

DSS-Ch.05.01 | Chemical Attack / Etch / Reaction

Bleach / Peroxide Shadowing

Chemical - oxidizer exposure; optical tone shift $\pm$ very shallow micro-texture within spill/wipe footprints

Diagnosis summary

Bleach/peroxide shadowing is an appearance change caused by oxidizing agents (e.g., sodium hypochlorite bleach, hydrogen peroxide cleaners) contacting glass and drying/dwelling on the surface, sometimes in sunlight/heat. It presents as optical tone/contrast shift and, in stronger cases, very shallow, non-directional micro-texture within a spill/wipe footprint.

Field identification cues

- Surface-catch class (MSRT)
- Commonly SC-0 (optical only).
- SC-1 (slight) can occur after concentrated or heated oxidizer dwell; SC-2 is rare.
- Perform one light, non-marring pass on a representative interior area; polymer stylus if a coating is suspected. MSRT supports classification only.

Classification, severity and scope

- Assign CAT by appearance + MSRT + morphology (three-part cueing). Depth/relief values are indicative-field measurement not required.
- CAT-1 (Benign / non-relief): Optical tone/contrast shift only, SC-0; visible mainly at certain angles or in raking; minimal impact at standard view. Indicative relief: 0-10 μm (optical).
- CAT-2 (Light): Very shallow modeled micro-texture, SC-1, confined to spill/wipe footprint; limited impact at standard view. Indicative relief: ~10-40 μm .
- CAT-3 (Moderate): Broader matte/whitened footprint legible at standard distance; SC-1 to SC-2. Indicative relief: ~40-120 μm .
- CAT-4 (Severe): Uncommon for oxidizers alone; if pronounced matte fields or wide-area whitening are present, consider mixed chemistry (alkaline/oxidizer stack) and re-evaluate under applicable DSS.

Distinguishing criteria

- vs. Degreaser/alkaline burn (Ch.04.03): Alkaline burn shows grainier micro-texture with sheet/run geometries; oxidizer shadowing tends to be softer, optical with SC-0 to SC-1.
- vs. Adhesive remover staining (Ch.04.02): Adhesive remover exhibits wipe directionality + overlap lines centered on label sites; oxidizer footprints may be broader sprays or mop wipes.
- vs. Mineral staining/etch (Ch.03): Mineral conditions follow spray arcs/rings/runs and often yield ring halos; oxidizer shadowing lacks mineral ring morphology.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; include raking macros of footprint interior and edges; add context frames (cleaners, carts, work area).
- MSRT result: One light, non-marring pass on footprint interior; record SC-class (SC-0/SC-1/SC-2). Polymer stylus if coating is suspected.
- 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-ch-05-01-bleach-peroxide-shadowing/>