

DSS-Th.03.03 | Thermal / Hot Particle / Fusion & Thermal Stress

Local Heat Source Imprint (heaters / IR)

Thermal stress / localized radiant loading - appearance change ± integrity risk

Diagnosis summary

A local heat source imprint is a localized appearance change or crack initiation caused by near-field radiant or convective heating focused on the glass (e.g., space heaters, heat lamps, IR emitters, sun-facing radiant panels). It may present as a tonal/shine shift band or patch, a hot-spot nucleus, or-at higher severities-thermal stress cracking emanating from the heated locus.

Field identification cues

- Surface-catch class (MSRT)
- SC-0 for optical-only tonal/shine shifts with no relief.
- SC-1 for very shallow modeled micro-texture within the hot footprint; SC-2 is uncommon but possible with pronounced softening.
- Perform one light, non-marring pass; do not stylus across a suspected crack. Prefer polymer stylus on suspected coated faces. MSRT supports classification, not acceptance.

Classification, severity and scope

- Assign CAT by appearance + MSRT + morphology (three-part cueing). Depth/relief ranges are indicative-measurement is not required.
- CAT-1 (Benign / non-relief): Sheen/tonal shift only; SC-0; visible mainly in raking at close/standard view. Indicative relief: ~0-10 µm (optical).
- CAT-2 (Light): Subtle modeled micro-texture within the footprint; SC-1; limited impact at standard view; no chip flanks. Indicative relief: ~10-40 µm.
- CAT-3 (Moderate): Clear detect (SC-2) with visible modeled micro-texture at standard view; boundaries remain soft; no discrete pits. Indicative relief: ~40-120 µm.
- CAT-4 (Severe): Pronounced matte/frosted hot-spot or band due to softening/devitrification; distinct at standard & wide-field views; still no peppering. Indicative relief: ~120-300 µm+.

Distinguishing criteria

- vs. Torch proximity streak (Th.02.01): Torch streaks are elongated along a tool path; heater imprints are localized to a fixture footprint or radiant pattern.
- vs. Overheated grinder/belt burn (Th.02.02): Burn lines follow tool travel and may show rubber/compound smear; heater imprints align with stationary radiant geometry.
- vs. Hot-particle damage (Th.01.xx): Slag/sparks present discrete nodules/pits with bright rims; heater imprints are continuous patches/bands without discrete pepper.

Documentation and inspection

- Photo set (VIS): 12 / 36 / 72 in, normal + oblique, include raking macros of the footprint; add context frames showing the heater/IR source, mounting position, and.
- MSRT result: Record SC class (SC-0/1/2) with one light, non-marring pass (polymer stylus on suspected coated faces). Do not pass across any crack.
- 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-th-03-03-local-heat-source-imprint-heaters-ir/>