

GOB EYE Tugboat Design FEA Analysis

C: Gobeye a 45

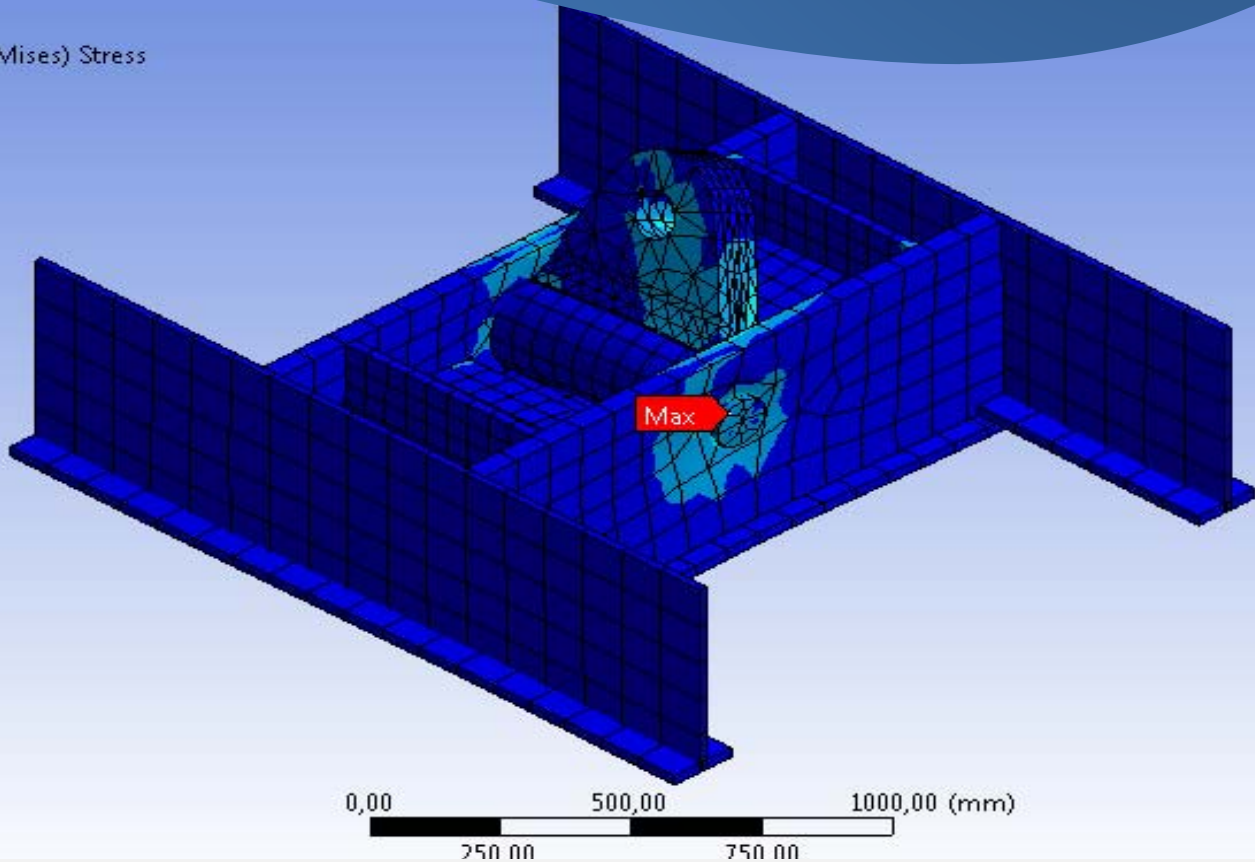
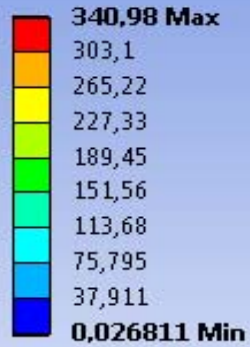
Equivalent Stress

