ANYstructure report generator

User: CEFANY

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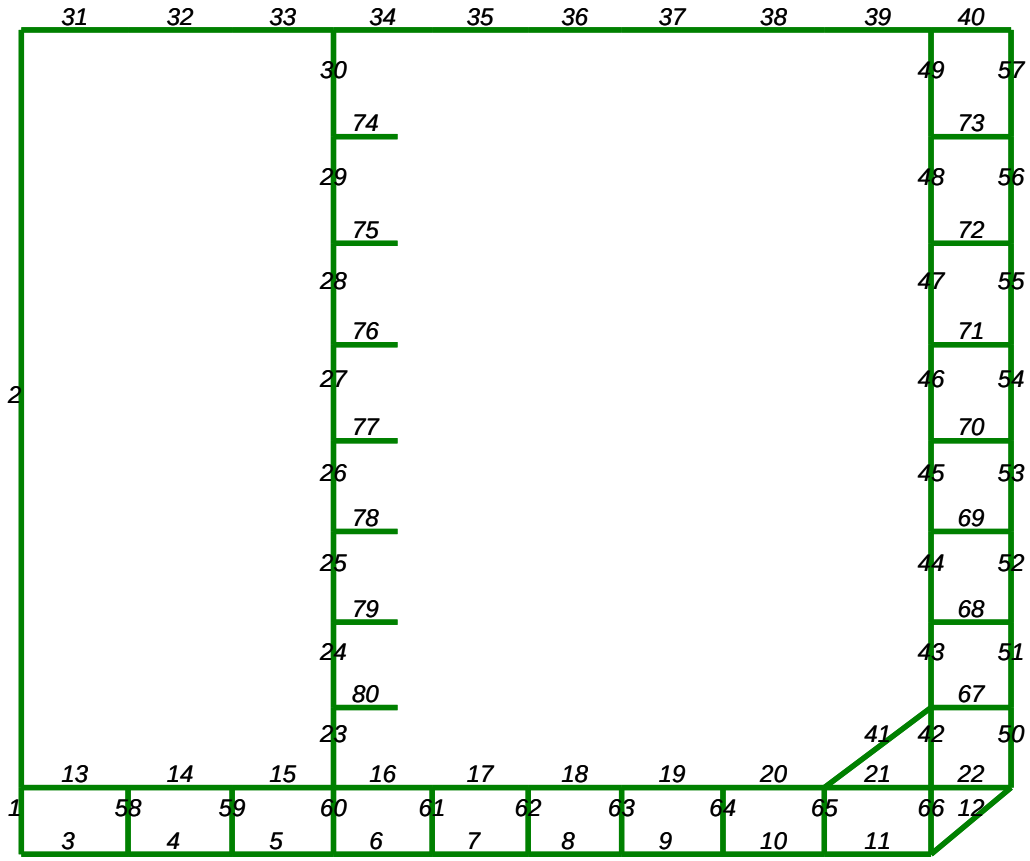
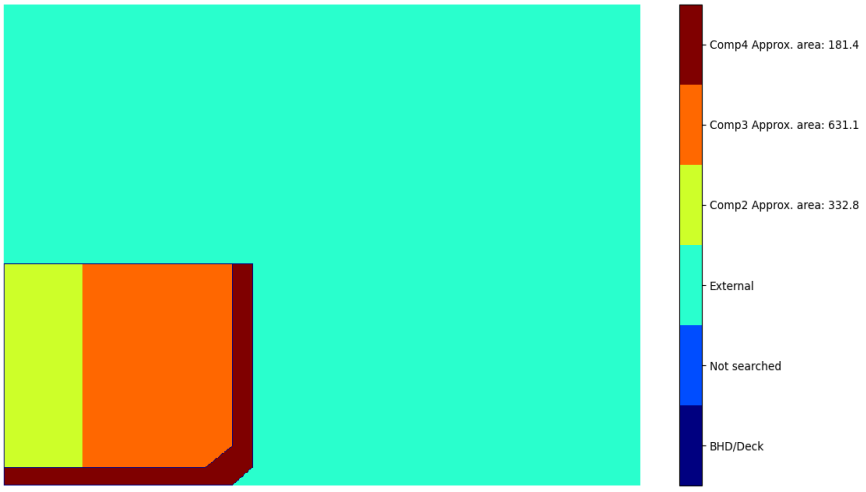
Example file for ANYstructure



