

DSS-Ch.06.02 | Chemical Attack / Etch / Reaction

Hydrophobic Coating Mismatch Halo

Chemical/interaction - on-glass hydrophobic coating applied/removed unevenly; water-behavior edge, optical halo/veil ± shallow micro-texture

Diagnosis summary

Hydrophobic coating mismatch halo is an appearance change caused by uneven application, partial removal, or edge-lap of an on-glass hydrophobic coating (e.g., rain-repellent, DIY nano-sealant). The result is a water-behavior discontinuity and an optical halo/veil at the boundary between coated and uncoated (or differently coated) zones; long UV/soil exposure may leave very shallow micro-texture at the boundary.

Field identification cues

- Surface-catch class (MSRT)
- Typically SC-0 (film/wetting difference only).
- SC-1 (slight) can appear on aged/UV-baked boundaries where organics cross-link with dust/soot; SC-2 uncommon.
- Perform one light, non-marring pass on a revealed test patch; use a polymer stylus if a functional coating is suspected. MSRT supports classification only.

Classification, severity and scope

- Assign CAT by visibility impact and MSRT after reveal. Depth values are indicative-field measurement not required.
- CAT-1 (Benign / non-relief): Water-behavior edge/optical halo only; SC-0; visible mainly at angle or with wetting test. Indicative relief: 0-10 µm (optical).
- CAT-2 (Light): Persistent halo/veil with slight SC-1 at aged boundary; limited impact at standard view. Indicative relief: ~10-40 µm.
- CAT-3 (Moderate): Broader boundary zones legible at standard distance (dirty tide line, non-uniform sheen) with SC-1→SC-2. Indicative relief: ~40-120 µm.
- CAT-4 (Severe): Rare for hydrophobics alone; if extensive matte fields occur, consider mixed chemistry (alkaline + coating residue + UV/soiling) and re-evaluate under applicable DSS.

Distinguishing criteria

- vs.
- vs. Mineral staining/etch (Ch.03): Mineral issues show rings/runs and modeled micro-texture; mismatch halos are sharp wetting edges with usually SC-0 substrate.
- vs. Residue films (R-family): General films lack sharp water-behavior lines and often clear uniformly at reveal.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; include raking macros of the boundary line and adjacent veil. Record distance/angle in-frame.
- Wetting behavior documentation (supplemental). Light mist test across the boundary; photograph immediate beading/sheeting contrast. Avoid flooding edges/IGU seals.
- MSRT result: One light, non-marring pass on a clean test patch at/near the boundary; record SC-class (SC-0/SC-1/SC-2).

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-ch-06-02-hydrophobic-coating-mismatch-halo/>