Type: Equivalent (von-Mises) Stress

Unit: MPa

Time: 1

18/01/2012 11:52



Characteristics

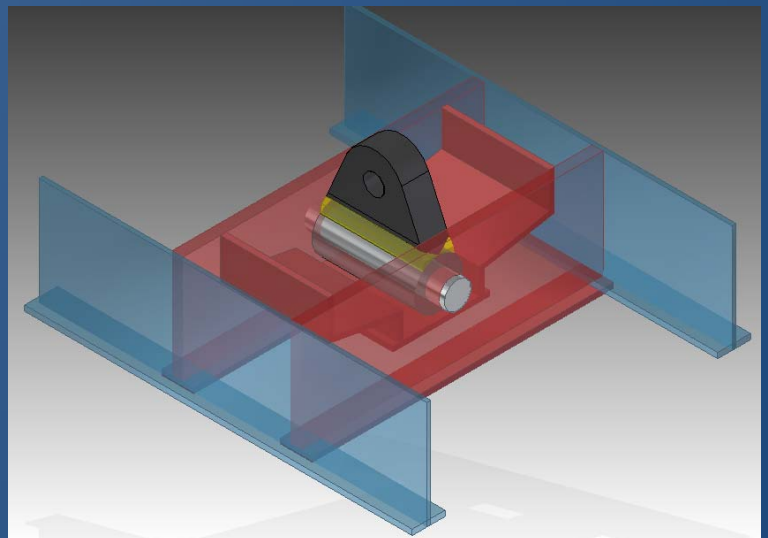
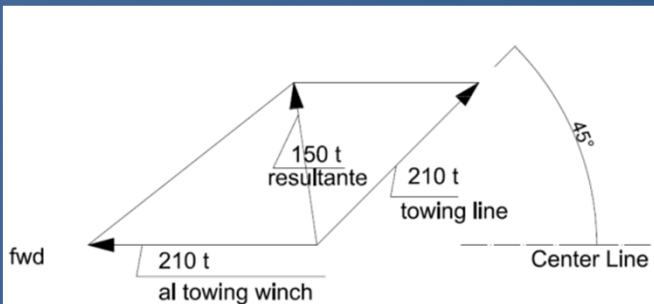
Design Load on Gob eye	150	Ton
Max Load Condition Angle	45	Degrees
Bulkhead Resultant Stress	115	KN/m ²

GOB EYE Finite Element Analysis to check the correct material and structures thickness selected before construction.

Considering the adequate material and welding penetration in construction.

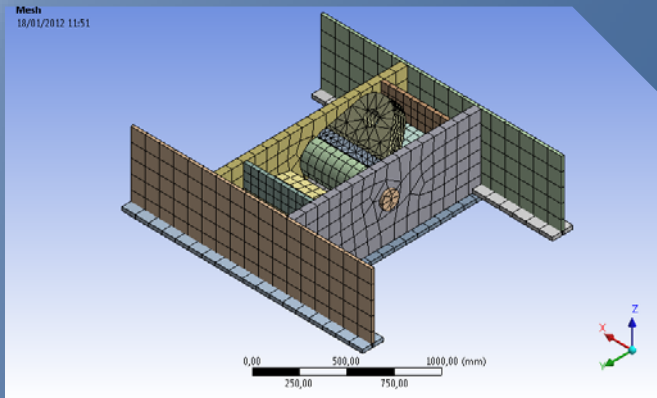
Safe factor were obtained on each part.

Gob eye was located over a tugboat bulkhead under main deck.

