



Cold Foil Defect Diagnosis Sheet

Press-side worksheet for diagnosing visible cold foil defects

This worksheet helps operators record the visible defect first, then check likely causes in substrate condition, adhesive transfer, foil tension, nip pressure, UV curing, registration and contamination. It is not a lab report. It is a practical troubleshooting sheet for press-side diagnosis and supplier communication.

This document is a practical worksheet, not a certification, lab report or guarantee of performance. All values are general starting points only and must be confirmed by press trial on your own substrate, ink system, UV adhesive, foil grade, press speed and curing conditions.

Defect diagnosis table

Defect symptom	What it looks like	Likely causes	First checks	Fix order	Photo / notes
1. Poor foil transfer	Weak, thin or patchy metal on the adhesive image.	Low adhesive volume, wrong adhesive grade, low nip pressure, foil side reversed, low surface energy.	Foil side, adhesive station, anilox, nip.	1 foil side → 2 adhesive → 3 nip → 4 substrate	
2. Pinholes	Small unfoiled dots inside solid areas.	Dust, low adhesive film, worn anilox cells, substrate pitting, air entrapment.	Anilox cleanliness, web cleanliness, adhesive volume.	1 cleanliness → 2 anilox → 3 adhesive	
3. Missing foil areas	Whole zones with no transfer.	Web path wrinkle, foil web narrower than image, tension loss, foil splice passing through.	Foil width vs image, splice log, tension trace.	1 web path → 2 tension → 3 foil width	
4. Edge halo	Metal shadow outside the intended image edge.	Excess adhesive, squeeze-out at high nip pressure, plate/tape too soft, adhesive too low viscosity.	Adhesive volume, nip setting, tape hardness.	1 adhesive → 2 nip → 3 tape/plate	
5. Wrinkles	Linear creases with distorted or doubled foil.	Foil tension too low or uneven, misaligned idlers, roller deposits, web guide error.	Unwind tension, idler alignment, roller surfaces.	1 tension → 2 alignment → 3 roller clean	
6. Scratches	Fine directional marks through the metal layer.	Contact with fixed parts after transfer, rewind rub, hard nip on cured foil, debris on rollers.	Post-nip web path, rewind, roller debris.	1 web path → 2 rewind → 3 clean rollers	
7. Mottled metallic effect	Cloudy or uneven brightness in solids.	Uneven nip across the web, uneven substrate coating, adhesive film variation, partial cure.	Nip both sides, substrate lot, adhesive film.	1 nip → 2 adhesive → 3 substrate → 4 UV	
8. Poor adhesion	Foil lifts on tape pull or during converting.	Under-cure, incompatible ink/coating below the foil, slip additives, wrong adhesive grade, contamination.	UV dose at run speed, ink deck, adhesive grade.	1 UV → 2 ink/coating → 3 adhesive grade	
9. Over-cure / under-cure symptoms	Brittle, cracking foil edges (over) or tacky, soft, poorly bonded film (under).	Lamp output drift, speed change without lamp change, dirty reflectors, wrong lamp type.	Lamp hours, reflectors, speed vs dose record.	1 lamp condition → 2 dose vs speed → 3 adhesive	
10. Registration drift	Foil image moves relative to print along the run.	Web tension change, substrate stretch, temperature change, unwind diameter effects.	Tension trace start/mid/end, temperature, unwind.	1 tension → 2 substrate → 3 press settings	

Information to send CFS

☐ Substrate type	☐ Ink system	☐ UV adhesive
☐ Foil grade or effect	☐ Press type	☐ Press speed
☐ UV lamp condition	☐ Defect photos	☐ Sample roll or printed sheet photos



Run record: substrate lot, foil lot, speed, lamp hours, date of trial

Next step: Request a cold foil defect diagnosis from CFS. coldfoilstamping.com/contact