

Engineering

Design and engineering of specialised machines. Design and structural analyse of steel structure and lifting appliance and lifting accessories. 3-D modelling, manufacturing drawings and specifications.

Production

Prepare manufacturing documentation and as built documentation.

Fabicon AS

Design and Engineering

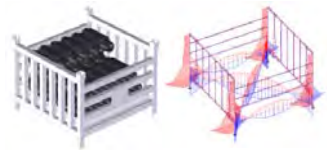
- Developing solutions for automation of production line for drill pipe production. 3-D modelling, calculations, animation and manufacturing drawings
- Design, analyse and verification of steel structures according to NORSOK, (N.001, etc.), DnV (OS-C101, OS-E101) NS 3472 or Eurocode (Staad Pro, ANSYS FEM/FEA)
- Design of lifting equipment according to the Regulation for Machinery No. 820 FOR 1994-08-19 or DnV 2.7-1 /2.7-3
- Design and engineering of offshore containers and modules according to DnV 2.7-1 / EN 12079, DnV 2.7-2 and DnV 2.7-3
- Design of mud systems inclusive mud tanks, piping and process equipment, evaluate pumps etc. according to NORSOK (D-001) and DnV (OS-E101)
- Design of pressure vessels according to BS PD550 og EN 13445 or API.
- Design of pipe supports, access platforms and ladders to oil refinery according to L-SP-002 and N-SP-001
- Third parties Verification of lifting calculations for according to NORSOK N-004 and M-501, Regulation for Machinery No 820 FOR 1994-08-19 and DnV 2.7-1

Production

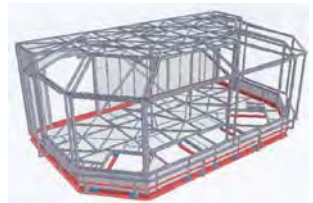
- Cooperating with manufacturing companies in Spain, Poland and Romania with focus on high quality and low cost.
- Health Safety and Environment (HSE) in focus
- High quality equipment and machines
- Certified welders
- Quality control of production, arrange transport and custom clearance.



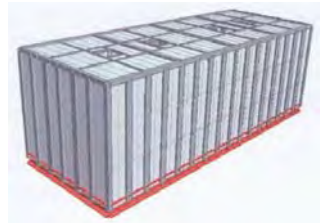
Automatic grinding machine for internal grinding in drill pipes
Client: AGR Dpal AS



Basket for tool joints
Client: AGR Dpal AS



Structural Analysis of driller cabin
Customer: National Oilwell



Mud System upgrade Oseberg C
Customer: Virtdrill AS



Production of Baskets in Poland
Client: AGR Dpal AS

Fabicon AS

Postal address:
Po.Box 40
5951 LINDÅS

Visiting address
Mongstad Base
Mongstad Sør
5954 Mongstad

Phone: (+47) 95 17 76 96

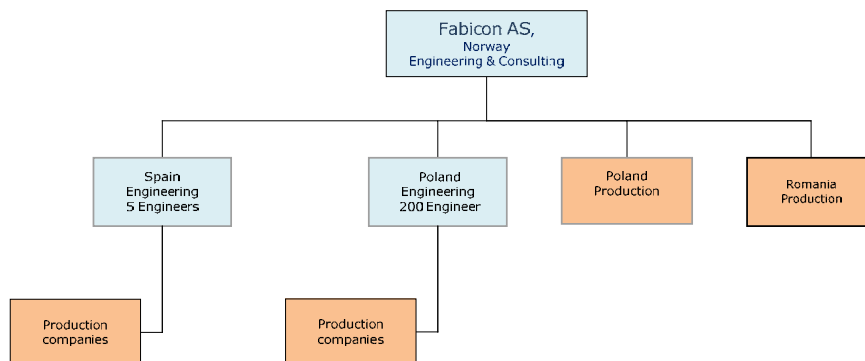
E-mail: post@fabicon.no

www.fabicon.no

Fabicon international:

Fabicon AS is a Engineering company with branches / cooperating companies in several countries, among others Spain and Poland. Totally we have more than 200 highly qualified engineers with experience within many fields. A great deal of these have experience from Norwegian oil and gas projects.

