



REDUCING TRUCK LOAD BODY COSTS

VR STEEL REDUCED MASS, MAINTAINED INTEGRITY, AND INCREASED PERFORMANCE

About the Customer

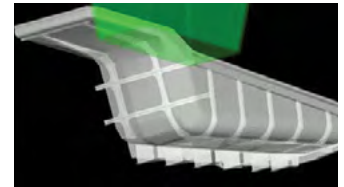
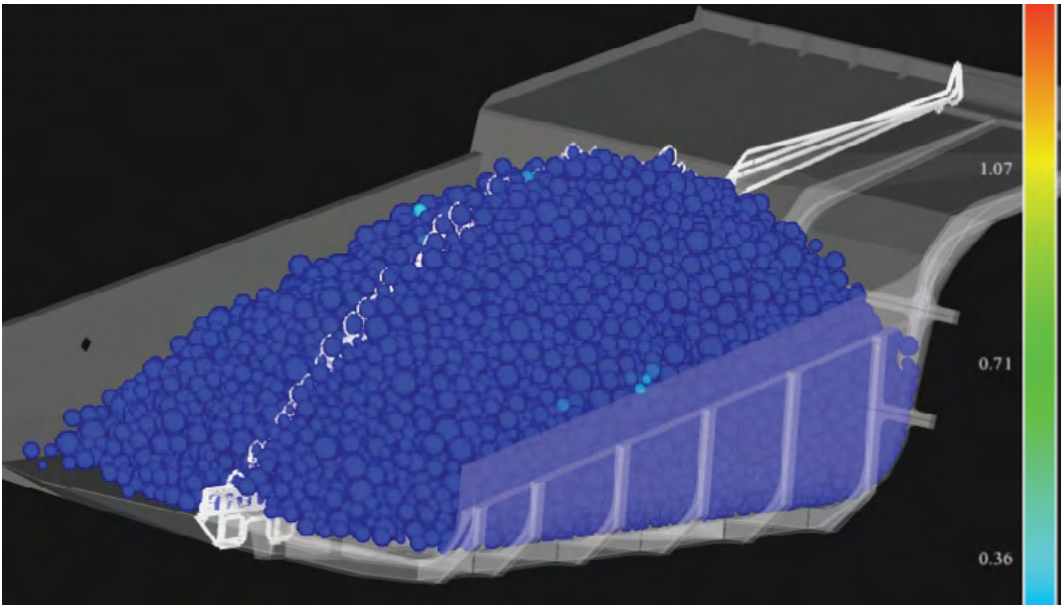
VR Steel (Pty) Ltd designs, builds, and repairs fabricated mining equipment attachments, including truck load bodies.

With Altair EDEM™ virtual prototypes VR Steel can test new design options and custom designs for specific uses, build fewer physical prototypes, shorten the design cycle, and increase customers' productivity.



EDEM made it possible to evaluate and prove our product's loading and unloading patterns and establish the impact it would have on operation efficiency.

Bertus Haasbroek, Chief Design Engineer, VR Steel



Their Challenge

Reduce the mass of a truck load body — while maintaining structural integrity and increasing performance. VR Steel wanted a simulation tool to help **streamline the design process and reduce prototyping costs**. Their customers wanted proof that the new design would:

- Unload more quickly
- Lower operating costs
- Hold up under heavy use

Our Solution

With standard EDEM tools, VR Steel engineers imported 3D CAD models of the new load body design and generated EDEM material models of various media to use in testing.

Using EDEM simulations as virtual prototypes, VR Steel was able to simulate the loading and unloading patterns of both the conventional load body and their new, lighter design.

EDEM provided a virtual environment for conducting **100% repeatable tests** with a variety of materials — at a **fraction of traditional physical prototyping and testing costs**.

Results

EDEM helped VR Steel demonstrate that their new load body design:

- Reduced unloading time
- Reduced body mass 20%
- Reduced fuel consumption 11%
- Fuel savings: ~70,000 L/yr per truck (~\$55K)

EDEM gave VR Steel the ability to perform virtual repetitive testing — under the same conditions every time. Evaluation of design options in a virtual environment reduced the need for physical prototypes.

Using EDEM also gave VR Steel a **distinct market advantage**: the ability to quickly design and test a new load body that outperforms competitor designs.

VR Steel used EDEM simulations as virtual prototypes for new, lighter truck load body designs.