

DSS-R.06.02 | Residue / Film / Adhesion

Steel / Ferrous Rub / Black Smear

Residue/transfer - contact with carbon steel or ferrous hardware/tools; dark grey-to-black smear, may oxidize brown; typically SC-0, localized SC-1 where abraded

Diagnosis summary

Steel / ferrous rub / black smear is an appearance change on glass caused by mechanical contact with carbon steel or ferrous components (fasteners, brackets, trowels, knives, ladders, window bars, site hardware) leaving a dark grey/black transfer. May slowly oxidize to brown at the edges if moisture is present. Classification is appearance-only per VIS (method-agnostic).

Field identification cues

- Surface-catch class (MSRT)
- Typically SC-0 (transfer film on surface).
- SC-1 appears where dry abrasive wiping or grit under contact created very shallow micro-texture; SC-2 suggests misclassification-check for M.01 linear scoring or Th.01.02 hot-particle embed.
- 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 dark smear; SC-0; mainly angle/raking visible. Indicative relief: 0-10 µm (optical film).
- CAT-2 (Light): Persistent black smear with localized SC-1 from prior dry wiping/soil; limited standard-view impact. Indicative relief: ~10-40 µm.
- CAT-3 (Moderate): Broad/high-contrast smears legible at standard distance, with scattered SC-1 and possible brown oxidation; indicates extended dwell or repeated contact. Indicative relief: ~40-120 µm.
- Reclassify when: After true residue lift, any incised lines with chip-flank sparkle or SC-2 persist → evaluate under M.01 (linear scoring).

Distinguishing criteria

- vs. Aluminum rub (R.06.01): Aluminum is cool/light grey; ferrous rub is dark grey/black, can finger-stain, and may oxidize brown.
- vs. EPDM gasket rub (R.05.01): EPDM is black but follows gasket geometry; ferrous rub follows tool/hardware paths and may show oxidation halo.
- vs. Hot-particle embed (Th.01.02): Hot particle shows pit/nodule field, sometimes with rusting dots; ferrous rub is smear-film without pits.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; raking macros of drag, oxidation halo, edge feather; context frames showing steel tools/hardware proximity.
- MSRT result (substrate): After a small reveal 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-06-02-steel-ferrous-rub-black-smear/>