Fabicon AS
International network



Fabicon AS is located at Mongstad Base, Mongstad Sør



Prequalified in Achilles

QA: ISO 9000/9001

Fokus på HSE

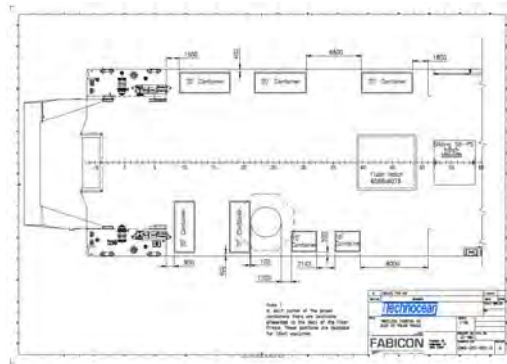
Ratet to AAA of
Dun & Bradstreet
2006, 2007 and 2008



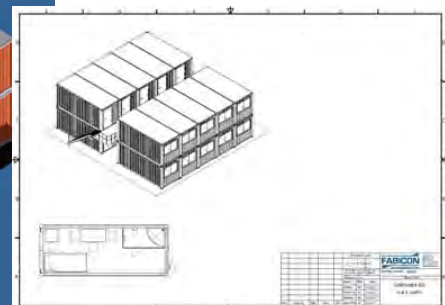
Some examples of projects accomplished in 2008

To the left: Deck arrangement Polar Pioneer.
Client: Technocean AS

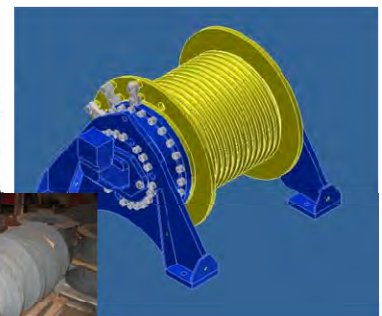
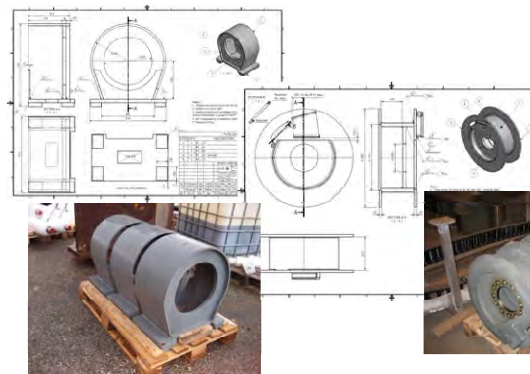
To the right: 3-d modell / animation of wind mill.
Client: Mongstad Engineering AS



3-d Model for illustration of containerised accommodation rig
Client: Mongstad Engineering AS

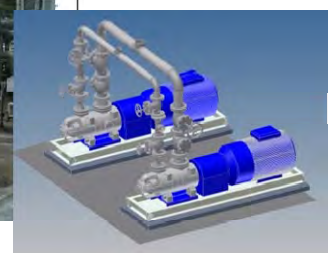
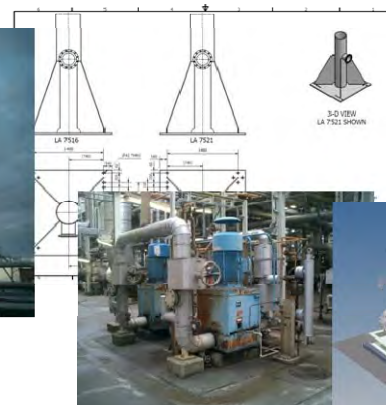


