

TANKS

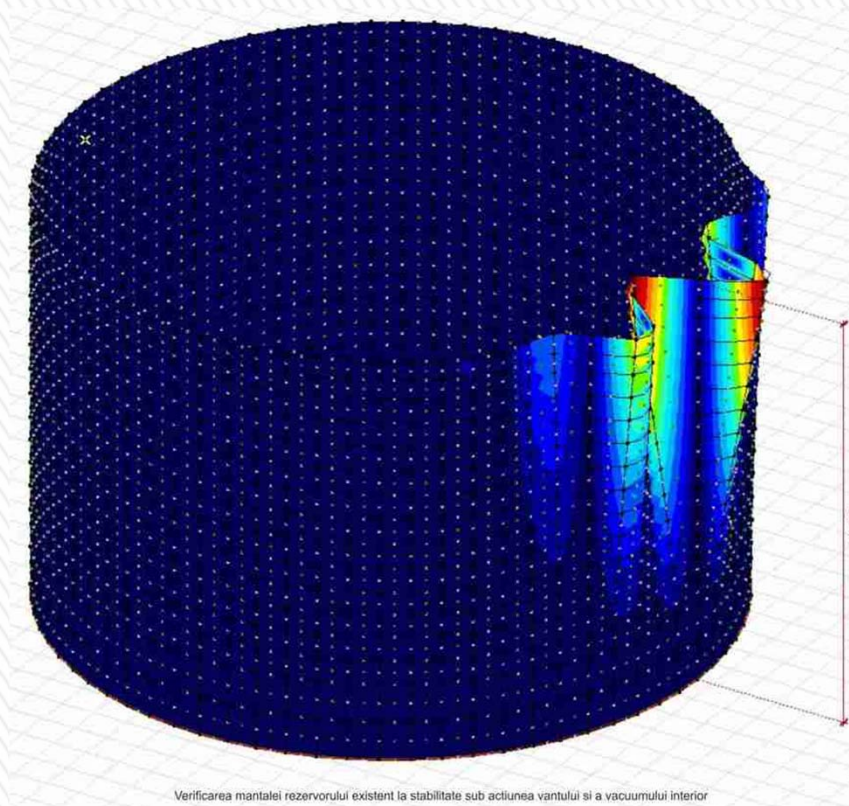
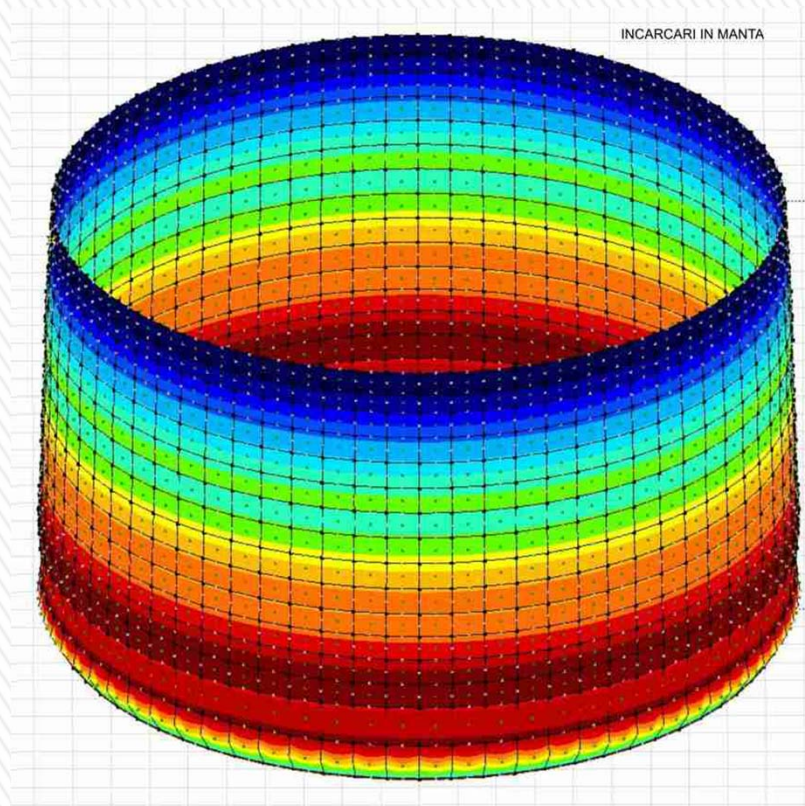
Starting with 2005, Confind developed a sector for the design, manufacture and installation of tanks with vertical axis.