Compartments:

Compartments returned from search operation displayed below



*area calculation inaccuracies due to thickness of barriers (BHD/Deck)

Name: comp2, content: crude_oil
Min. elevation: 2.5, Max. elevation: 30.9
Applied overpressure: 25000.0
(a_stat, a_dyn_loa, a_dyn_bal): (9.81, 3.0, 3.0)

Name: comp3, content: crude_oil
Min. elevation: 2.5, Max. elevation: 30.900000000000002
Applied overpressure: 25000.0
(a_stat, a_dyn_loa, a_dyn_bal): (9.81, 3.0, 3.0)

Name: comp4, content: ballast
Min. elevation: 0.0, Max. elevation: 30.900000000000002
Applied overpressure: 25000.0
(a_stat, a_dyn_loa, a_dyn_bal): (9.81, 3.0, 3.0)

********** line1 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 2.5 [m]
Stiffener: 250.0x18.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 20.0 sigma_y1 = 40.0 sigma_y2 = 40.0 tau_xy = 5.0
ULS max pressure for line: 471860.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1036266 [mm3] Min. section modulus: 630181 [mm3] -> OK
Min plate thickness: 13.67 [mm] -> OK
Shear area: 5111 [mm2] Min shear area: 2322 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.33
PULS ultimate utilization = 0.32
No fatigue results

********** line10 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.8 [m]
Stiffener: 400.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 50.0 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 5.0
ULS max pressure for line: 487210.0 [kPa] Pressure applied at: plate side
Fatigue pressure [Pa]: p_int: loaded/ballast/part = 0/15836.0/0 p_ext: loaded/ballast/part = 225953.0/69179.0/0
Section modulus: 1737387 [mm3] Min. section modulus: 1983693 [mm3] -> NOT OK
Min plate thickness: 15.41 [mm] -> OK
Shear area: 5256 [mm2] Min shear area: 3950 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.8
PULS ultimate utilization = 0.78
Fatigue (plate/stiffeners) utilization: 0.01 * DFF(2.0) = 0.01 (SN-curve = Ec)

********** line11 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 4.0 [m]
Stiffener: 500.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 50.0 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 5.0
ULS max pressure for line: 521419.99999999994 [kPa] Pressure applied at: plate side
Fatigue pressure [Pa]: p_int: loaded/ballast/part = 0/15836.0/0 p_ext: loaded/ballast/part = 244943.0/73821.0/0
Section modulus: 2318424 [mm3] Min. section modulus: 2352319 [mm3] -> NOT OK
Min plate thickness: 15.94 [mm] -> OK
Shear area: 6456 [mm2] Min shear area: 4449 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.8
PULS ultimate utilization = 0.8
Fatigue (plate/stiffeners) utilization: 0.01 * DFF(2.0) = 0.02 (SN-curve = Ec)

********** line12 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.9051 [m]
Stiffener: 500.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 50.0 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 5.0
ULS max pressure for line: 557210.0 [kPa] Pressure applied at: plate side
Fatigue pressure [Pa]: p_int: loaded/ballast/part = 0/15409.0/0 p_ext: loaded/ballast/part = 275492.0/81079.0/0
Section modulus: 2318424 [mm3] Min. section modulus: 2395968 [mm3] -> NOT OK
Min plate thickness: 16.48 [mm] -> OK
Shear area: 6456 [mm2] Min shear area: 4642 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.8
PULS ultimate utilization = 0.8
Fatigue (plate/stiffeners) utilization: 0.01 * DFF(2.0) = 0.03 (SN-curve = Ec)

