardness change < =5 Shore A
Chemical SPF Filters	Thin-wall PS/AS; unlined PE single-layer	5-layer EVOH tube, ABL, or thick PP/HDPE	48C / 30-day environmental stress crack	Zero delamination or sweating
Surface Decoration Adhesion	Untreated PP/PE screen print or hot foil	Flame/corona treatment + UV cured ink	3M 600 tape 100-grid cross-hatch test	ISO 2409 Class 0 (< 2% flake)
Cross-Factory Color Match	Visual daylight check across different plants	X-Rite spectrophotometer master Pantone	D65 light booth + CIE Lab reading	Delta E < = 1.5 across range

2. Vella Six-Module Governance & Buyer Protection Commitments

Module 1-2 · Spec & Source
Brimful vs nominal verification, neck finish matching (18/410, 20/410, 24/410, FEA 15), and small-run routing from 500 to 2,000 units.

Module 3-4 · Sample & Mould
Spectrophotometer Pantone Delta E <= 1.5 across materials, 48C/30-day compatibility report, and 30/40/30 brand mould ownership.

Module 5-6 · 4-Gate QC & Ship
IQC/IPQC/FQC/OQC under AQL ISO 2859-1, -0.08 MPa vacuum test, 3M 600 tape test, and consolidated ISTA 3A export shipping.

Fast-Track Stage-1 Engineering Scope & Sample Dispatch (24-Hour SLA)

Send your target formats, capacities, decoration references, and run volume to **Alex Gao** at **alex@vellapack.com** or WhatsApp **+86 139 2512 2895** (Web: **vellapack.com/contact**). We return a line-by-line feasibility breakdown (Stock vs. Decorated Stock vs. Private Mould) within 24 hours.