Tanks are manufactured in accordance with EN 14015 and API 650, in any of the configurations specified in these standards.

So far there have been performed single or double walled tanks with or without floating roof, floating membrane for salt water, gasoline, diesel, bitumen, kerosene with capacities ranging between 200m³ and 30000m³.



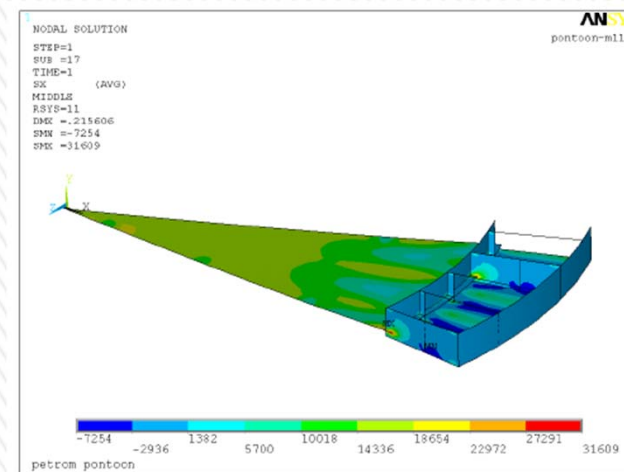
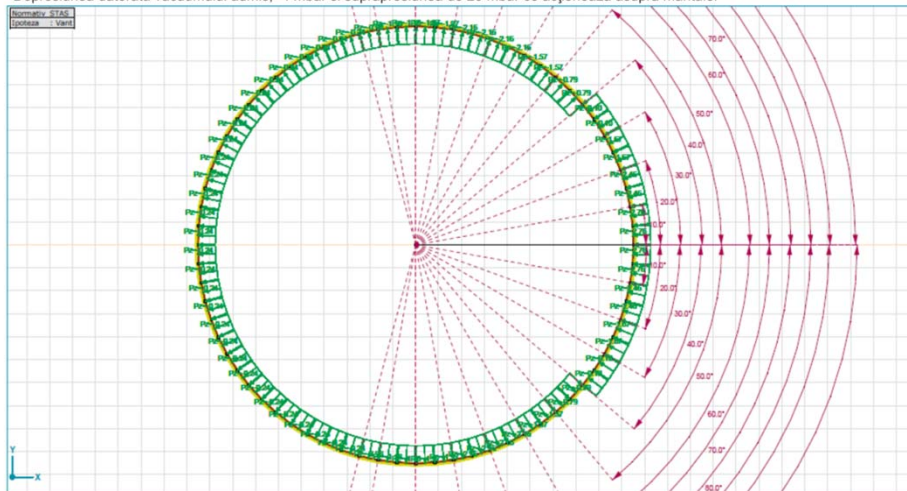
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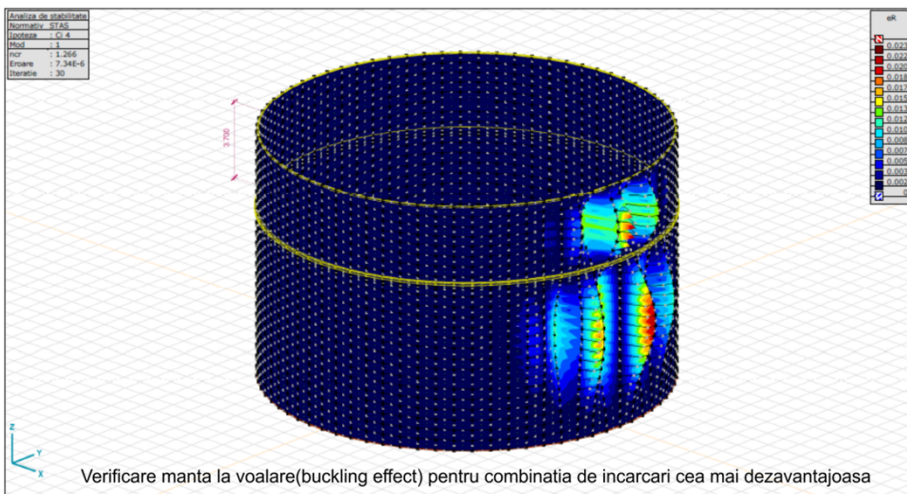
Examples of stress and strain from finite element analysis