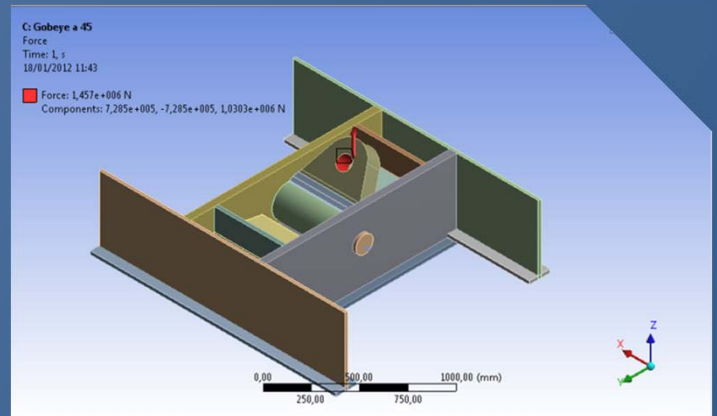


3D MODEL FOR ANALYSIS

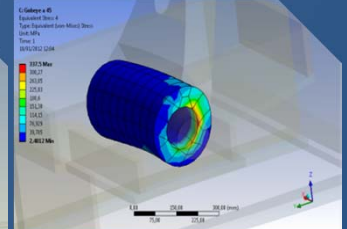
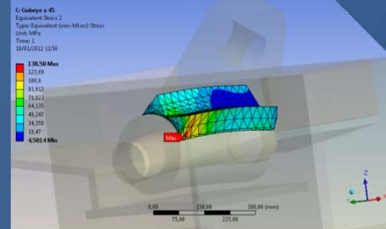
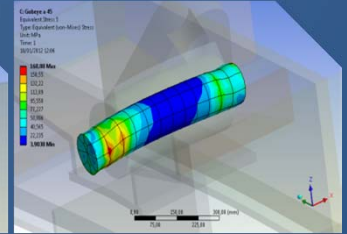
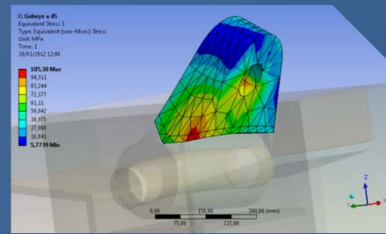
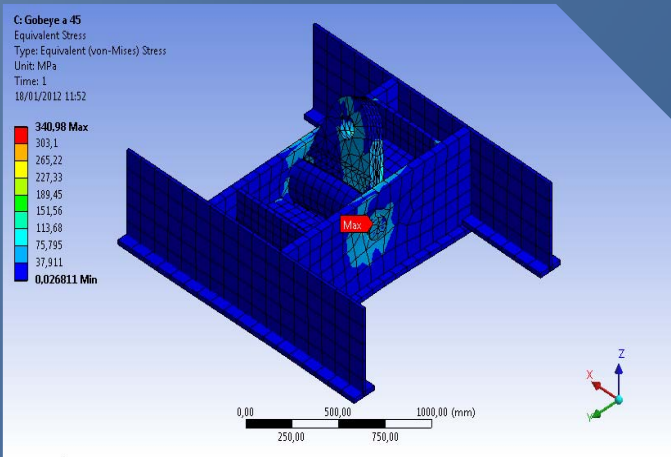
Finite Element Model



