



SDC Verifier for Bulk Handling Grabs

Structural verification software for bulk handling grabs, grab buckets, and clamshell grabs — using your existing FEA results or models built in SDC Verifier.

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Where it helps in grab verification

Verify structural capacity across different payloads, material densities, fill levels, and asymmetric loading cases.



Welded details & bolted joints

Weld strength, fatigue-sensitive details, and bolt group checks where applicable.



Arms, links & closing mechanism

Strength, load paths, stability, and governing load cases.



Bucket shells / jaws

Local strength, stress concentrations, stiffeners, and reinforced wear areas.



Head block, lugs & hinge zones

Lifting load transfer, local stress around pins, surrounding plates, and welds.



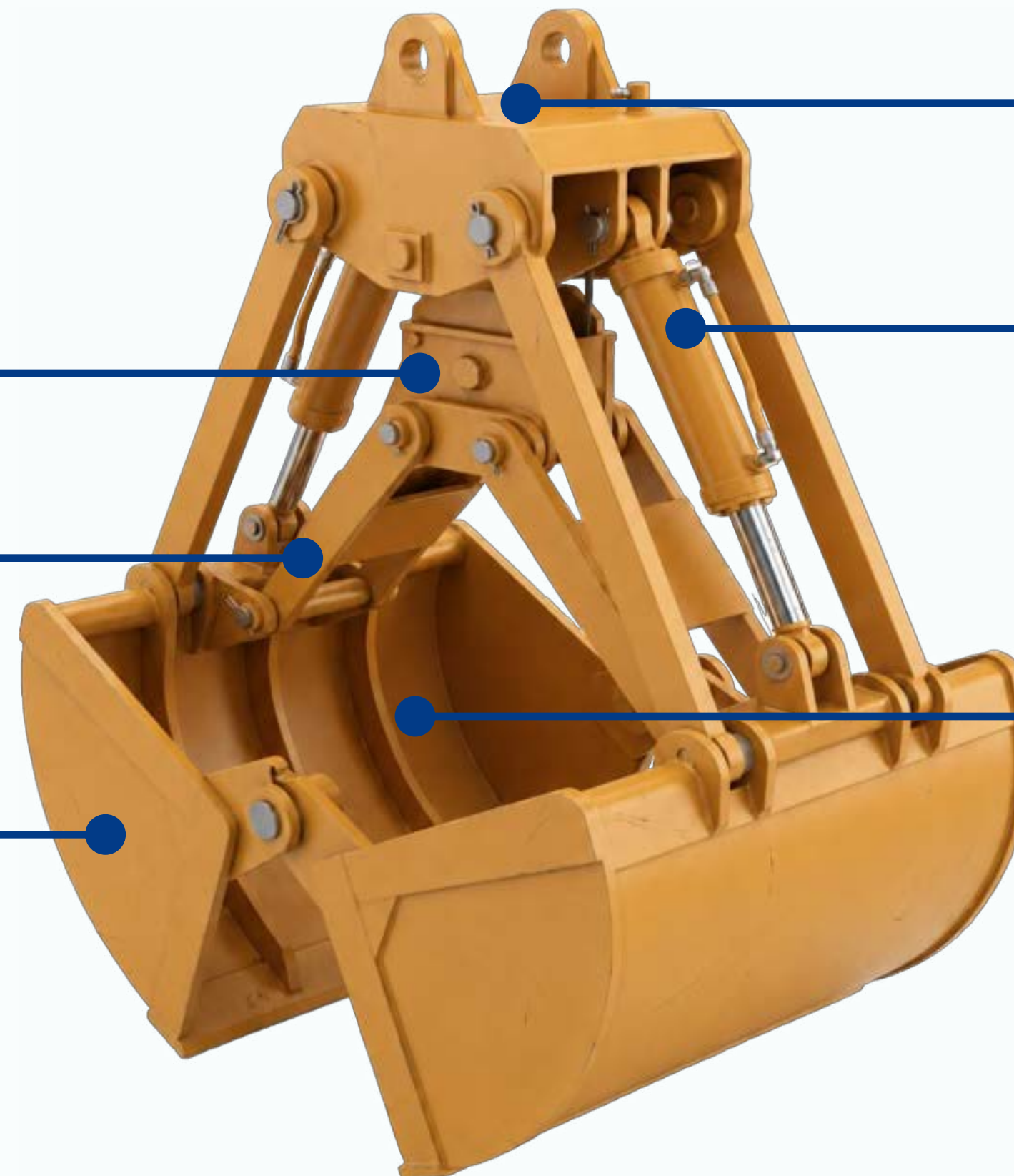
Cylinder / rope attachment brackets

High-force brackets, welded details, and local reinforcement checks.



Side plates, ribs & stiffeners

Local strength, reinforced regions, and buckling checks where relevant.



What you can verify

✓ Strength analysis

Overall strength and utilization under operating, lifting, and asymmetric load cases.

✓ Weld checks

Weld strength, throat size, utilization, and fatigue-sensitive welded details.

✓ Fatigue life

Fatigue assessment based on defined stress ranges, load cycles, and detail categories.

✓ Serviceability / deformation

Deflection limits, local deformation, and project-specific acceptance criteria.

✓ Bolted joints

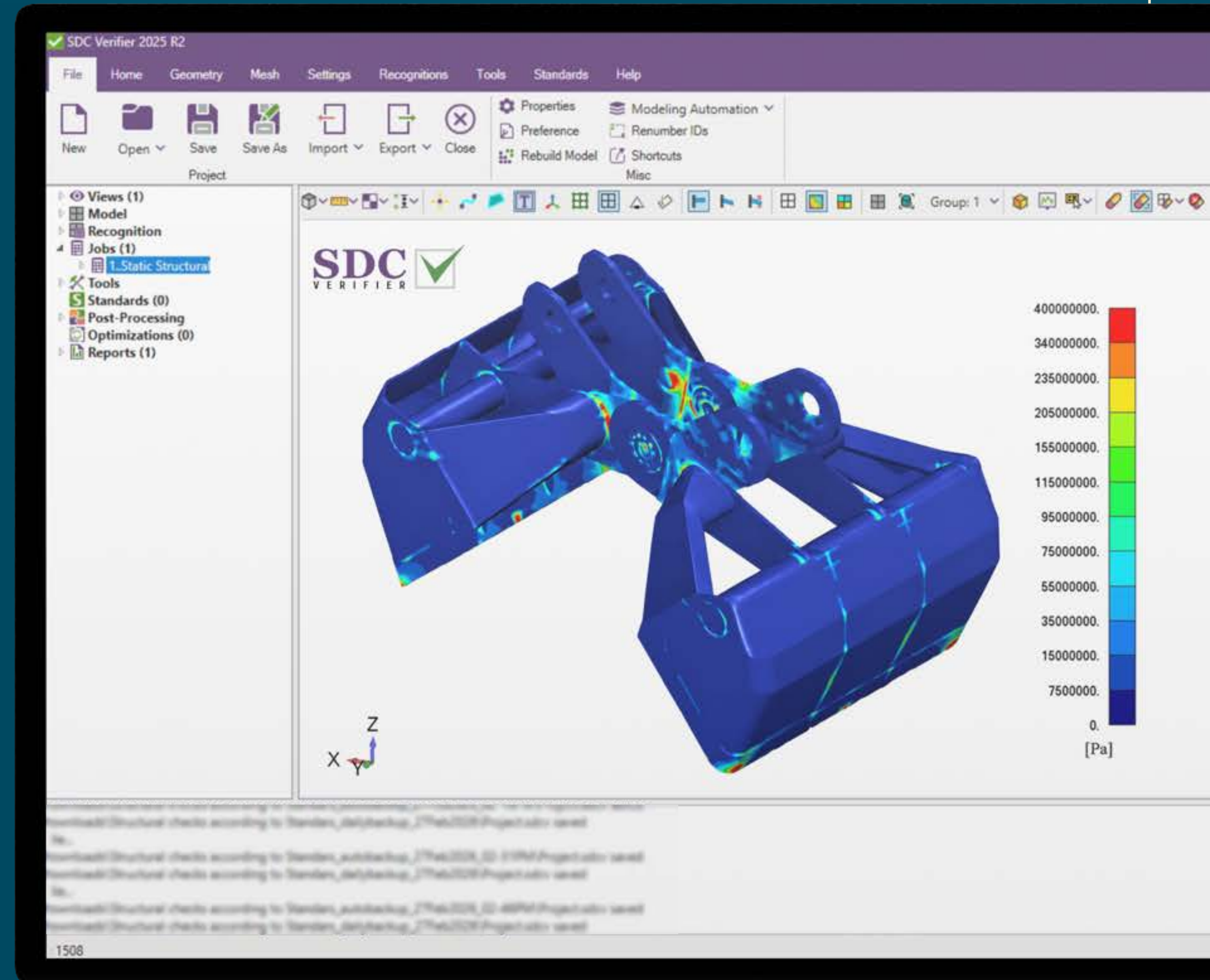
Bolt group verification, including preloaded joints where used.