Manufacturing of parts to winch
Client: Fedje Mek. Industrier AS



Replacement of loading arms jetty 2 and replacement of pumps for water wash

Statoil Mongstad Client: Aker Solutions

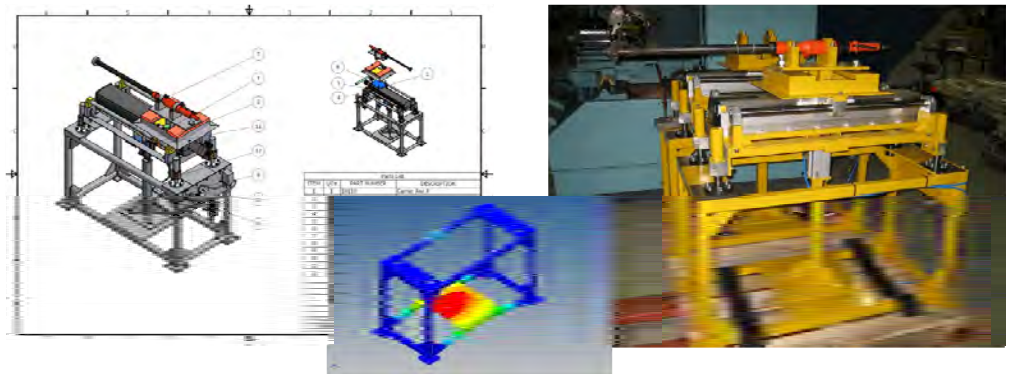


Some examples of projects accomplished in 2008

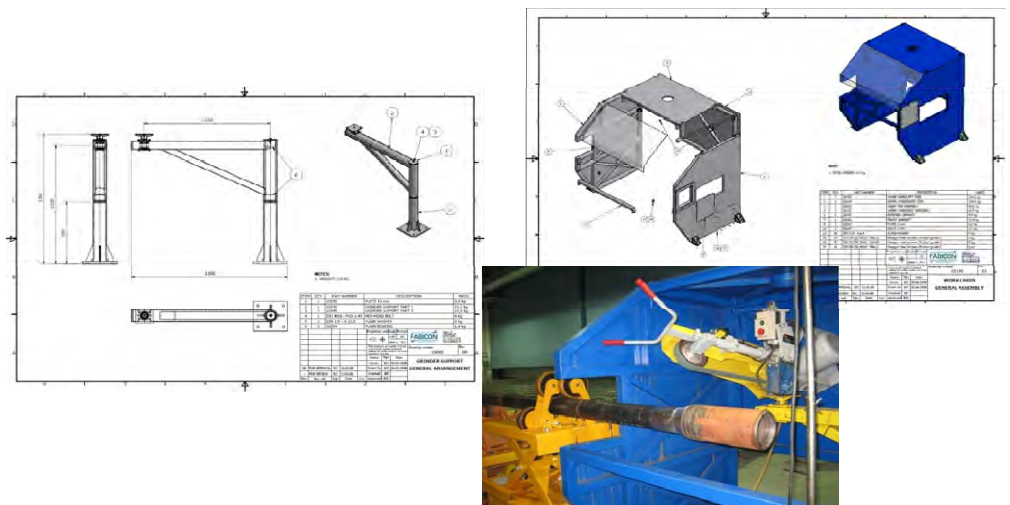
From idea to finalised product

Client: AGR Dpal Mongstad

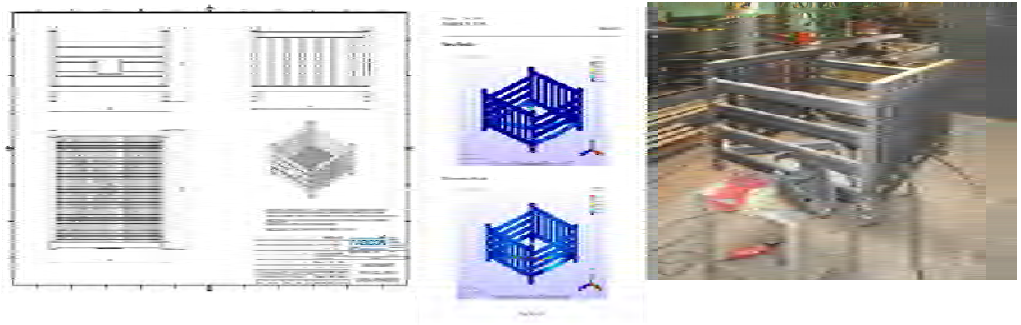
Design and manufacturing of grinding machine for internal grinding of drill pipes.



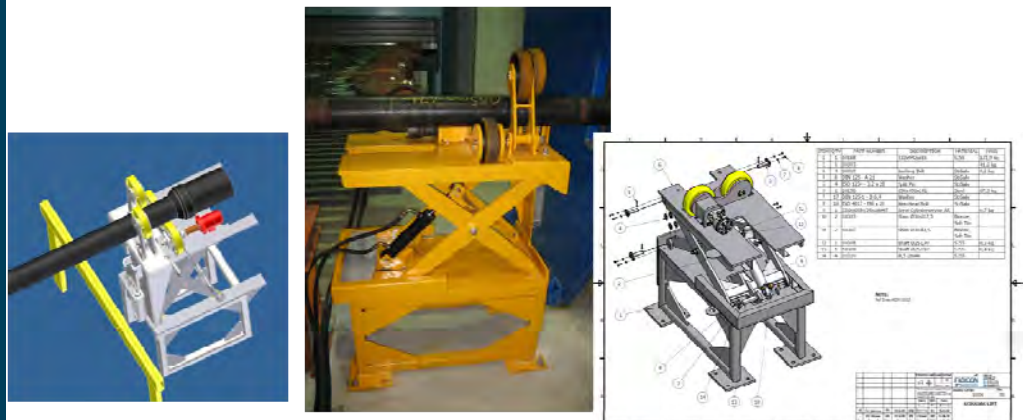
Design and manufacturing of foundation and cabin for belt grinder. External grinding of drill pipes.



