The Packaging Troubleshooting Wall Chart

Symptom → most likely cause → first fix → **whose problem**. Condensed from the PackOS diagnostic library — full guides at packos.ai/blog/

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ASK ① — WHEN DID IT FAIL?

Visible in the file or proof → **before** production (spec). On finished units but not the file → **during** (process). Only after shipping, filling, or storage → **after** (handling).

ASK ② — CONSISTENT OR RANDOM?

Every unit → a fixed cause: the spec, or a press/seal setting wrong for the whole run. **Some units** → a variable: temperature, humidity, contamination, a lot change, a worn tool.

WHO OWNS THE FIX

SPEC usually yours — material, adhesive, board, seal film, dieline, tolerances.
PROCESS usually your supplier's — press, seal, application, cure, registration.
HANDLING downstream — transit, humidity, stacking, the fill line.

The families: labels come down to adhesion · pouches to the seal and the film · corrugated to load vs derated strength · print to what the proof actually promised. Keep evidence: photos, failed + good units, lot numbers, the proof next to the sample.

SYMPTOM	MOST LIKELY CAUSE	FIRST FIX	WHOSE PROBLEM
LABELS & ADHESION			
Labels bubble or peel after application	Adhesive wrong for a low-energy plastic (PE/PP), or a dirty, cold, or wet surface — with too little pressure and dwell.	Match the adhesive to the substrate; clean & dry the surface; apply warm, press firmly, and let the bond build (roughly 24 h is typical) before judging it.	SPEC wrong adhesive/stock · PROCESS dirty, cold, unpressed application
Label edges lift on tubes & small bottles (flagging)	Face stock too stiff for the diameter — springback levers the edge up; too little wrap overlap leaves the seam on bare container.	Thinner, conformable film first; then overlap so the seam lands on label, an aggressive adhesive, a warm clean surface. Stronger glue alone rarely fixes it.	SPEC if a careful hand-applied label still flags · PROCESS tension, cold, dwell on the line
Labels won't stick at all	Low-surface-energy plastic (PE, PP, HDPE) repelling a general-purpose adhesive; or oils, dust, mold-release, condensation in the way.	Identify the substrate; spec an adhesive rated for it and the end environment (freezer, wet, outdoor). Wipe with IPA, dry fully, apply above the adhesive's minimum temperature.	SPEC adhesive vs surface · PROCESS prep & temp. A clean, warm control label settles it
Labels jam or double-feed the applicator	The roll, not the machine: unwind direction, kiss-cut depth (cut into the liner = web breaks), gap too small, wrong liner or core — often a new lot drifted.	Read the roll before re-tuning: unwind vs the machine diagram, liner intact behind the die-cut, gap the sensor needs (≈3 mm is a typical start), core & OD fit.	PROCESS roll off the ordered spec → converter; in-spec rolls that still jam → your setup, tension, wear
POUCHES & FLEXIBLE			
Pouch seal weak, peels open, or patchy	Seal triad — temperature, pressure, dwell — outside the film's window (clean peel, no film tear), or the wrong sealant film, which no setting can save.	Set the triad to the film supplier's window, change one variable at a time, confirm with a seal-strength pull. Faster line = less dwell — add heat to compensate.	PROCESS intermittent = triad, jaws, contamination · SPEC consistent at correct settings = the film
Pouch leaks — often at a gusset corner	Channel leak: product, a wrinkle, or a gusset fold trapped in the weld left an unsealed path. Flex-cracked foil pinholes leak with no visible hole.	Locate before adjusting anything: dye tells seal channel from film breach; water submersion pinpoints it; vacuum decay proves a lot. Then keep product out of the seal zone.	PROCESS channels on the line · SPEC film too thin · HANDLING flex-crack in transit
Laminate layers separate (tunneling, blisters, edge lift)	A lamination bond failure, not the seal: adhesive under-coated or under-cured; blisters over heavy ink point to trapped solvent or ink starving the bond.	Hand-peel a corner — an easy, clean peel means the bond never built. Ask the converter for coat weight & full cure before slitting; keep heavy ink out of bond & seal zones.	PROCESS usually the converter's lamination · SPEC structure vs product chemistry. Never ship delaminated stock
CORRUGATED & CARTONS			
Boxes crush in transit	Board specced to its lab BCT, not the derated working load: humidity (can roughly halve strength), stacking time (creep), pallet overhang, misalignment.	Spec board to the derated stack load; right-size to remove headspace; column-stack corner-over-corner; keep every box on the pallet deck; keep it dry.	SPEC+HANDLING most crush · PROCESS fresh dry boxes failing below the Box Maker's Certificate → test the board
Carton cracks on the fold, pops open, won't square	Score too shallow, or the fold runs against the board grain (one direction cracks, the other folds clean); pop-opens = glue on a coated tab or no compression.	Correct the score depth; run body folds with the grain (a layout decision — settle it before tooling); keep heavy ink off creases; leave the glue tab uncoated; add compression & dwell.	SPEC consistent on every unit = grain, dieline, coating · PROCESS intermittent = score, glue, gluer setup
PRINT & COLOR			
Print doesn't match the proof	The approved proof was never a color contract — a soft proof shows layout, not color. Also: RGB art clipped to CMYK, spot colors built as process, substrate ignored.	Approve color only on a contract proof made to the production press intent; keep brand colors as named spots; agree a numeric delta-E tolerance in writing; measure the first sheets.	Shared — SPEC no contract proof or tolerance existed · PROCESS a written target was measurably missed
Brand color drifts between runs	No fixed, measured target — each batch is matched by eye to a moving reference, so substrate lots, ink batches, and press condition push it around.	Make the color a number (named spot or measured Lab target); write the tolerance into the PO; lock substrate & process on reorders; verify each run with a spectrophotometer.	SPEC no target was ever given · PROCESS written target provided and still missed without flagging
Not sure the proof is safe to sign	A proof only promises what its type covers: soft = content, contract = color, 3D render = structure, press proof = closest to production truth.	Check dieline, bleed & safety; proofread live copy; scan the barcode & its quiet zone; confirm spots stayed spots and white ink on clear; put proof type & tolerance in writing.	Yours after signing — errors visible on the proof transfer to you; out-of-tolerance production stays the supplier's

Rules of thumb above are typical starting points, not specs — confirm exact settings, windows, and tolerances against your film, board, adhesive, and machine documentation, and confirm any regulated copy or labeling requirement with the relevant authority. Deep-dives for every row: packos.ai/blog/packaging-problems-guide.html

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