

DSS-U.01.04 | Uncertain / Mixed Mechanisms

Directional Patterning with Intermittent Chip Flanks (Uncertain Tool/Pad)

Unknown/mixed mechanism - directional lines/arcs with periodic edge sparkle and variable relief; suggests intermittent hard-point contact within an otherwise pad/cloth motion; SC-1 along most paths with localized SC-2 "spikes" at higher-pressure segments or entrained particulates

Diagnosis summary

Directional patterning with intermittent chip flanks is an appearance change characterized by linear or arced paths (often repeating in lanes or sweeps) where most of the path reads as shallow abrasion (SC-1) but localized segments exhibit chip-flank sparkle (SC-2) indicative of momentary hard-point contact (entrained grit, damaged pad edge, nicked squeegee, or tool corner).

Field identification cues

- Surface-catch class (MSRT)
- Predominantly SC-1 along the abrasion path (shallow micro-texture).
- SC-2 at intermittent sparkle points where a hard particle/edge dug briefly (micro-chipping visible under raking).
- Perform one light, non-marring pass on a small revealed test patch crossing (a) matte path and (b) sparkle nodes; record both responses. Use a polymer stylus if a functional coating is suspected. MSRT supports classification only.

Classification, severity and scope

- Assign CAT by visibility at acceptance geometry and MSRT. Depth values are indicative-field measurement not required.
- CAT-2 (Light): Few lanes; nodes infrequent; SC-1 predominant with rare SC-2 pin-points; minimal standard-view impact. Indicative relief: path ~10-40 µm; nodes ~20-60 µm.
- CAT-3 (Moderate): Multiple lanes or dense arcs legible at standard distance; regular SC-2 nodes at overlaps/apexes. Indicative relief: path ~40-120 µm; nodes ~60-150 µm.
- CAT-4 (Severe): Wide-area patterning across panels, frequent SC-2 nodes, occasional short incised segments; pane appearance compromised at standard and wide-field views.
- Reclassify when (dominance clarifies mechanism):

Distinguishing criteria

- vs. M.02 Abrasion fields: M.02 shows broad directional haze or swirl webs with consistent SC-1 and lacks discrete SC-2 nodes.
- vs. M.01 Scoring: Scoring yields continuous sharp grooves with chip flanks along most of the line, not intermittent.
- vs. V.01.02 Scribed marks: Scribing forms intentional letters/icons with consistent groove relief; U.01.04 shows maintenance-like paths and pressure-dependent nodes.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; raking macros capturing (a) matte path and (b) sparkle node; overview frames to show lane spacing/rhythm.
- MSRT results: After a small reveal test patch, record SC-class along path (SC-1), at node (SC-2), and outside control (SC-0).
- Forms: Pane ID; product family & surface numbering; worked surface Y/N; functional coating on worked surface?

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-u-01-04-directional-patterning-with-intermittent-chip-flanks-uncertain-tool-pad/>