

DSS-E.03.04 | Environmental Exposure / Weathering

Avian Residue Acid Shadow

Biological/organic residue & acid shadowing - bird droppings with urates/organics; discrete splats with radial feathering, white urate crust; post-lift color/shine "shadow"; typically SC-0 for fresh residue, localized SC-1 where long dwell/heat induces very shallow micro-texture; reclassify to chemical etch if substrate matte persists

Diagnosis summary

Avian residue acid shadow is an appearance change on glass produced by bird droppings (mixture of uric acid/urates, water, organics) that deposit as discrete splats and may bleach or dull the underlying glass after removal, leaving a color/shine "shadow." High dwell time, sun/heat, and repeated incidents increase the likelihood of near-surface alteration. Classification is appearance-only per VIS (method-agnostic).

Field identification cues

- Surface-catch class (MSRT)
- SC-0 for fresh/dry crust (residue on top).
- SC-1 localized if long dwell + heat produced very shallow micro-texture or trapped grit; SC-2 is atypical-if present after true residue lift, reassess for Ch.01 (acid attack) or Ch.03.03 (mineral etching).
- Perform one light, non-marring pass on a small revealed test patch (substrate). 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 after a true residue lift test on a contained patch. Depth values are indicative-field measurement not required.
- CAT-1 (Benign / non-relief): Discrete splat residues that fully lift on reveal; SC-0; visible mainly at angle/raking. Indicative relief: 0-10 µm (optical film/crust only).
- CAT-2 (Light): Post-lift shadow (minor gloss/tone change) with localized SC-1; limited standard-view impact. Indicative relief: ~10-40 µm (incipient near-surface change).
- CAT-3 (Moderate): Multiple/overlapping splat shadows legible at standard distance, scattered SC-1; indicates long dwell, heat exposure, or repeated incidents. Indicative relief: ~40-120 µm
- Reclassify when: After true residue removal, if modeled matte persists with SC-1/2 beyond the splat footprint → consider Ch.01 (acid attack); if crystalline ring/etch halo consistent with hard-water.

Distinguishing criteria

- vs. Mineral staining/etch (Ch.03): Minerals present white/grey crystalline rings with run mapping; avian shows distinct splat morphology with urate crust and radial feathering.
- vs. Organic sap (E.03.03): Sap is amber/tacky with stringers; avian is white/grey crust with organic center and splat geometry.
- vs. Detergent/surfactant film (R.04.01): Detergent shows wipe streaks/iridescence; avian shows radial splash, ring, and localized post-lift shadow.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; raking macros of splat edge, feathering, post-lift shadow boundary; context frames showing perch/nesting features above.
- 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-03-04-avian-residue-acid-shadow/>