

DSS-M.03.02 | Mechanical Abrasion, Scoring, Impact & Cracking

Edge Gross Chipping / “Clamshell”

Mechanical - edge & corner damage

Diagnosis summary

Gross edge chipping (“clamshells”) are discrete, larger shell-type fractures at or near the perimeter, typically from impact, improper handling, or stress at drilled/notched features. Classification is appearance-only per VIS; restoration methodology is out of scope. Inspect under VIS lighting/geometry and record surface numbering and worked-surface status on Forms:

Field identification cues

- Surface-catch class (MSRT)
- Clear detect at chip perimeter; perform one light, non-marring pass only to sense relief (SC-2). On coated faces, prefer polymer stylus or rely on visual/location cues per VIS §5.5.
- Visual signature
- Rough chip flanks with bright, irregular fracture edges; may include pits/craters adjacent to the edge land or hole perimeter. (Chip-flank/rough-edge morphology is determinative for escalation from minor edge nicks.)

Classification, severity and scope

- Assign category by appearance cues + MSRT (not by intent to repair):
- CAT-2 → CAT-3 (lower bound): Larger, shallow shell with slight-clear catch and relatively clean flanks; visible primarily in raking light at close/standard view. Indicative depth: ~10-40 µm.
- CAT-3 (typical): Pronounced clamshell(s) with clear catch; rough, bright chip flanks; noticeable at standard view. Indicative depth: ~40-100 µm.
- CAT-4 (upper bound): Deep/extended shelling, multiple chips with secondary pits/craters or short cracks; strong catch; clearly visible at standard & wide-field views. Indicative depth: ~100-250 µm+.
- CAT-5 (by location/condition): Any case with through-thickness cracking, moving pane in frame, or between-pane/inaccessible location → out of in-place scope; document and refer.

Distinguishing criteria

- vs.
- vs. Drill/slot exit lip (P.03.04): A continuous exit-side burr/lip is a manufacturing artifact at hole/slot perimeter; escalate only if discrete face-side chips propagate from the exit.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique; include raking macros of chip flanks and at least one context frame showing the edge location (or hole/slot) and.
- MSRT result: Record SC class (typically SC-2 “clear”); one pass only; non-marring; polymer stylus preferred on suspected coated faces.
- Forms: Pane ID; product family + surface numbering; worked surface Y/N; functional coating present on worked surface (Y/N/Unknown); reveal status; lighting/time; geometry.

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-03-02-edge-gross-chipping-clamshell/>