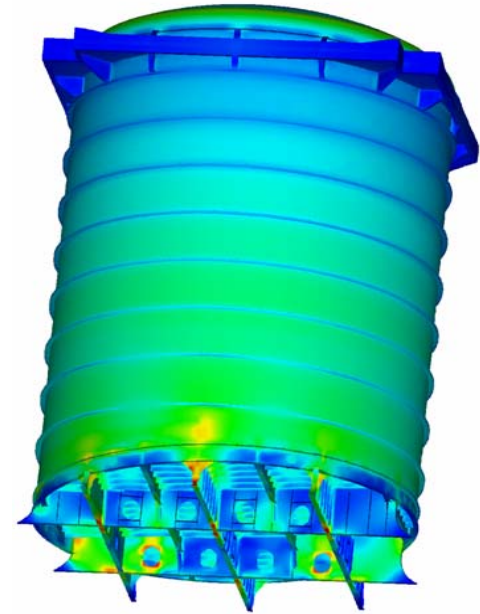


## Industrial Case Study (Holvrieka Nirotta B.V. – Ship Borne Juice Tank)



Holvrieka Nirotta B.V. ([www.holvrieka.net](http://www.holvrieka.net)) in the Netherlands used NEi Nastran to analyze the design of a new cargo tank (left). The tank is part of a design to convert a 25,000 – ton cargo ship into a dedicated orange juice carrier. In order to prevent interaction between the ship's hull and the tank, the tank is designed to be free standing in the hold (not welded down). Hard wood is used as an interface between the tank foundation and the hold floor. Through the use of gap elements, NEi Nastran was used to simulate the hard wood interface between the tank and the hold's floor. The finite element model of the tank (right) contained approximately 59,000 nodes, 355,000 degrees of freedom and 61,000 elements. The nonlinear analysis took less than one hour to solve on a Pentium III 500 MHz PC. The contour plot shows the typical stress due to the various loads, which are present in the tanks during every day use.



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