

DSS-M.04.03 | Mechanical Abrasion, Scoring, Impact & Cracking

Pellet / BB Impact Signature

Mechanical - high-velocity localized impact

Diagnosis summary

A pellet/BB impact is a high-velocity, localized strike that produces a central crater/divot and may initiate radial cracking or a bullseye/star pattern depending on glass type and energy. Classification here is appearance-only per VIS (method-agnostic).

Field identification cues

- Surface-catch class (MSRT)
- Shallow pellets may read SC-1 (slight); pronounced craters show SC-2 (clear) at the rim. Perform one light, non-marring pass only; polymer stylus preferred on suspected coated faces. MSRT supports classification, not acceptance.
- Visual signature
- Localized pit/crater with bright, rough flanks; if radial arms or a running crack are present, treat as integrity (see CAT mapping).

Classification, severity and scope

- Assign category by appearance + MSRT + morphology (three-part cueing under VIS). Depth figures are indicative to anchor the spectrum:
- CAT-2 (Light): Small crater with SC-1, clean rim, no chip flanks, no cracks; mainly a raking-only cue at close/standard view. Indicative depth: ~10-40 µm.
- CAT-3 (Moderate): Pronounced crater with SC-2 (clear); minor chip flanks and/or nearby modeled micro-texture; noticeable at standard view; no cracks. Indicative depth: ~40-120 µm.
- CAT-4 (Severe): Deep crater with rough, bright flanks, peppered satellites; clearly visible at standard & wide-field views; no cracks. Indicative depth: ~120-300 µm+.
- CAT-5 (by integrity/location): Any radial/star cracking, running edge crack, or moving pane → CAT-5 (non-repairable/out of in-place scope). Between-pane presentation by fixed parallax → CAT-5 by location.

Distinguishing criteria

- vs.
- vs. Star break/bullseye initiation (M.04.02): If star network is evident, classify under M.04.02 (default CAT-5 by integrity).
- vs. Internal cavity artifacts (A-family): Desiccant fines/moisture/haze present between panes and show fixed parallax; do not respond to reveal on #1/#4. Treat as CAT-5 by location.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique, include raking macros of the crater rim (and any satellites) and at least one context frame showing proximity to.
- MSRT result: Record SC-class (SC-0/1/2) with one light, non-marring pass at the rim (not across any cracks). Prefer polymer stylus on suspected coated faces.
- Forms: Pane ID; product family & surface numbering (#1-#4; laminate-internal); worked surface Y/N; functional coating 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-m-04-03-pellet-bb-impact-signature/>