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Depresiunea datorată vacuumului admis, -4 mbar și suprapresiunea de 20 mbar ce acționează asupra mantalei



radial membrane stress 32 N/mm²



circumferential membrane stress -57 N/mm² / 20 N/mm²

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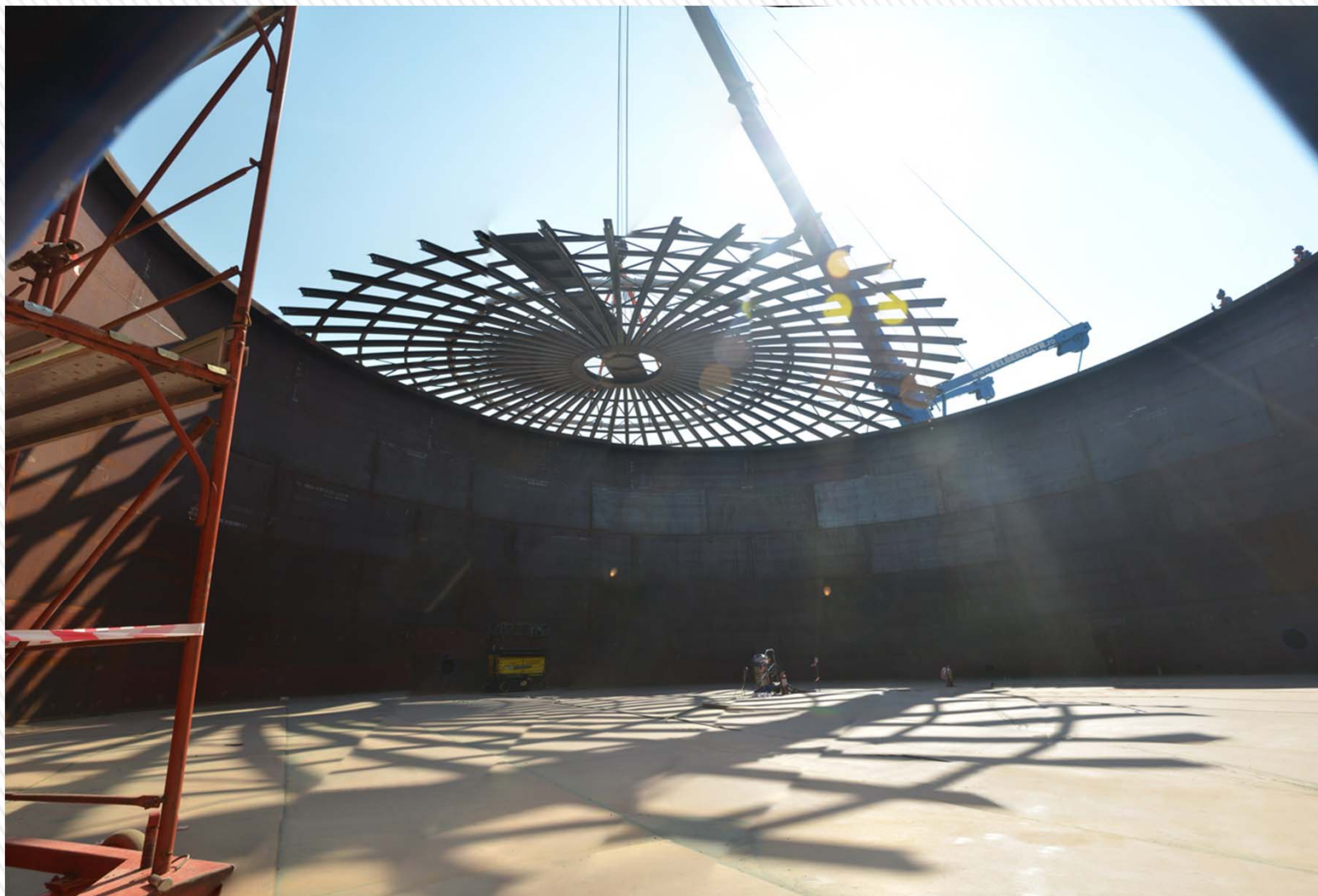