********** line13 **********
Plate thickness: 20.0 [mm] Stiffener spacing: 775.0 [mm] Span: 4.0 [m]
Stiffener: 450.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 436310.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 2044973 [mm3] Min. section modulus: 1959271 [mm3] -> OK
Min plate thickness: 14.79 [mm] -> OK
Shear area: 5880 [mm2] Min shear area: 3829 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.64
PULS ultimate utilization = 0.62
No fatigue results

********** line14 **********
Plate thickness: 20.0 [mm] Stiffener spacing: 775.0 [mm] Span: 4.0 [m]
Stiffener: 450.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 436310.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 2044973 [mm3] Min. section modulus: 1959271 [mm3] -> OK
Min plate thickness: 14.79 [mm] -> OK
Shear area: 5880 [mm2] Min shear area: 3829 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.64
PULS ultimate utilization = 0.62
No fatigue results

********** line15 **********
Plate thickness: 20.0 [mm] Stiffener spacing: 775.0 [mm] Span: 4.0 [m]
Stiffener: 450.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 436310.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 2044973 [mm3] Min. section modulus: 1959271 [mm3] -> OK
Min plate thickness: 14.79 [mm] -> OK
Shear area: 5880 [mm2] Min shear area: 3829 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.64
PULS ultimate utilization = 0.62
No fatigue results

********** line16 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 775.0 [mm] Span: 3.7 [m]
Stiffener: 375.0x12.0 + 150.0x18.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 436310.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1499963 [mm3] Min. section modulus: 1676401 [mm3] -> NOT OK
Min plate thickness: 14.79 [mm] -> OK
Shear area: 4932 [mm2] Min shear area: 3541 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.76
PULS ultimate utilization = 0.73
No fatigue results

********** line17 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 775.0 [mm] Span: 3.6 [m]
Stiffener: 375.0x12.0 + 150.0x18.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 436310.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1499963 [mm3] Min. section modulus: 1587009 [mm3] -> NOT OK
Min plate thickness: 14.79 [mm] -> OK
Shear area: 4932 [mm2] Min shear area: 3446 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.76
PULS ultimate utilization = 0.72
No fatigue results

********** line18 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 775.0 [mm] Span: 3.5 [m]
Stiffener: 375.0x12.0 + 150.0x18.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 436310.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1499963 [mm3] Min. section modulus: 1500067 [mm3] -> NOT OK
Min plate thickness: 14.79 [mm] -> OK
Shear area: 4932 [mm2] Min shear area: 3350 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.75
PULS ultimate utilization = 0.71
No fatigue results

********** line19 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 775.0 [mm] Span: 3.8 [m]
Stiffener: 375.0x12.0 + 150.0x18.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 436310.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1499963 [mm3] Min. section modulus: 1768242 [mm3] -> NOT OK
Min plate thickness: 14.79 [mm] -> OK
Shear area: 4932 [mm2] Min shear area: 3637 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.77
PULS ultimate utilization = 0.74
No fatigue results

********** line2 **********
Plate thickness: 16.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.0 [m]
Stiffener: 400.0x18.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 20.0 sigma_y1 = 40.0 sigma_y2 = 40.0 tau_xy = 5.0
ULS max pressure for line: 387070.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1931105 [mm3] Min. section modulus: 744392 [mm3] -> OK
Min plate thickness: 12.38 [mm] -> OK
Shear area: 7847 [mm2] Min shear area: 2286 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.29
PULS ultimate utilization = 0.27
No fatigue results

********** line20 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 775.0 [mm] Span: 3.8 [m]
Stiffener: 375.0x12.0 + 150.0x18.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 436310.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1499963 [mm3] Min. section modulus: 1768242 [mm3] -> NOT OK
Min plate thickness: 14.79 [mm] -> OK
Shear area: 4932 [mm2] Min shear area: 3637 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.77
PULS ultimate utilization = 0.74
No fatigue results

********** line21 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 4.0 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.23
PULS ultimate utilization = 0.23
No fatigue results

