

DSS-Co.05.02 | Coating Anomalies

Pinholes / Voids (Ceramic Frit)

Ceramic frit anomaly - discrete clear points or micro-voids within the fired frit field; reads through glass from the viewing side; typically SC-0 at the viewing face. Confirm frit face, artwork intent, and location before attribution.

Diagnosis summary

Frit pinholes/voids are discrete, point-like clearings or ultra-thin spots occurring within a fired ceramic frit pattern (dots/lines/solid fields). From the viewing face they appear as tiny bright/clear points in transmission or sparkle points in reflection. The defect is planar within the frit layer (commonly on #2 or #4) and non-tactile at the viewing surface.

Field identification cues

- Surface-catch class (MSRT)
- At the viewing (glass) surface: SC-0 (defect is behind the viewing face in the frit layer).
- Do not MSRT the frit face in situ. MSRT supports classification only on the viewing face.
- Visual signature

Classification, severity and scope

- Assign CAT by visibility at acceptance geometry and count/density within critical sightlines. Depth values are apparent optical, not substrate relief.
- CAT-1 (Benign / non-relief): Few, very fine pinholes legible mainly at oblique/back-lit; SC-0 viewing face; cumulative affected area negligible.
- CAT-2 (Light): Scattered pinholes visible at standard distance in common lighting; SC-0; cumulative area $\leq 0.5\%$ of the frit field.
- CAT-3 (Moderate): Clusters/bands or repeatable rows visible at standard distance affecting perceived uniformity $>0.5\%$ area or along critical sightlines/margins; SC-0.
- Reclassify when:

Distinguishing criteria

- vs. Back-paint pinholes (Co.04.02): Both read as bright points, but system and location differ; confirm ceramic frit vs. organic back-paint and face.
- vs. Mineral peppering (Ch.03): Mineral systems show ring/run wetting geometry and may yield SC-1/2; Co.05.02 is ringless and SC-0 at the viewing face.
- vs. Surface abrasion pitting (M/Th): True surface pits exhibit SC-1/2 and micro-crater morphology at the viewing face; frit pinholes remain planar behind glass.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; back-lit frames to reveal points; macro/raking frames confirming smooth viewing surface.
- System ID. Confirm frit face, pattern spec, lot/date; obtain shop drawings/submittals if available.
- MSRT (viewing face). Record SC-0.

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-co-05-02-pinholes-voids-ceramic-frit/>