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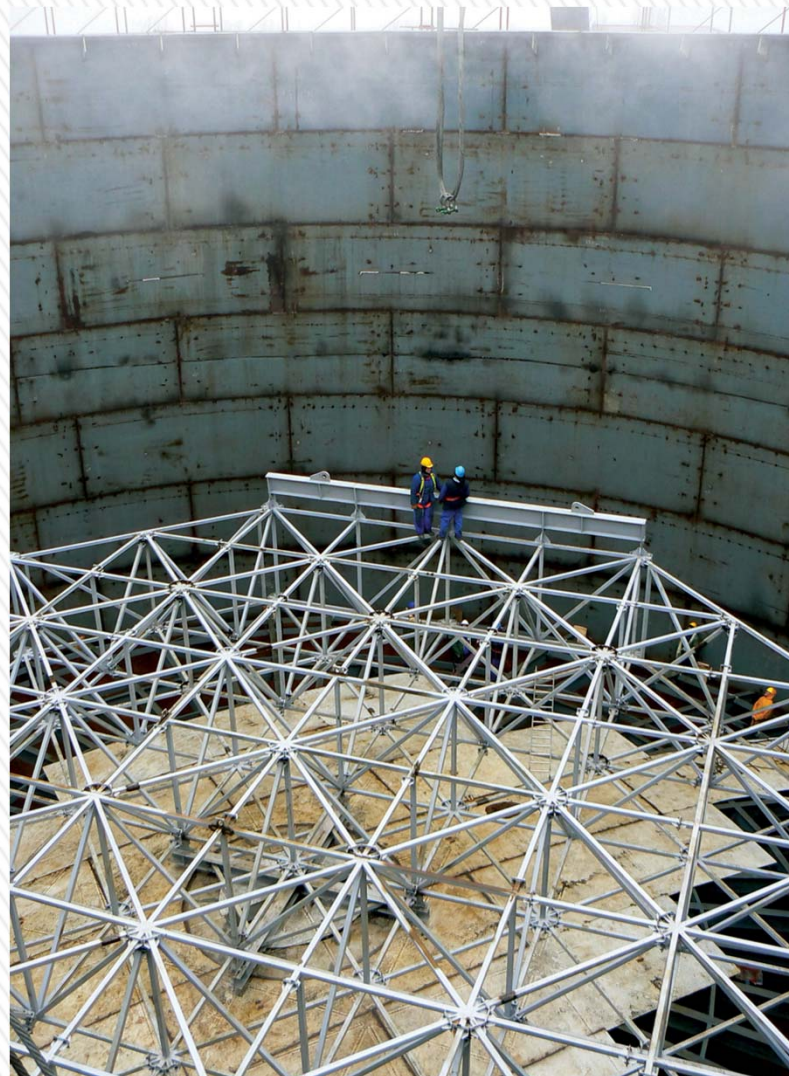
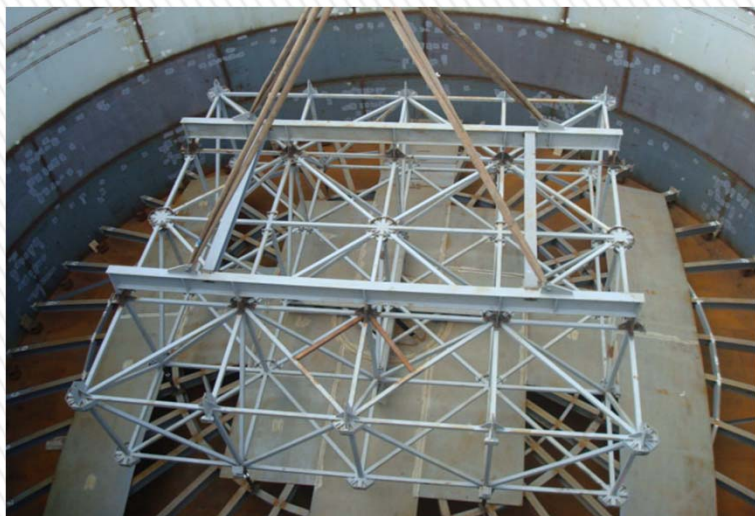
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TANK REPAIRS

Starting with 2011, Confind developed tank sector by adding the following activities technical assessment of existing tanks, repairing design, fabrication of parts, site repairing.