Design and manufacturing of baskets for tool joints



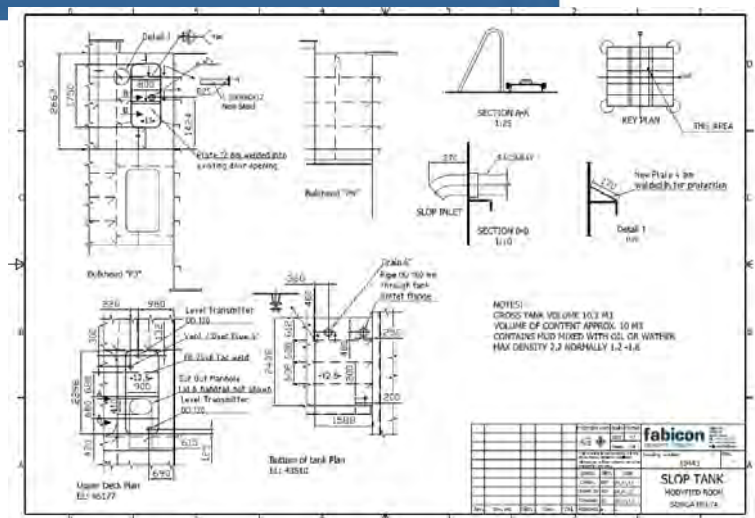
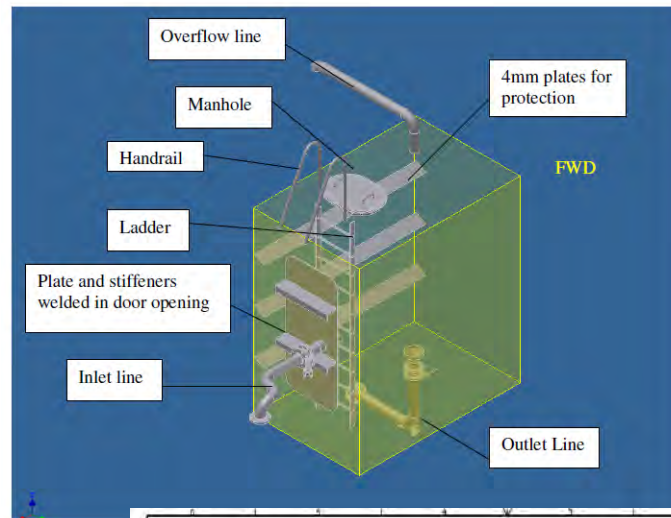
Design and manufacturing of sissors lift for lifting and revolving drill pipes.



Some examples of projects accomplished in 2012

Arrangement drawing and calculation of slop tank on-Songa Delta

Customer: YIT



Some examples of projects accomplished in 2012 / 2013

Different Projects:

Calculation of storage tanks

Calculation of steel buildings

Design offshore service

Module

Lifting Calculations .



Page 8 of 11

Project: No. na
Document: No. 10424
Fabicon AS

3.2 Load case 2 for state II

The following figures show deformation and stress for State II, LC2.



Fig. 21 Total deflection of state II, LC2

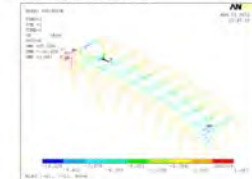


Fig. 22 Stress distribution of state II, LC2

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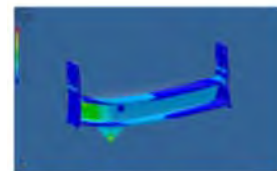
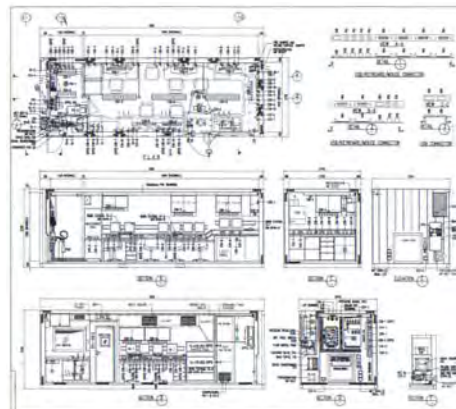
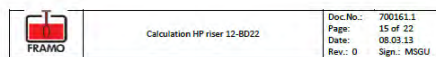
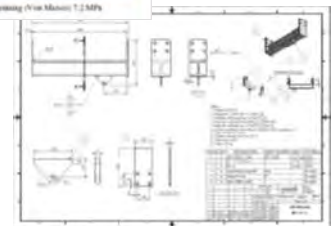


Fig. 3, Load case 3, state I: Stress distribution (from Mises) 7.2 MPa



Doc No.: 700161.1
Page: 15 of 22
Date: 08.03.13
Rev.: 0
Sign: MSGU

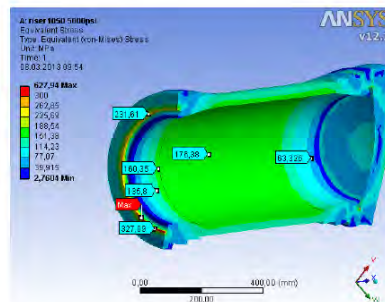


Fig. 9: Equivalent stress, riser 3200mm

As can be seen on the picture, the hub has a region around the ring groove with higher stresses. This is due to the constraint set on this model. As the stresses are present only in the edge where the hub is constrained this must be seen as a singularity.

