

DSS-Co.02.02 | Coating Anomalies

Surface Rub / Scuff (Pyrolytic Hard-Coat Appearance Change)

Pyrolytic [hard-coat] low-E anomaly - contact/rub during handling/cleaning producing localized sheen shift or faint mottle on the coated face; generally planar optical change in the coating; typically SC-0, occasionally SC-1 where micro-imprint exists; confirm coated face before attribution

Diagnosis summary

Surface rub / scuff (pyrolytic) is an appearance change confined to pyrolytic (hard-coat) functional coatings where contact, wiping, or pad/roller kiss produces localized sheen shift or faint mottle without discrete linear chip flanks or pits. The effect is planar within the coating and is usually non-tactile. Classification is appearance-only per VIS (method-agnostic).

Field identification cues

- Surface-catch class (MSRT)
- SC-0 typical (planar optical change).
- SC-1 localized only if a very light micro-imprint/texture is present (e.g., pad weave ghost).
- Perform one light, non-marring pass on a small revealed test patch; polymer stylus only on suspected coated faces. MSRT supports classification only; do not abrade the coating.

Classification, severity and scope

- Assign CAT by visibility at acceptance geometry and MSRT.
- CAT-1 (Benign / non-relief): Faint rub panel visible mainly at oblique/raking; SC-0. Indicative relief: 0-10 µm (optical only).
- CAT-2 (Light): Discernible sheen shift at standard distance in certain lighting; SC-0 (or SC-1 localized if micro-imprint present). Indicative relief: ~10-40 µm (apparent optical).
- CAT-3 (Moderate): Pane-noticeable patch/panel at standard distance affecting uniformity; SC-0/SC-1. Indicative relief: ~40-120 µm (apparent optical).
- Reclassify when: Parallel periodic bands at fixed pitch → Co.02.01 roller ghosting; linear chip-flank grooves → M.01 scoring; modeled chemical micro-texture with runs/meniscus → V.02/Ch.01; peppered.

Distinguishing criteria

- vs. Co.02.01 roller ghosting: Roller ghosting shows parallel bands with regular pitch; rub/scuff is localized with soft boundaries and no fixed pitch.
- vs. M.02 abrasion swirls: Abrasion swirls show directional/swirl patterning and often SC-1 across paths; Co.02.02 lacks coherent swirl geometry and remains largely SC-0.
- vs. Ch.03 mineral film/etch: Mineral systems show ring/run geometry and can be SC-1/SC-2; Co.02.02 is planar and non-ringed.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; raking macros across rub panel boundary; overview frames to show localization. Record distance/angle in-frame.
- Face ID + MSRT. Confirm coated surface; MSRT (polymer stylus only) on revealed patch: record SC-class (SC-0 typical; SC-1 localized if present).
- Context notes. Handling/maintenance history; cleaning media used; adjacency to contact points (pads, rails, suction cups).

Safety / repairability boundary: Complete only the non-invasive reveal and inspection steps authorized by the controlling VIS guidance. Classification does not authorize restoration, establish acceptance, or override stop-work, coating, crack, integrity, access, chemical, fall-protection, or project-specific requirements.

Full DSS publication: use the catalog download. Web specification:

<https://a7df714357.nxcli.io/learning-center/resource-center/damage-specification-standards/dss-co-02-02-surface-rub-scuff-pyrolytic-hard-coat-appearance-change/>