Tanks are generally repaired according to EN 14015, in any of the configurations presented by the standard.

Until now Confind executed repairs for single wall tanks, with/without floating roof, with/without floating membrane for crude oil, salt water, gasoline, diesel, bitumen, kerosene with capacities 2000cm - 20000cm.

TANK REPAIRS

By means of the technical assessment, the Client is provided with the following information:

- bottom thickness by means of ultrasonic scanning
- shell thickness by means of ultrasonic scanning
- shell displacement by means of laser scanning
- roof thickness by means of ultrasonic scanning
- as built drawings for roof structure
- NDT of welding seams
- chemical composition of structural elements, including carbon content

TANK REPAIRS

- preliminary static calculation based on the above information
- preliminary repairing proposal based on the static calculation results

Upon request it is possible to provide a technical assessment for the tank foundation.

Based on the above results the Client makes his decision regarding the future course of actions.

TANK REPAIRS

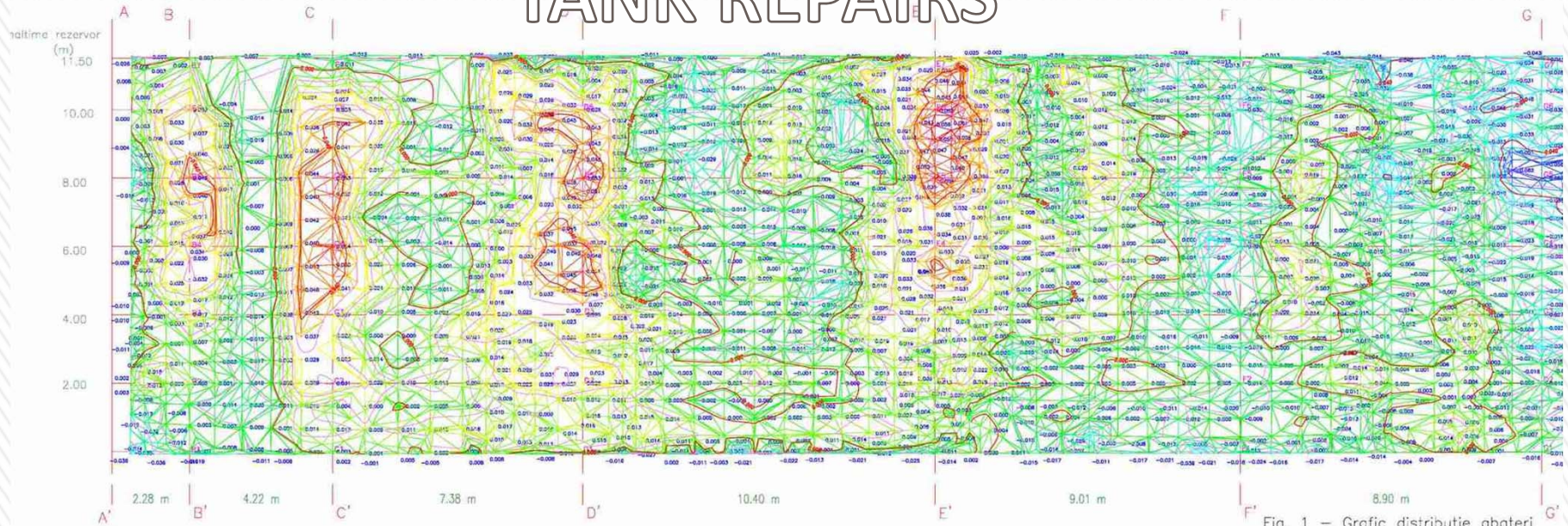
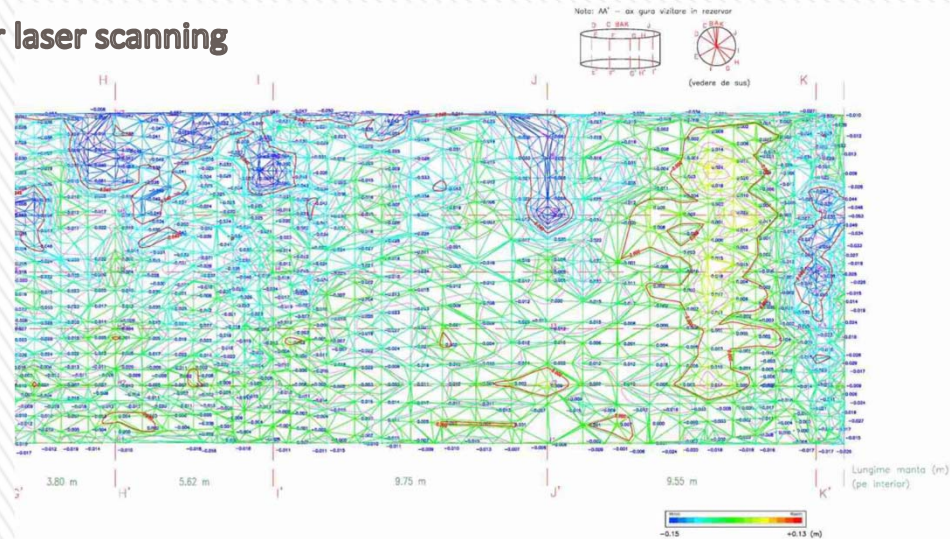


