

DSS-Co.04.01 | Coating Anomalies

Mottle / Cloudiness (Spandrel & Back-Paint Systems)

Back-paint/ceramic-coated opacity system anomaly - non-uniform opacity or "clouding" visible in reflection/transmission (as designed); planar within paint/frit layer on non-viewable side; typically SC-0 from glass side; confirm system build and coated face before attribution

Diagnosis summary

Mottle/cloudiness (spandrel/back-paint) is an appearance change confined to opaque or semi-opaque coatings applied to the non-viewable side of glass (e.g., spandrel back-paint, ceramic frit behind glass, back-coated vision bands). It presents as patchy opacity/density variation, clouding, or tone shifts that are planar within the back-coating and typically non-tactile from the glass side.

Field identification cues

- Surface-catch class (MSRT)
- From the viewing (glass) side, SC-0 (planar change behind the glass).
- Do not perform MSRT on the back-coating face in situ. MSRT supports classification only on the viewing surface.
- Visual signature

Classification, severity and scope

- Assign CAT by visibility at acceptance geometry (from the viewing side). Depth values below are apparent optical, not substrate relief.
- CAT-1 (Benign / non-relief): Faint cloudiness legible mainly at oblique/raking; SC-0 at the viewing surface. Indicative relief: 0-10 µm (optical only).
- CAT-2 (Light): Discernible mottle at standard distance in specific lighting; SC-0 viewing surface. Indicative relief: ~10-40 µm (apparent optical).
- CAT-3 (Moderate): Pane-noticeable non-uniformity at standard distance affecting perceived uniformity across a field; SC-0 viewing surface. Indicative relief: ~40-120 µm (apparent optical).
- Reclassify when: If features show ring/run geometry on the viewing face → consider Ch family; if linear chip-flank grooves are present → M.01 scoring; if peppered fused nodules are visible → Th.01 hot.

Distinguishing criteria

- vs. Vision-lite coating anomalies (Co.02/Co.03): Spandrel/back-paint presents on non-vision/opaque zones and reads as opacity density change, not AR/low-E interference shifts.
- vs. Chemical films (Ch): Chemistry on the viewing face shows rings/runs/etch and may yield SC-1/2; Co.04.01 remains planar SC-0 on the viewing surface.
- vs. Abrasion fields (M.02): Abrasion has directional texture and SC-1; spandrel mottle lacks surface relief.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; broad specular and ambient back-lit frames to show density differences; raking macros confirming smooth viewing surface.
- Face/System ID. Confirm spandrel/back-paint face and system build (shop drawings, submittals).
- MSRT (viewing surface only). SC-0 expected; record result to distinguish from surface abrasion or chemical attack.

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-04-01-mottle-cloudiness-spandrel-back-paint-systems/>