

DSS-M.03.04 | Mechanical Abrasion, Scoring, Impact & Cracking

Edge “Shelling” at Hardware Holes/Slots

Mechanical - edge & corner damage at penetrations

Diagnosis summary

Edge “shelling” at hardware holes/slots is a localized shell-type loss that originates at the perimeter of a drilled hole or machined notch and intrudes onto the exposed face. It is distinct from a factory exit-lip (a uniform burr confined to the hole/slot perimeter that reads SC-0 on the face and is not damage). Classification here is appearance-only per VIS; restoration methodology is out of scope.

Field identification cues

- Surface-catch class (MSRT)
- Expect SC-2 (clear) where shelling intrudes onto the face.
- Visual signature
- Bright, rough chip flanks at the penetration edge with discrete shell geometry; distinguish from a uniform exit-lip that is edge-confined and SC-0 on the face.

Classification, severity and scope

- Assign CAT by appearance + MSRT + morphology (three-part cueing under VIS). Depths below are indicative to anchor the spectrum:
- CAT-2 → low CAT-3 (lower bound): Small, shallow shells just breaking onto the face; SC-1-SC-2; primarily a raking-light cue at close/standard view. Indicative depth: ~10-40 µm.
- CAT-3 (typical): Pronounced shelling with clear catch and bright, rough chip flanks; noticeable at standard view. Indicative depth: ~40-120 µm.
- CAT-4 (upper bound): Deep/extended shelling with secondary pits/craters and/or short cracks propagating from the penetration; strong catch; clearly visible at standard & wide-field views.
- CAT-5 (by location/condition): Between-pane/inaccessible or integrity indicators (active cracks, moving pane) → out of in-place scope; document and refer per project protocol.

Distinguishing criteria

- vs. Factory drill/slot exit-lip (P.03.04): Exit-lip is a uniform burr confined to the hole/slot, reads SC-0 on the face, and shows no chip-flank morphology. Do not classify as damage.
- vs. Linear scoring (M.01): Scoring forms extended lines across the face; an exit-lip/shelling is peripheral to a hole/slot. If scoring is present, classify under M.01 in addition.
- vs. Coating anomalies (Co.01/Co.03): Worked-face coating rub/patchiness is disallowed at acceptance on coated faces (VIS §6.2.e); shelling shows fracture morphology at a penetration.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique, with raking macros of the penetration edge showing chip flanks and at least one context frame proving the condition.
- MSRT result: Record SC class (SC-0/1/2 as observed). One pass, non-marring; prefer polymer stylus on suspected coated faces.
- Forms: Pane ID; product family & surface numbering; 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-03-04-edge-shelling-at-hardware-holes-slots/>