

DSS-P.01.03 | Processing / Manufacturing Features

Quench / Anisotropy Patterning (polarization-visible)

Processing / Manufacturing feature - reference; generally not “damage”

Diagnosis summary

A spatial variation in optical response (anisotropy) characteristic of heat-treated glass caused by non-uniform cooling in the quench. It presents as bands, mottling, or “zebra/leopard” tonal shifts that are most evident in reflection/transmission at oblique angles and may be accentuated by polarized viewing. It is a factory feature of the product-not a localized surface-relief defect.

Field identification cues

- Surface-catch class (MSRT):
- SC-0 (none). Perform one light, non-marring pass only to confirm no tactile relief; do not abrade or repeat passes.
- Visual signature:
- Pane-scale mottle/banding without a transition edge; no chip flanks, no pits/craters, no modeled micro-texture typical of chemical etch. Evaluate at 12/36/72 in with normal + oblique sweep under VIS lighting.

Classification, severity and scope

- Not field damage. Quench/anisotropy is a processing/optical feature and is not categorized as CAT-1...CAT-4.

Distinguishing criteria

- vs. Roller wave (P.01.01): Roller wave shows periodic banding (short wavelength) tied to roll contact; anisotropy can be mottled/banded but is polarization-sensitive and not periodic.
- vs. Bow/warp (P.01.02): Bow/warp is global shape (straight lines bend smoothly); anisotropy is optical mottle/banding without uniform curvature. Both lack transition edges and surface catch.
- vs. Low-E coating rub/patchiness (Co.01.02): Coating rub produces localized sheen/color shifts and can create a worked boundary or directional scuffs.

Documentation and inspection

- Photo set at VIS geometry: 12 / 36 / 72 in, normal + oblique; include a straight-line reflection (mullion/string line) where practical; note whether raking was used.
- MSRT result: Record SC-0; one pass only; no abrasion.
- Forms: Pane ID; surface numbering (#1-#4; laminate-internal); coating present Y/N/Unknown; non-invasive reveal completed (Y/N); lighting notes/time.

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-p-01-03-quench-anisotropy-patterning-polarization-visible/>