Project: No. 6001
Document: No. 10461

Fabicon Engineering AS

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Project no.: 6001
Document no.: 10461
Page: 1 of 2

Title: Design Verification Report, RCA Riser 13383 mm

Customer: Frank Mohn Mongstad AS

Summary:

References:

Attachments:

REVISIONS					
No.	Date	Description	By	Checked	Approved
00	11.07.13	DVE	AV	SC	KFF
Rev	Date	Description	By	Checked	Approved

Verification of Calculations
Client: Frank Mohn Mongstad

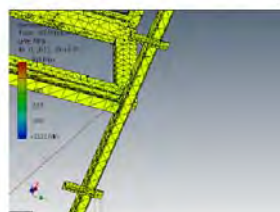
Some examples of projects accomplished in 2013

Calculation of Manifold Platform

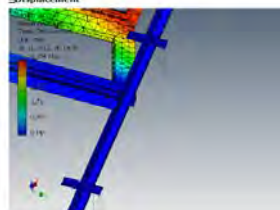
Client: Songa Offshore As

Project Nr: 21051
Document Nr: 10449

Fabicon Engineering AS



Displacement



Safety Factor



Project Nr: 21051
Document Nr: 10449

Fabicon Engineering AS



Figure 8.3: Strand model, manifold load

In the manifold load is included weight of the mud inside the manifold, the wet weight, it could be considered as a variable load, but as a conservative approach it is included with the dry weight of the manifold.

The walkway load is taken as 4 kN/m² as per NORSOK N-003, and as it is shown in the previous chapter.

These loads are modeled as member loads uniform distributed.



Page 43 of 52

Calculation of SubSea Frames

Client: Radøygruppen

Engineering AS

For Framo Engineering AS

Project Nr: 6002
Document Nr: 10458

Fabicon Engineering AS

4.2 Load case 2 - Impact during 2-point lifting according to DNV2.7-3

4.2.1 Geometry

The model used in load case 2 is similar to the one used in load case 1, ref 4.1.1.

4.2.2 Mesh

The mesh used in load case 2 is similar to the one in load case 1.

4.2.3 Boundary conditions and loads

As for load case 1, a point mass and acceleration have been applied onto the structure.

To simulate the impact load, a rigid force has been applied to a square area with length of 90 mm x 90 mm on one of the side girders positioned in the middle of its length. This area is considered as the part of the member with least structural resistance. The applied force according to [1], [10]

$$F_{HD} = 5.00 \times \text{test load} = 5.00 \times 2.5 = 12.500 \times 9.81 = 26312.31 \text{ N}$$

The supports and restraints are similar to the ones used in load case 1.

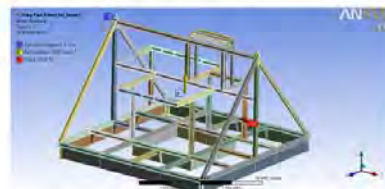
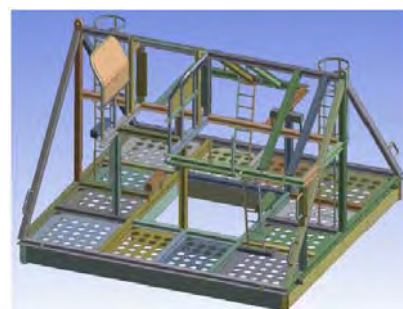


Figure 6.5: Load and support for load case 2

4.2.4 Results

Figures 16 to 19 show that all calculated stress levels are below material allowable.

There is only a minor area that has a stress level of above the material limit see Figure 17. This is due to sharp edges. Since the stress level is well below allowable values it is considered acceptable. The structure is concluded to be structurally satisfactory for the given loads.



Project Nr: 6002
Document Nr: 10458

Fabicon Engineering AS

4.3.2 Modeling

The FE 3D model of the TFF constructed in STAAD pro is made of beam elements only, each with three degrees of freedom (displacement in all three axes). There are a total of 83 elements and 51 nodes in the model. See Figure 20.



Figure 20: FE model - load case 2 - 3 temporary support points loading

Some examples of projects accomplished in 2013

Diverse prosjekter

As built tegninger rørarrangement Alexela Sløvåg.