********** line22 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.0 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line23 **********
Plate thickness: 15.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.0 [m]
Stiffener: 350.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 387070.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1444282 [mm3] Min. section modulus: 946162 [mm3] -> OK
Min plate thickness: 13.48 [mm] -> OK
Shear area: 4620 [mm2] Min shear area: 2465 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.89
PULS ultimate utilization = 0.8
No fatigue results

********** line24 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.2 [m]
Stiffener: 350.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 349610.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1468865 [mm3] Min. section modulus: 972352 [mm3] -> OK
Min plate thickness: 12.81 [mm] -> OK
Shear area: 4656 [mm2] Min shear area: 2375 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.68
PULS ultimate utilization = 0.63
No fatigue results

********** line25 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.4 [m]
Stiffener: 350.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 309660.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1468865 [mm3] Min. section modulus: 972258 [mm3] -> OK
Min plate thickness: 12.06 [mm] -> OK
Shear area: 4656 [mm2] Min shear area: 2235 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.7
PULS ultimate utilization = 0.64
No fatigue results

********** line26 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.4 [m]
Stiffener: 320.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 267210.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1314959 [mm3] Min. section modulus: 838982 [mm3] -> OK
Min plate thickness: 11.2 [mm] -> OK
Shear area: 4296 [mm2] Min shear area: 1929 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.7
PULS ultimate utilization = 0.63
No fatigue results

********** line27 **********
Plate thickness: 15.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.6 [m]
Stiffener: 320.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 224760.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1293077 [mm3] Min. section modulus: 791169 [mm3] -> OK
Min plate thickness: 10.27 [mm] -> OK
Shear area: 4260 [mm2] Min shear area: 1718 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.98
PULS ultimate utilization = 0.82
No fatigue results

********** line28 **********
Plate thickness: 15.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.8 [m]
Stiffener: 320.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 179820.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1293077 [mm3] Min. section modulus: 705247 [mm3] -> OK
Min plate thickness: 9.19 [mm] -> OK
Shear area: 4260 [mm2] Min shear area: 1450 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 1.0
PULS ultimate utilization = 0.82
No fatigue results

********** line29 **********
Plate thickness: 15.0 [mm] Stiffener spacing: 750.0 [mm] Span: 4.0 [m]
Stiffener: 300.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 132380.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1195190 [mm3] Min. section modulus: 575270 [mm3] -> OK
Min plate thickness: 7.88 [mm] -> OK
Shear area: 4020 [mm2] Min shear area: 1124 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 1.02
PULS ultimate utilization = 0.83
No fatigue results

********** line3 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 700.0 [mm] Span: 4.0 [m]
Stiffener: 400.0x12.0 + 200.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 101.7 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 5.0
ULS max pressure for line: 412610.0 [kPa] Pressure applied at: plate side
Fatigue pressure [Pa]: p_int: loaded/ballast/part = 0/15836.0/0 p_ext: loaded/ballast/part = 160852.0/45744.0/0
Section modulus: 2109784 [mm3] Min. section modulus: 1856240 [mm3] -> OK
Min plate thickness: 13.68 [mm] -> OK
Shear area: 5256 [mm2] Min shear area: 3434 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.71
PULS ultimate utilization = 0.69
Fatigue (plate/stiffeners) utilization: 0.14 * DFF(2.0) = 0.28 (SN-curve = Ec)

********** line30 **********
Plate thickness: 15.0 [mm] Stiffener spacing: 750.0 [mm] Span: 4.0 [m]
Stiffener: 300.0x12.0 + 150.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 82440.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1195190 [mm3] Min. section modulus: 358252 [mm3] -> OK
Min plate thickness: 6.22 [mm] -> OK
Shear area: 4020 [mm2] Min shear area: 700 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 1.02
PULS ultimate utilization = 0.8
No fatigue results

********** line31 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 700.0 [mm] Span: 4.0 [m]
Stiffener: 250.0x12.0 + 150.0x14.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 3.0
ULS max pressure for line: 32500.0 [kPa] Pressure applied at: plate side
 Fatigue pressure: No pressures defined
Section modulus: 760403 [mm3] Min. section modulus: 122486 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 3384 [mm2] Min shear area: 257 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.52
PULS ultimate utilization = 0.45
No fatigue results

