

DSS-E.03.01 | Environmental Exposure / Weathering

Algae / Biofouling Film

Biological residue - microbial/algal growth on moisture-retentive façades; green/brown film, strandy colonies at edges/sealants, wetting anomalies; typically SC-0, localized SC-1 where biofilm traps grit and induces shallow micro-texture

Diagnosis summary

Algae / biofouling film is an appearance change on glass resulting from microbial colonization (algae, cyanobacteria, biofilms) under persistent moisture and nutrient availability (organics, dust). It presents as green to brown films, strand/filament colonies at gasket/edge zones, and wetting anomalies where biofilm alters surface energy. Classification is appearance-only per VIS (method-agnostic).

Field identification cues

- Surface-catch class (MSRT)
- Typically SC-0 (soft biofilm).
- SC-1 localized where entrained grit or repeated wiping created very shallow micro-texture; SC-2 suggests misclassification-check M.02 abrasion fields or Ch.03.03 mineral etch if matte persists post-reveal.
- 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 patch. Depth values are indicative-field measurement not required.
- CAT-1 (Benign / non-relief): Thin chromatic biofilm; SC-0; angle/raking visible; lifts on reveal patch. Indicative relief: 0-10 µm (optical).
- CAT-2 (Light): Persistent film/colonies with localized SC-1 from grit entrapment or prior wiping; limited standard-view impact. Indicative relief: ~10-40 µm.
- CAT-3 (Moderate): Wide-area growth clearly legible at standard distance with edge blooms and recurring wetting anomalies; SC-1 scattered. Indicative relief: ~40-120 µm.
- Reclassify when: Post-reveal, if non-directional matte persists without biofilm → evaluate E.01.02 atmospheric matte; if white crystalline rims/etch dominate → Ch.03 mineral system; if linear abrasion.

Distinguishing criteria

- vs. Algae-like mineral staining (Ch.03.02): Mineral films are inorganic, whitish/grey, with crystalline rims; biofilm is chromatic (green/brown) and organic, often slimy when wet.
- vs. Kitchen/HVAC films (R.04.03/04): Those are oily/amber and track air/grease paths; biofilm tracks moisture dwell and nutrient load.
- vs. Mold on sealants (off-glass): Mold resides on sealant/frames; confirm on-glass presence before classification.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; raking macros of colonies/filaments, wetting anomalies, edge blooms; context of moisture sources/landscaping/weep details.
- 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-03-01-algae-biofouling-film/>