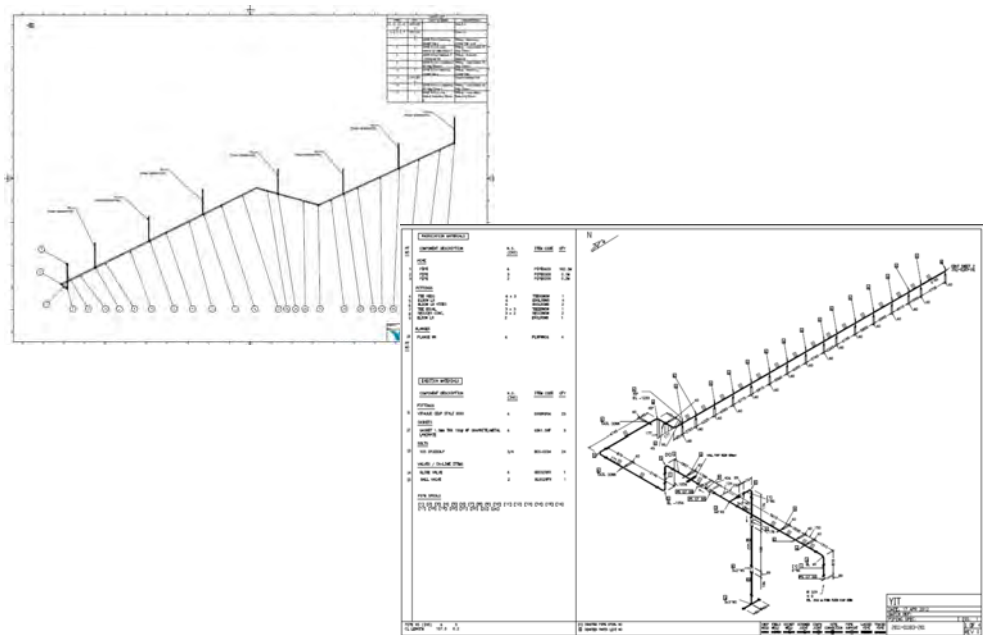
Kunde: YIT

Produksjonsunderlag og beregninger Guide arm for Sub-sea tool

Kunde: VMS SafePort

Beregning av Subsea tool

Kunde: VMS SafePort



5.3 Structural calculations (Eurocode 3 [2] & [3])

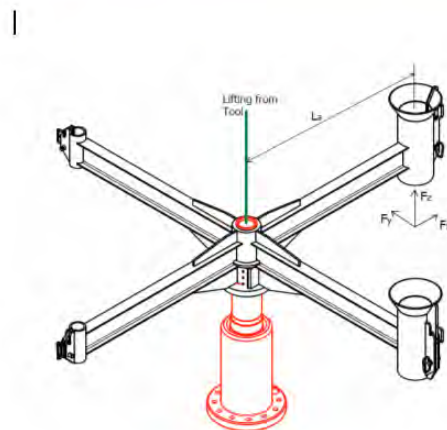
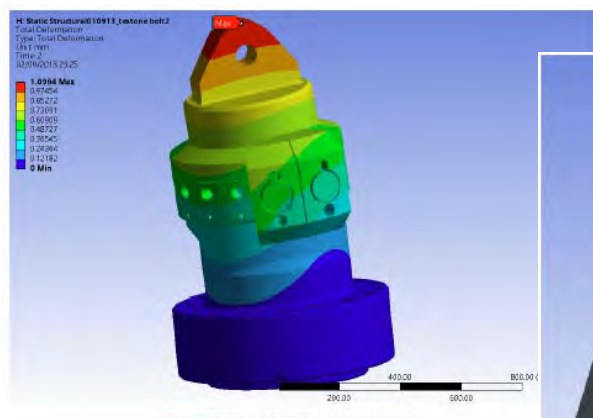


