

DSS-E.03.03 | Environmental Exposure / Weathering

Tree Sap / Organic Exudate Shadow

Biological/organic residue & shadowing - resin/exudate droplets, smears, UV-browned films; amber tacky spots, stringers, wetting anomalies; typically SC-0 for fresh residue, localized SC-1 where long dwell/UV causes very shallow micro-texture; reclassify to chemical etch if substrate matte persists

Diagnosis summary

Tree sap / organic exudate shadow is an appearance change on glass arising from plant resins/exudates (e.g., conifer resin, honeydew, plant gums) that deposit as amber droplets/films and may brown under UV. It presents as tacky amber spots, stringy smears, or browned films with distinct wetting anomalies; after removal, a shadow (tone change) may remain where long dwell + UV altered the near-surface.

Field identification cues

- Surface-catch class (MSRT)
- SC-0 for fresh/tacky residue (film on top).
- SC-1 where long dwell/UV leaves very shallow micro-texture or resin entraps fine grit; SC-2 is atypical-if present after true residue lift, reassess for Ch.01/Ch.02 chemical etch or Ch.03.03 mineral etching.
- Perform one light, non-marring pass on a small revealed test patch (substrate). Use 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 after a true residue lift test on a contained patch. Depth values are indicative-field measurement not required.
- CAT-1 (Benign / non-relief): Discrete amber droplets/film; SC-0; angle/raking visible; lifts on reveal test patch without shadow. Indicative relief: 0-10 µm (optical film).
- CAT-2 (Light): Persistent "shadow" or slight wetting contrast after residue lift with localized SC-1; limited standard-view impact.
- CAT-3 (Moderate): Wide-area browned film/shadowing legible at standard distance, scattered SC-1; indicates long dwell + UV or repeated deposition. Indicative relief: ~40-120 µm.
- Reclassify when: After true residue removal, if modeled substrate micro-texture persists (non-directional matte with SC-1/2) → evaluate E.01.02 atmospheric matte or Ch.02 alkaline attack depending on.

Distinguishing criteria

- vs. Kitchen grease/HVAC oil (R.04.03/04): Those are oily/amber veils tracing air paths; sap shows discrete beads/stringers and aligns with tree drip geometry.
- vs. PVC plasticizer smear (R.05.02): PVC films are oily amber with strong wetting anomalies along component contact; sap is tacky, often with meniscus beads and seasonal context.
- vs. Mineral staining/etch (Ch.03): Mineral halos are white/grey crystalline-edged; sap amber/brown, sometimes leaves color shadow after lift without crystalline rims.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; raking macros of droplet meniscus, stringers, and post-lift shadow boundary; context frames showing canopy/drip line.
- MSRT result (substrate): After a small reveal test patch and true residue lift, perform one light, non-marring pass; record SC-class (SC-0/SC-1/SC-2).
- Forms: Pane ID; product family & surface numbering; worked surface Y/N; functional coating present 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-e-03-03-tree-sap-organic-exudate-shadow/>