



Fabric Inspection & Condition Monitoring Checklist

Comprehensive inspection guide for all paper machine clothing
Wear patterns · edge condition · seam integrity · contamination assessment with
photo reference

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1. Introduction & Inspection Philosophy

Systematic fabric inspection is the foundation of predictive maintenance for paper machine clothing. Rather than running fabrics to failure – which risks unplanned downtime, sheet quality incidents, and safety hazards – a structured inspection program identifies degradation patterns early, enabling scheduled replacement at the optimal economic point. The goal is to replace the fabric one cycle before failure, not one cycle after it.

This checklist is designed for use by machine tender personnel (daily quick checks) and maintenance engineers (weekly/monthly detailed inspections). Every inspection should be documented. Individual data points are interesting; trend data over multiple inspections and multiple fabric lives is genuinely valuable – it reveals degradation rates, predicts remaining life, and enables continuous optimization of fabric specifications.

2. Inspection Frequency & Roles

Inspection Level	Frequency	Performed By	Scope
Level 1 – Quick Check	Every shift (8–12 hrs)	Machine tender	Visual scan: tracking, edge condition, obvious damage, shower operation
Level 2 – Detailed	Weekly	Shift supervisor / engineer	Full checklist; caliper & tension measurements; seam close-up inspection
Level 3 – Comprehensive	Monthly or at shutdown	Maintenance team + PAPTEX rep	Full measurements; photographic documentation; trend analysis vs. history
Pre-replacement Audit	Before scheduled change	PAPTEX application engineer	Complete post-mortem: what worked, what didn't, specifications for next fabric

3. Common Failure Patterns – Recognition & Response

Pattern	Appearance	Root Cause	Corrective Action
Abrasive wear – foils	Linear MD grooves, shiny surface	Worn ceramic foils; excessive vacuum box levels	Replace foils; reduce vacuum to minimum required
Abrasive wear – fillers	Uniform thinning, dull/matte surface	High-filler stock; insufficient fabric washing	Increase shower pressure; consider batch chemical clean
Edge curl / fold-over	Fabric edge rolls under; MD fraying	Guide paddle pressure too high; roll misalignment	Reduce paddle pressure to 0.2 bar; realign rolls
Seam failure – open loops	Gaps at seam; pintle wire visible	Insufficient tension; undersized pintle wire	Set tension per guidelines; verify pintle diameter spec

Pattern	Appearance	Root Cause	Corrective Action
Center wrinkle	Longitudinal wrinkle in center third	Tension too low for fabric width; width shrinkage	Increase tension 0.5 kN/m; verify fabric width vs. machine
Foreign object impact	Clean hole, often with broken filaments	Bolt, tool, or stock lump passing through nip	Patch if <100 mm; replace section if larger; investigate source
Batt delamination (press)	Batt separating from base; blister or bubble	Excessive shower pressure; chemical attack; fatigue	Reduce shower pressure; verify chemical compatibility immediately
Chemical degradation	Brittle, discolored filaments	Wrong cleaning chemical; pH outside safe range	Stop chemical immediately; flush 30 min with fresh water; review protocol

4. Condition Scoring System

Assign a score of 1–5 for each inspection area at every Level 2/3 inspection. Plot scores over time to visualize degradation trends. A score dropping from 4 to 3 over two inspections is not alarming; a drop from 4 to 2 in one inspection demands immediate investigation.

Score	Condition	Description	Action Required
5	Excellent	As-new condition; all parameters within 5% of nominal specification	None – continue scheduled inspections
4	Good	Minor visible wear; all parameters within 10% of nominal	Continue monitoring; next inspection on normal schedule
3	Fair	Moderate wear; some parameters outside 10% tolerance	Plan maintenance intervention; increase inspection frequency to 2× normal
2	Poor	Significant degradation; approaching end of reliable service life	Order replacement fabric; schedule change within 4 weeks maximum
1	Critical	At or beyond safe operating limit; risk of near-term failure	Immediate action: reduce speed/tension; change fabric at next available window