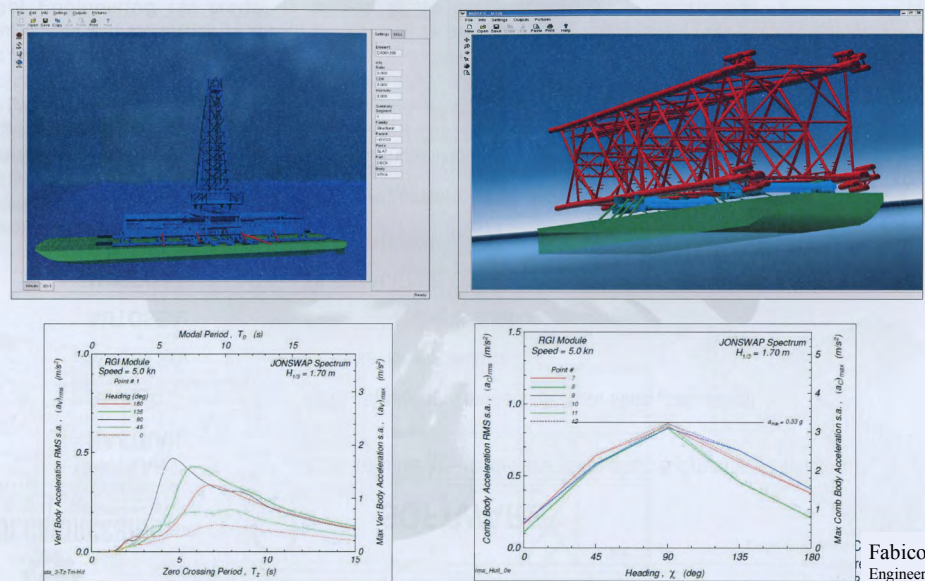
Figure 5 Loads on the structure Tool shown in read.



Ship / Offshore

Advanced Analysis

To the right:
Advanced Dynamic
Offshore Analysis



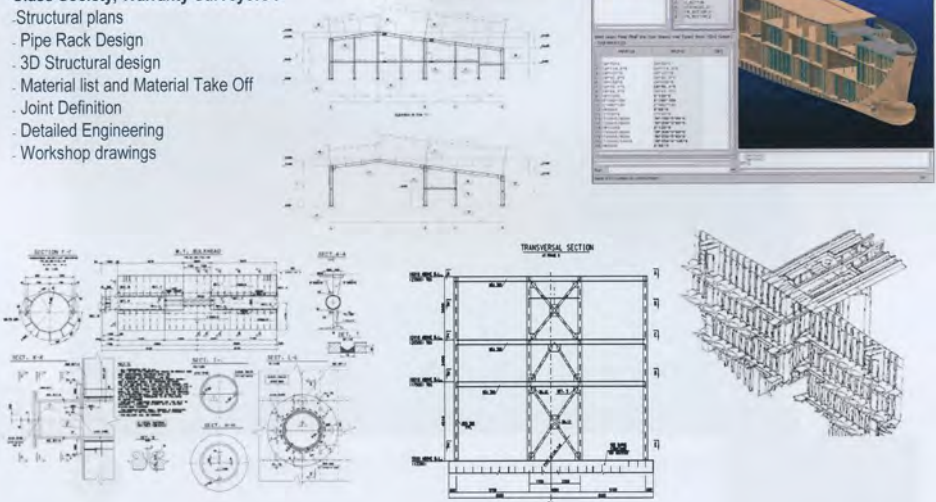
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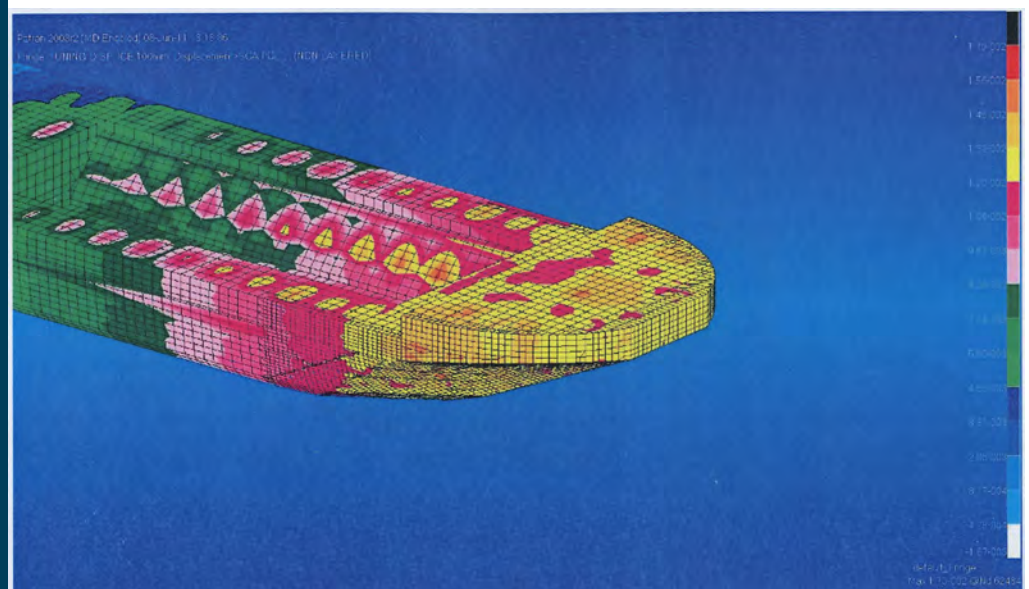
To the right:
Examples of
Marine & Offshore
Engineering

