

DSS-E.01.03 | Environmental Exposure / Weathering

Soot / Particulate Pollution Film

Environmental residue - carbonaceous/industrial particulates; grey-to-black dry film, fingerprint lifts, directional fall-out bias; typically SC-0, localized SC-1 where dust-laden wiping induced shallow micro-texture

Diagnosis summary

Soot / particulate pollution film is an appearance change on glass produced by airborne particulates (carbon soot, diesel exhaust, industrial dust, ash) that accumulate as a dry, grey-black veil. It often shows directional deposition based on airflow, edge build, and finger "lift" windows where casual contact removed soil. Classification is appearance-only per VIS (method-agnostic).

Field identification cues

- Surface-catch class (MSRT)
- Typically SC-0 (dry particulate on top).
- SC-1 may appear where abraded while dusty (dirty microfiber, paper towels) created very shallow micro-texture; SC-2 suggests misclassification-check for M.02 abrasion fields or Th.01 hot-particle if pits/nodules present.
- 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 small reveal test. Depth values are indicative-field measurement not required.
- CAT-1 (Benign / non-relief): Light soot veil; SC-0; mainly angle/raking visible; lifts completely on reveal patch. Indicative relief: 0-10 µm (optical film).
- CAT-2 (Light): Persistent dark veil with wipe windows; localized SC-1 from prior dusty wiping; limited standard-view impact. Indicative relief: ~10-40 µm.
- CAT-3 (Moderate): Wide-area darkening legible at standard distance (global contrast loss), with scattered SC-1; indicates long dwell/high deposition.
- Reclassify when: After true residue lift, modeled micro-texture or SC>0 persists → evaluate M.02 abrasion fields; if rust-toned dots/pits are evident, consider Th.01.02 grinder spark embed; if oily amber.

Distinguishing criteria

- vs. HVAC aerosol/oil film (R.04.03): HVAC films feel oily, show wetting anomalies; soot is dry, transfers to cloth, with less wetting contrast.
- vs. Kitchen grease (R.04.04): Grease has amber tone, tacky feel, spatter; soot is grey/black, uniform, dry.
- vs. Nicotine/tar (R.04.05): Nicotine shows amber/brown cast and odor; soot is neutral/dark grey to black, odorless/combustion-like.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; raking macros of particulate texture, wipe windows, deposition gradients; façade context showing traffic/stack sources.
- 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-01-03-soot-particulate-pollution-film/>