********** line32 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.9 [m]
Stiffener: 250.0x12.0 + 150.0x14.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 3.0
ULS max pressure for line: 32500.0 [kPa] Pressure applied at: plate side
 Fatigue pressure: No pressures defined
Section modulus: 760403 [mm3] Min. section modulus: 116438 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 3384 [mm2] Min shear area: 251 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.52
PULS ultimate utilization = 0.45
No fatigue results

********** line33 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.8 [m]
Stiffener: 250.0x12.0 + 150.0x14.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 3.0
ULS max pressure for line: 32500.0 [kPa] Pressure applied at: plate side
 Fatigue pressure: No pressures defined
Section modulus: 760403 [mm3] Min. section modulus: 110543 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 3384 [mm2] Min shear area: 244 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.52
PULS ultimate utilization = 0.45
No fatigue results

********** line34 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.7 [m]
Stiffener: 250.0x12.0 + 150.0x14.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 3.0
ULS max pressure for line: 32500.0 [kPa] Pressure applied at: plate side
 Fatigue pressure: No pressures defined
Section modulus: 760403 [mm3] Min. section modulus: 104802 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 3384 [mm2] Min shear area: 238 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.51
PULS ultimate utilization = 0.44
No fatigue results

********** line35 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.6 [m]
Stiffener: 250.0x12.0 + 150.0x14.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 3.0
ULS max pressure for line: 32500.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 760403 [mm3] Min. section modulus: 99214 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 3384 [mm2] Min shear area: 231 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.51
PULS ultimate utilization = 0.44
No fatigue results

********** line36 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.5 [m]
Stiffener: 250.0x12.0 + 150.0x14.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 3.0
ULS max pressure for line: 32500.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 760403 [mm3] Min. section modulus: 93778 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 3384 [mm2] Min shear area: 225 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.51
PULS ultimate utilization = 0.44
No fatigue results

********** line37 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.8 [m]
Stiffener: 250.0x12.0 + 150.0x14.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 3.0
ULS max pressure for line: 32500.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 760403 [mm3] Min. section modulus: 110543 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 3384 [mm2] Min shear area: 244 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.52
PULS ultimate utilization = 0.45
No fatigue results

********** line38 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.8 [m]
Stiffener: 250.0x12.0 + 150.0x14.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 3.0
ULS max pressure for line: 32500.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 760403 [mm3] Min. section modulus: 110543 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 3384 [mm2] Min shear area: 244 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.52
PULS ultimate utilization = 0.45
No fatigue results

********** line39 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 700.0 [mm] Span: 4.0 [m]
Stiffener: 250.0x12.0 + 150.0x14.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 3.0
ULS max pressure for line: 32500.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 760403 [mm3] Min. section modulus: 122486 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 3384 [mm2] Min shear area: 257 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.52
PULS ultimate utilization = 0.45
No fatigue results

********** line4 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.9 [m]
Stiffener: 400.0x12.0 + 250.0x14.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 100.5 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 5.0
ULS max pressure for line: 406560.0 [kPa] Pressure applied at: plate side
Fatigue pressure [Pa]: p_int: loaded/ballast/part = 0/15836.0/0 p_ext: loaded/ballast/part = 154116.0/46603.0/0
Section modulus: 1933615 [mm3] Min. section modulus: 1733642 [mm3] -> OK
Min plate thickness: 13.56 [mm] -> OK
Shear area: 5184 [mm2] Min shear area: 3295 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.69
PULS ultimate utilization = 0.67
Fatigue (plate/stiffeners) utilization: 0.11 * DFF(2.0) = 0.23 (SN-curve = Ec)

********** line40 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.0 [m]
Stiffener: 250.0x12.0 + 150.0x14.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 3.0
ULS max pressure for line: 32500.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 760403 [mm3] Min. section modulus: 68898 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 3384 [mm2] Min shear area: 193 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.49
PULS ultimate utilization = 0.41
No fatigue results