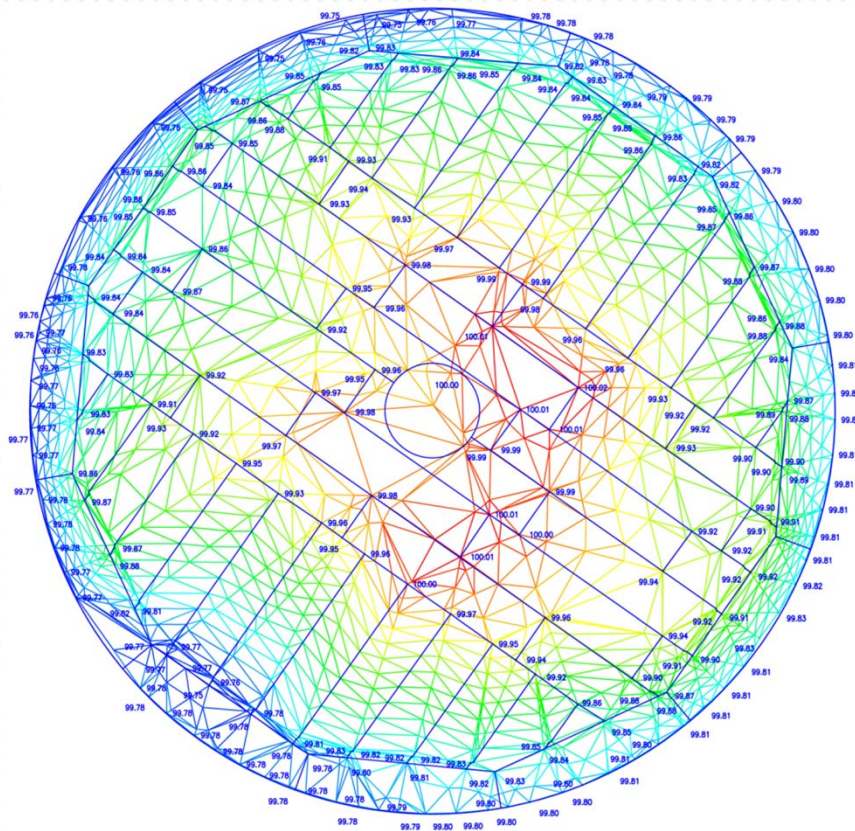
Fig. 1 – Grafic distributie abateri

Shell displacement map after laser scanning

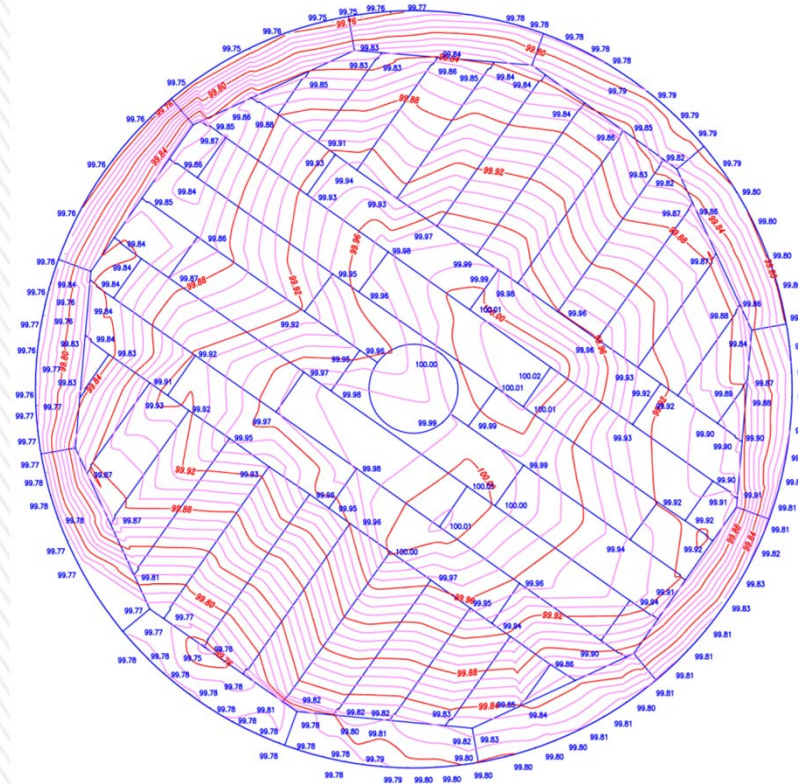


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TANK REPAIRS



Model 3D



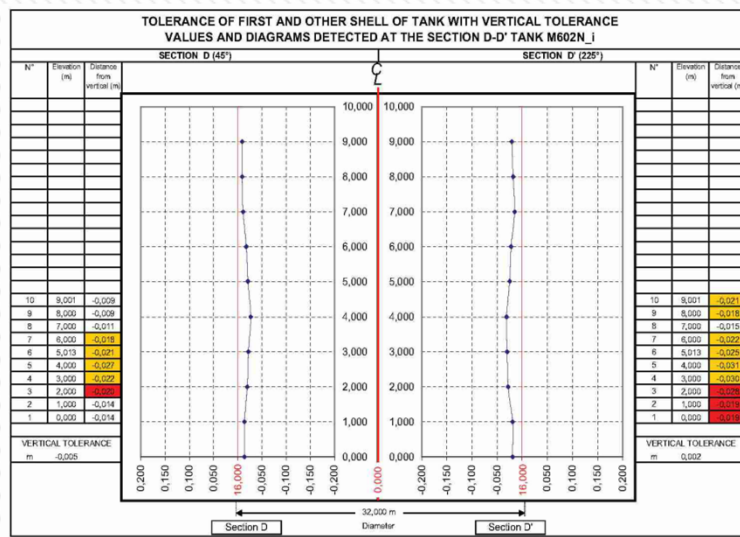
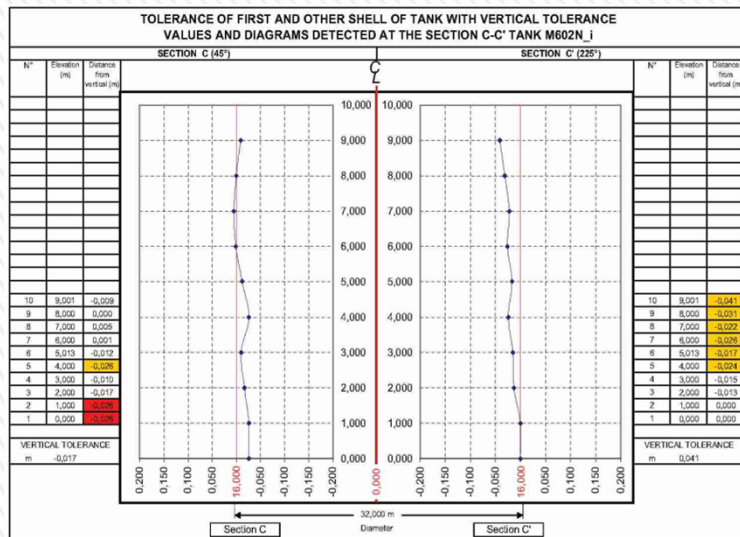
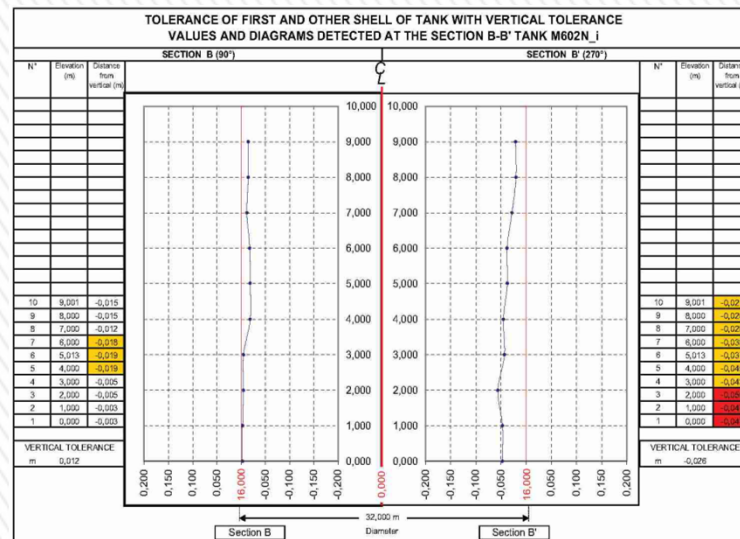
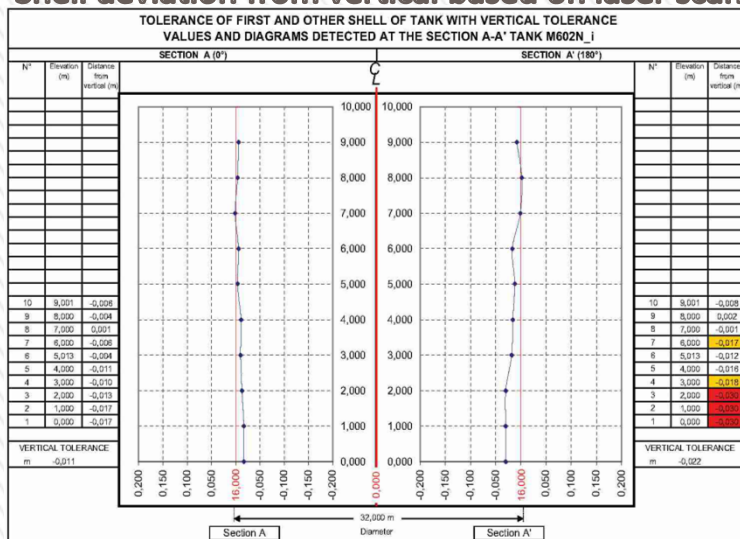
Curbe de nivel
(echidanta 1cm)

Bottom displacement map after laser scanning

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Shell deviation from vertical based on laser scanning



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TANK REPAIRS

Repairing activities include specific elements, but also common elements when compared with the activity of building new tanks:

Specific elements:

- tank support in order to repair/replace bottom, shell portions
- tank lifting in order to replace an entire shell course
- concrete injection under bottom
- internal coating in order to improve mechanical and corrosion resistance
- shell preparation in order to accommodate roof sealing
- sealing replacement

Common elements:

- automatic welding of circular seams
- automatic welding of vertical seams

TANK REPAIRS

- minimum scaffolding
- vacuum box check of bottom and roof welding seams
- use of calibration rings in order to achieve specified tolerance
- use of welding hanging decks



Tank supported on the floating deck



Vacuum check of welds

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