

DSS-R.04.03 | Residue / Film / Adhesion

HVAC Aerosol / Oil Film

Residue/film - airborne oils/plasticizers from HVAC/mechanical systems; uniform smeary veil, dust capture, grille-aligned gradients; typically SC-0, SC-1 where abrasion occurred

Diagnosis summary

HVAC aerosol / oil film is an appearance change on glass from airborne oils, plasticizers, and fine condensables emitted or entrained by HVAC systems, kitchens, shop floors, or mechanical rooms, depositing as a uniform, slightly tacky veil that captures dust. It often shows gradients aligned to supply/return paths or equipment proximity. Classification is appearance-only per VIS (method-agnostic).

Field identification cues

- Surface-catch class (MSRT)
- Typically SC-0 (thin oil film).
- SC-1 may appear where abrasive cloths or dust-laden wipers produced very shallow micro-texture during attempts to clean; SC-2 uncommon-recheck classification if observed.
- 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 controlled reveal test. Depth values are indicative-field measurement not required.
- CAT-1 (Benign / non-relief): Thin oil veil; SC-0; seen mainly at angle/raking; minor dust capture. Indicative relief: 0-10 µm (optical).
- CAT-2 (Light): Persistent film with dust embed and localized SC-1 from prior wiping; limited impact at standard view. Indicative relief: ~10-40 µm.
- CAT-3 (Moderate): Wide-area contamination legible at standard distance (global haze, patterning near grilles); scattered SC-1 in wipe attempts. Indicative relief: ~40-120 µm (film stack).
- Reclassify when: After true residue lift, any modeled micro-texture or SC>0 persists → evaluate under M.02 (abrasion fields); if soot/combustion dominates, consider E.01.03 Soot/particulate pollution film.

Distinguishing criteria

- vs.
- vs. Detergent/surfactant film (R.04.01): Detergent films show tool-path streaks and iridescence; HVAC films are uniform veils with dust embed and source-aligned gradient.
- vs. Fabric softener/additive film (R.04.02): Additive films show strong wetting contrast upon mist; HVAC films show less distinct wetting boundaries and more dust capture.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; raking macros of sheen/dust embed and wipe overlaps; context frames of HVAC grilles/returns showing alignment.
- 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-r-04-03-hvac-aerosol-oil-film/>