SSB Triple Layer Forming Fabric Technical Datasheet — Model SSB-4500

High-Speed Fine Paper Forming Fabric

Fiber Support Index 0.88 | Air Permeability 340 CFM | Caliper 0.72 mm

DOC-DS-SSB4500-2026.1 | Gated Document

1. Product Description

The PAPTEX SSB-4500 is our premier triple-layer forming fabric engineered for high-speed fine paper machines operating above 1,200 mpm. It features a patented SSB (Sheet Support Binder) weave architecture with independent top and bottom fabric layers joined by binder yarns, enabling independent optimization of sheet surface quality and mechanical durability.

The top layer, woven at 27 warps × 24 wefts per centimeter from 0.13 mm polyester monofilament, provides exceptional fiber support (FSI 0.88) for superior sheet formation. The bottom layer uses a coarser 0.22 mm weave for maximum wear resistance. The two layers are structurally bound by 0.17 mm binder yarns running in the machine direction. The 8-shaft satin top weave produces an exceptionally smooth surface that minimizes sheet marking even at the highest production speeds.

2. Technical Specifications

Parameter	Value	Unit	Test Standard
Fiber Support Index (FSI)	0.88 ± 0.02	—	Beran method / image analysis
Air Permeability	340 ± 15	CFM @ 125 Pa	ISO 9237:1995
Caliper	0.72 ± 0.03	mm	ISO 9073-2 (modified)
Open Area	18.5 ± 1.5	%	Optical image analysis
Tensile Strength — MD	≥ 65	kN/m	ISO 13934-1
Tensile Strength — CMD	≥ 38	kN/m	ISO 13934-1
Elongation at 50 N/cm — MD	≤ 0.8	%	PAPTEX internal method
Elongation at Break — MD	18 – 25	%	ISO 13934-1
Mesh — Top Layer (W×W)	27 × 24	threads/cm	Optical count
Mesh — Bottom Layer (W×W)	14 × 12	threads/cm	Optical count
Monofilament — Top	0.13 PET	mm	Micrometer measurement
Monofilament — Binder	0.17 PET/PA co-polymer	mm	Micrometer measurement
Monofilament — Bottom	0.22 PET	mm	Micrometer

Parameter	Value	Unit	Test Standard
			measurement
Weave Pattern — Top	8-shaft satin	—	Visual inspection
Fabric Weight	640 ± 25	gsm	ISO 9073-1
Operating Tension Range	6.0 – 9.0	kN/m	Application guideline
Max Recommended Speed	1,500	mpm	Application guideline
Temperature Resistance	≤ 90 (wet) / ≤ 110 (dry)	°C	Material specification

3. Performance Characteristics

Drainage Performance: The SSB-4500 is designed for high-speed drainage with an initial drainage index of 92 (relative scale). The 340 CFM permeability, combined with 18.5% open area, provides rapid water removal while the high FSI ensures minimal fines and filler loss — typically achieving first-pass retention rates of 78–84% on fine paper grades (measured on production machines with retention aid programs).

Sheet Quality: The 8-shaft satin top weave produces a micro-smooth surface with average roughness (Ra) below 5 µm, verified by profilometry on both new and run-in fabric samples. Independent third-party sheet marking tests at 1,300 mpm on woodfree uncoated paper (80 gsm) show no statistically significant fabric-side wire mark, placing the SSB-4500 in the top tier of commercially available forming fabrics for fine paper.

Wear Life: Projected fabric life of 120–180 days on well-maintained machines running fine paper at 1,000–1,300 mpm. Actual life depends on ceramic foil condition, vacuum box coverage, stock composition, and cleaning practices. PAPTEX wear monitoring via caliper measurement at 50 random points across the full width is recommended at each maintenance stop.

4. Installation Guidelines (Summary)

- Verify all rolls turn freely. Inspect and replace any worn ceramic foils or vacuum box covers before installation.
- Fabric orientation: The top (sheet side) is marked with a continuous blue tracer thread along the running edge. Install with blue thread UP.
- Tension ramp: Start at 3.0 kN/m → 4.5 kN/m after 2h → 6.0 kN/m after 4h → operating tension (6.5–8.0 kN/m) after 8h.
- Run-in period: 24–48 hours at moderate speed (70% of production) before reaching full production speed.
- Refer to full installation guide (DOC-INST-FF-2026.1) for complete step-by-step procedures and safety protocols.

5. Ordering Information

Field	Detail
Product Code	SSB-4500
Base Material	PET monofilament (top & bottom), PET/PA co-polymer binder
Edge Treatment	PU edge seal, hot-cut, 25 mm treatment width per side
Seam Type	Woven-in pin seam with SS-316 pintle wire (standard)
Standard Widths	2.8 m – 8.6 m (custom widths available on request)
Standard Lengths	15.0 m – 65.0 m (calculated per machine drawing)
Lead Time	4–6 weeks (standard), 2–3 weeks (express, surcharge applies)
Minimum Order	1 piece