

Surface Refinement

ICEM Surf Safety Analysis

Sharp Corner Detection

An add-on module to ICEM Surf Professional, ICEM Surf Safety Analysis has been developed for analysis of potential head impact zones in the cabin and exterior of a car, to protect passengers and pedestrians from injuries caused by sharp edges of car components.

KEY CAPABILITIES

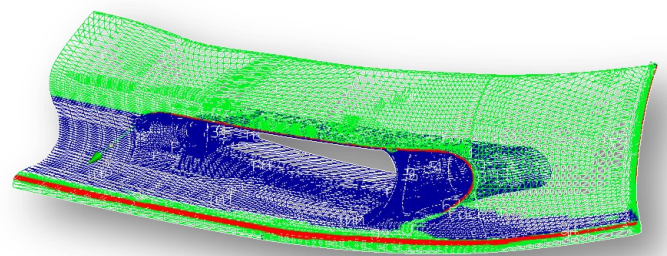
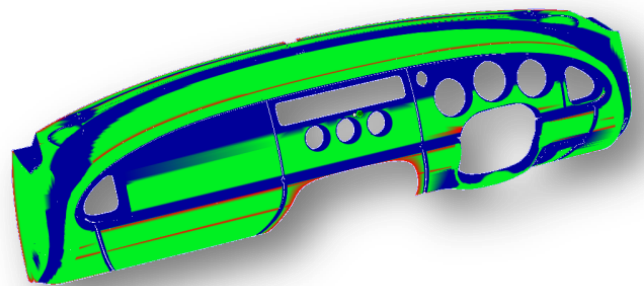
Global Modelling

The ever increasing legislation surrounding the passive safety of automobiles continues to influence the design and protective properties in potential regions of head impact on the exterior and interior components of a vehicle design.

The ICEM Surf Safety Analysis module has been developed especially for the requirements of the automobile industry. Used as a design aid during the component design, non-compliant areas can be quickly identified, thus minimizing the need for later geometry modifications and component redesigns requested as the result of a full vehicle safety analysis commonly performed by external software analysis applications.

Used to detect sharp edges and corners on a 3D model that may cause injuries, a sphere simulating a human head is rolled along the selected geometry to detect for curvature radii below a minimum value.

The results are presented graphically on the model by color shaded triangles. Green surface indicates acceptable radii, with blue representing surfaces where the test-sphere cannot touch. The critical zones not meeting the required vehicle safety legislation parameters are marked in red. Afterwards, these detected areas should be remodeled until they meet the required safety standards.



Customer benefits

- Instant feedback for early detection and removal of potential homologation safety issues.
- No need to wait for expensive physical prototypes before testing can start.
- No time-consuming re-testing and modification loops.
- Fully integrated within ICEM Surf, no need for third-party software, avoiding extra training, and unpredictable data translation issues.
- Quick and easy to use, little extra training required.
- Dynamic clipping planes can be utilized to localized analyses.



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