Fabicon Engineering can provide to develop all the structural documentation and calculation to supply for approval to the Client, Class Society, Warranty Surveyors :

- Structural plans
- Pipe Rack Design
- 3D Structural design
- Material list and Material Take Off
- Joint Definition
- Detailed Engineering
- Workshop drawings



To the right:
Global Hull Analysis
Direct explicit method



Ship / Offshore

Advanced Analysis

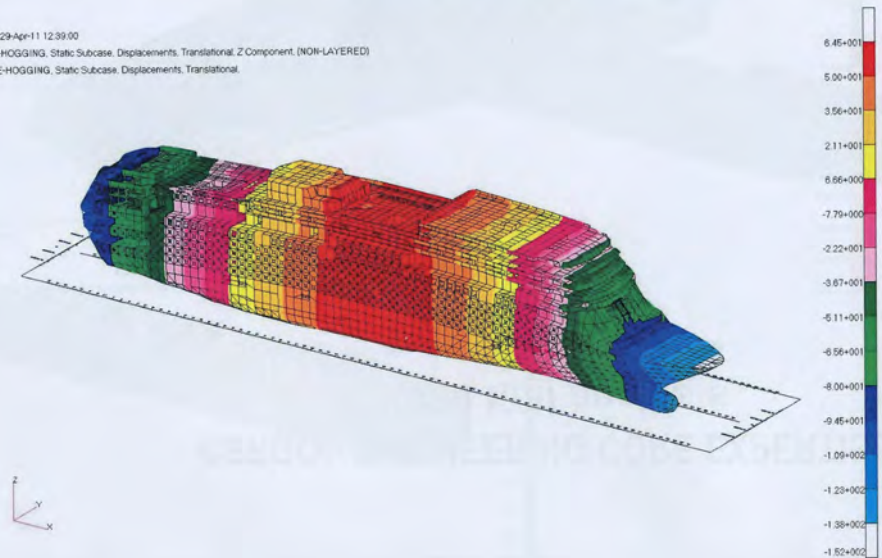
Global Hull Analysis

Global Hull Analysis

Noise Analysis

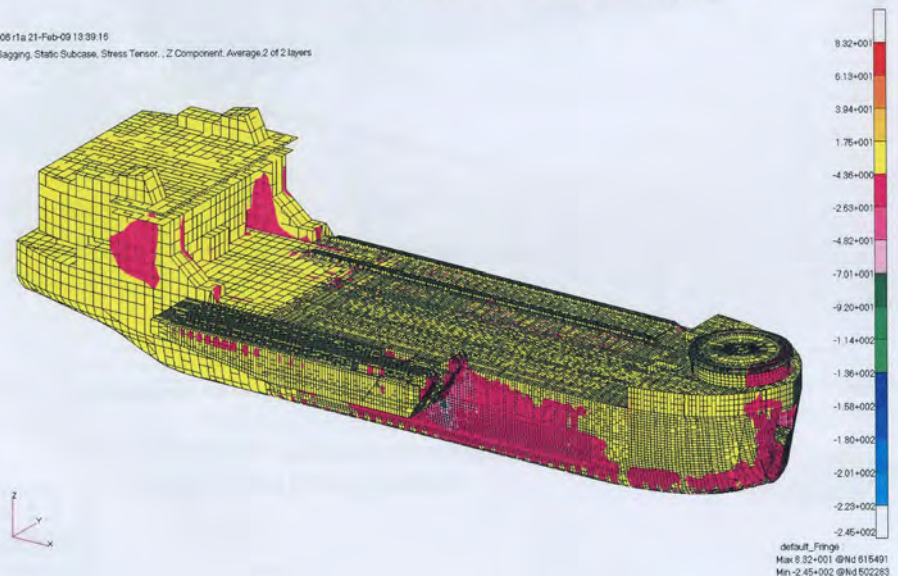
Global hull analysis

Patran 2008/2 29-Apr-11 12:39:00
Fringe: WAVE-HOGGING, Static Subcase, Displacements, Translational, Z Component, (NOH-LAYERED)
Deform: WAVE-HOGGING, Static Subcase, Displacements, Translational



Global hull analysis

MSC Patran 2008 r1a 21-Feb-09 13:39:16
Fringe: LD-01-Sagging, Static Subcase, Stress Tensor, Z Component, Average, 2 of 2 layers



The noise prediction analysis includes:

- Structural borne and air borne noise sources analysis
- Geometric arrangement and material characteristics
- Irradiation and coupling factor between ship structure and fittings
- Evaluation of noise levels
- Acoustic insulation and flooring plans drawing for noise level reduction

