

DSS-E.01.02 | Environmental Exposure / Weathering

Atmospheric Corrosion Matte (SOx/NOx / “Acid Rain”)

Environmental attack - pollutant-assisted weathering of soda-lime glass surfaces; non-directional milky matte, loss of specular clarity, rivulet/edge bias from runoff; typically SC-1 when micro-texture forms; SC-0 if only residue present

Diagnosis summary

Atmospheric corrosion matte is an appearance change on glass driven by acidic or pollutant-laden moisture (e.g., SOx/NOx, industrial emissions) and cyclic wet/dry exposure, producing surface hydration/leaching and very fine micro-texture. It presents as a non-directional, low-contrast milky haze that reduces specular clarity and can map runoff/edge dwell. Classification is appearance-only per VIS (method-agnostic).

Field identification cues

- Surface-catch class (MSRT)
- SC-0 when only residue/films remain pre-etch (reveal patch clears to clarity).
- SC-1 when micro-texture exists (slight tactile interruption without chip flanks); SC-2 uncommon-if present, re-evaluate for Ch.03.03 mineral etching or M.02 abrasion fields.
- 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 reveal patch. Depth values are indicative-field measurement not required.
- CAT-1 (Benign / non-relief): Slight veil removable on reveal patch; SC-0; visible mainly at angle/raking. Indicative relief: 0-10 µm (optical film only).
- CAT-2 (Light): Persistent non-directional matte post-reveal with SC-1 in zones; limited standard-view impact. Indicative relief: ~10-40 µm (incipient micro-texture).
- CAT-3 (Moderate): Wide-area milkiness legible at standard distance; consistent SC-1; reflects long dwell/high exposure. Indicative relief: ~40-120 µm.
- Reclassify when: Distinct rings/runs with crystalline edges dominate → assess Ch.03.02 Mineral staining; etched fields with directional marks → consider M.02 abrasion overlay; pits/nodules → Th.01 hot.

Distinguishing criteria

- vs.
- vs. Mineral system (Ch.03): Minerals exhibit rings/runs and may transition to etch halos; atmospheric matte is more global, edge-biased, and non-crystalline.
- vs. Fabric softener/additive film (R.04.02): Additive films show strong wetting contrast and fragrance; atmospheric matte shows uniform scatter with environmental context.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; raking macros of uniform scatter and edge/rivulet bias; façade context showing pollution sources/windward orientation.
- MSRT result (substrate): After a small reveal test patch, 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-01-02-atmospheric-corrosion-matte-sox-nox-acid-rain/>