✓ Plate & stiffener checks

Local strength checks for shells, side plates, ribs, and reinforced regions.

✓ Deliverable

Governing load cases, strength and fatigue results, utilization plots, and a PDF report for engineering review.



How it works — 5 steps

1



Import or build the model

Use existing FEA results from Ansys Mechanical, Simcenter 3D, or Femap, or build and prepare the model in SDC Verifier.

2



Define loads and constraints

Set operating loads, lifting cases, closing forces, material loads, boundary conditions, and project assumptions.

3



Recognize and organize details

Group welds, stiffeners, members, bolts, plates and connection areas into verification sets.

4



Combine

Create load combinations, factors, and envelopes to identify governing operating, lifting, serviceability, and fatigue cases.

5



Verify & Report

Perform structural verification, identify governing cases, and export a PDF report with results, plots, tables, and references.

FEA Integrations



Ansys Mechanical



Simcenter 3D



Femap (NX Nastran)



STEP



IGES



Parasolid
(.x_t / .x_b)

LS-DYNA result reading in Ansys supported

Supported Standards

Structural strength

- ✓ Eurocode 3 EN 1993-1-1
- ✓ AISC 360 Members
- ✓ AS 4100 (project-dependent)

Weld strength & fatigue

- ✓ Eurocode 3 EN 1993-1-8
- ✓ Eurocode 3 EN 1993-1-9
- ✓ BS 7608 Fatigue
- ✓ DNV RP-C203 (where applicable)

Bolted joints

- ✓ Eurocode 3 EN 1993-1-8
- ✓ AISC 360-10 Bolts (where applicable)
- ✓ VDI 2230 (where applicable)

Plate & stiffener checks

- ✓ Eurocode 3 EN 1993-1-5

Other supported plate rules
where applicable

Lifting-equipment standards

- ✓ EN 13001 (where applicable to project scope)
- ✓ FEM 1.001 (where applicable to project scope)

Standards & Project Criteria

- Deflection limits
- Utilization limits
- Load factors & combinations
- Required fatigue life

Structural verification is based on the selected standards, project load cases,
and acceptance criteria defined for the project.

Why engineering teams use SDC Verifier



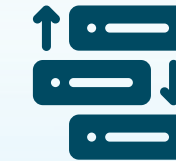
Find governing cases faster

Identify governing strength, weld, fatigue, and load-case results.



Reduce manual verification work

Reduce spreadsheet work and repeated verification after design changes.



Reduce design iterations

Identify critical details earlier and compare design revisions faster.



Simplify design review

Pass/fail results, plots, tables, and standard references in one report.

**SDC Verifier
saved up to**

80%

**of the time for modeling,
analysis and creating report.**

Verify your grab model in SDC Verifier

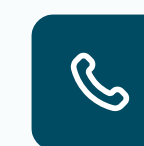
Use your existing model or FEA results to evaluate structural strength, welded details, fatigue, and governing load cases, and generate a clear verification report.

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