Load Application



Gob eye : Resultant Components Stress



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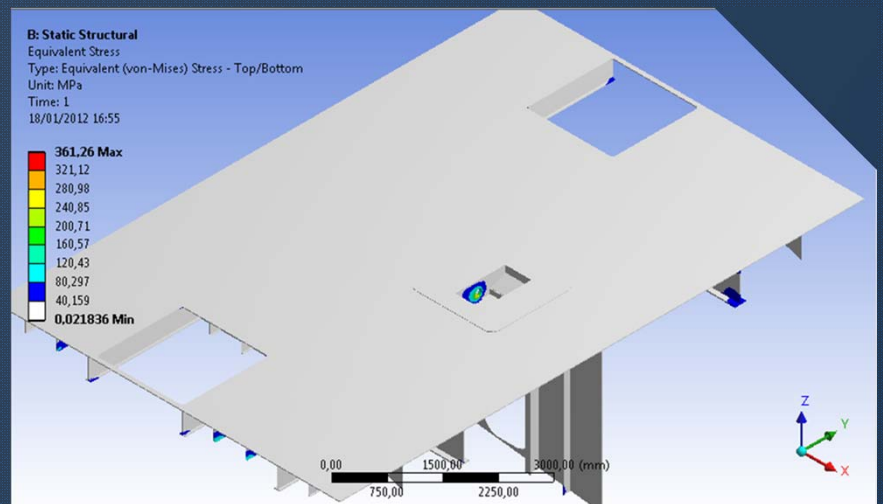
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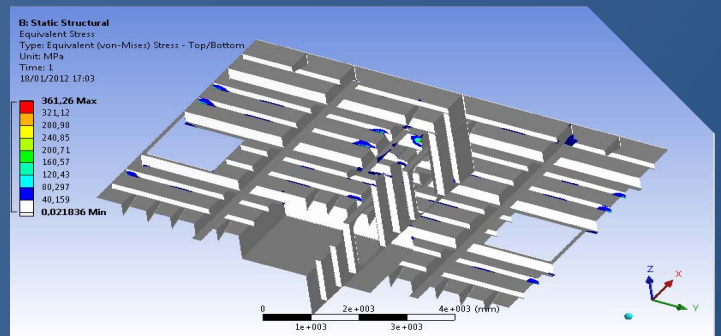
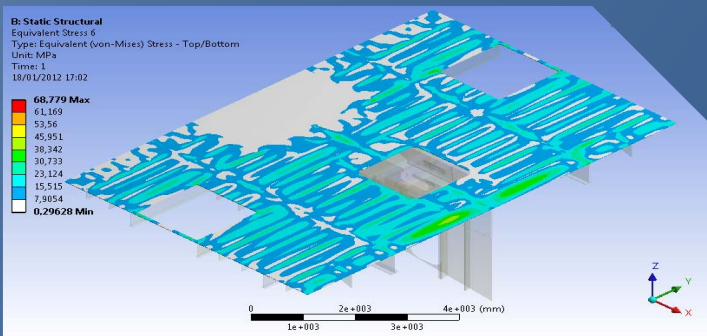
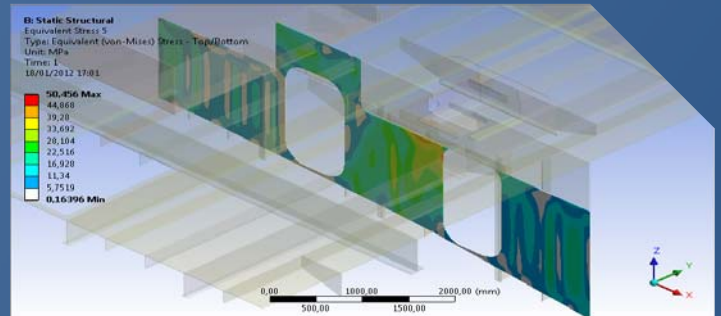
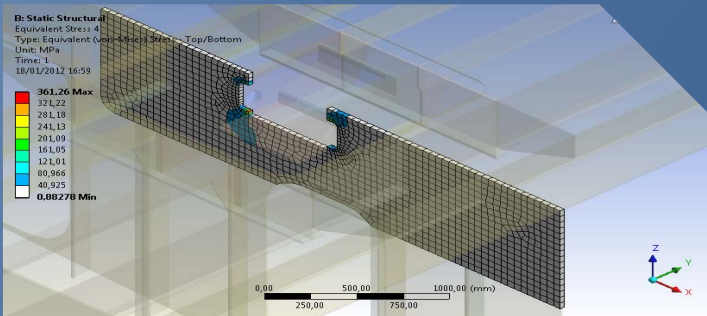
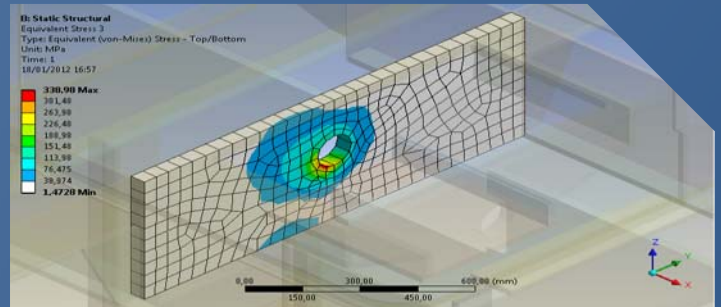
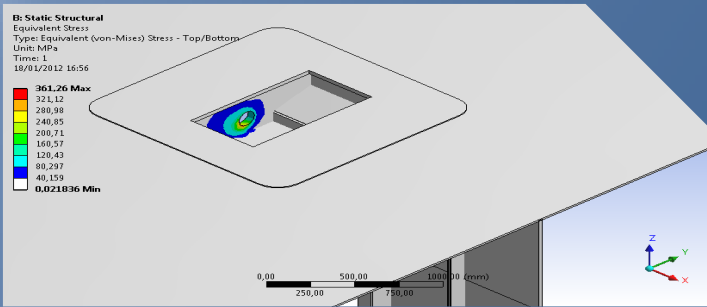
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Gob eye Surrounding Structure Stress



Gob eye: Surrounding Structure Resultant Stress



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Analysis & conclusions

- Selected materials and thickness are adequate for Gob eye for actual operation
- Low safety factor were found on shaft support and in bulkhead insert, and recommended to weld a collar on support plate
- Analysis shown that eye and eye support should be use complete penetration weld.
- Construction plans were done by Tecnavin S. A. with final dimensions and materials.