********** line41 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 775.0 [mm] Span: 5.0 [m]
Stiffener: 500.0x12.0 + 150.0x25.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 90.0 sigma_y2 = 90.0 tau_xy = 5.0
ULS max pressure for line: 436310.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 2664299 [mm3] Min. section modulus: 3061361 [mm3] -> NOT OK
Min plate thickness: 14.79 [mm] -> OK
Shear area: 6516 [mm2] Min shear area: 4786 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.8
PULS ultimate utilization = 0.8
No fatigue results

********** line42 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.0 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line43 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.2 [m]
Stiffener: 325.0x12.0 + 150.0x16.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 80.0 sigma_y2 = 80.0 tau_xy = 5.0
ULS max pressure for line: 393660.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1157685 [mm3] Min. section modulus: 1054698 [mm3] -> OK
Min plate thickness: 13.38 [mm] -> OK
Shear area: 4308 [mm2] Min shear area: 2674 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.62
PULS ultimate utilization = 0.58
No fatigue results

********** line44 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.4 [m]
Stiffener: 325.0x12.0 + 150.0x16.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 80.0 sigma_y2 = 80.0 tau_xy = 5.0
ULS max pressure for line: 348160.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1157685 [mm3] Min. section modulus: 1053036 [mm3] -> OK
Min plate thickness: 12.58 [mm] -> OK
Shear area: 4308 [mm2] Min shear area: 2513 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.64
PULS ultimate utilization = 0.58
No fatigue results

********** line45 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.4 [m]
Stiffener: 325.0x12.0 + 150.0x16.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 80.0 sigma_y2 = 80.0 tau_xy = 5.0
ULS max pressure for line: 299810.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1157685 [mm3] Min. section modulus: 906814 [mm3] -> OK
Min plate thickness: 11.68 [mm] -> OK
Shear area: 4308 [mm2] Min shear area: 2164 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.64
PULS ultimate utilization = 0.57
No fatigue results

********** line46 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.6 [m]
Stiffener: 325.0x12.0 + 150.0x16.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 80.0 sigma_y2 = 80.0 tau_xy = 5.0
ULS max pressure for line: 251470.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1157685 [mm3] Min. section modulus: 852706 [mm3] -> OK
Min plate thickness: 10.7 [mm] -> OK
Shear area: 4308 [mm2] Min shear area: 1922 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.65
PULS ultimate utilization = 0.58
No fatigue results

********** line47 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.8 [m]
Stiffener: 325.0x12.0 + 150.0x16.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 80.0 sigma_y2 = 80.0 tau_xy = 5.0
ULS max pressure for line: 200280.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1157685 [mm3] Min. section modulus: 756688 [mm3] -> OK
Min plate thickness: 9.54 [mm] -> OK
Shear area: 4308 [mm2] Min shear area: 1615 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.66
PULS ultimate utilization = 0.58
No fatigue results

********** line48 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 4.0 [m]
Stiffener: 325.0x12.0 + 150.0x16.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 80.0 sigma_y2 = 80.0 tau_xy = 5.0
ULS max pressure for line: 146250.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1157685 [mm3] Min. section modulus: 612246 [mm3] -> OK
Min plate thickness: 8.16 [mm] -> OK
Shear area: 4308 [mm2] Min shear area: 1242 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.66
PULS ultimate utilization = 0.58
No fatigue results

********** line49 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 4.0 [m]
Stiffener: 325.0x12.0 + 150.0x16.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 80.0 sigma_y2 = 80.0 tau_xy = 5.0
ULS max pressure for line: 89380.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1157685 [mm3] Min. section modulus: 374150 [mm3] -> OK
Min plate thickness: 6.38 [mm] -> OK
Shear area: 4308 [mm2] Min shear area: 759 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.66
PULS ultimate utilization = 0.57
No fatigue results

********** line5 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.8 [m]
Stiffener: 400.0x12.0 + 250.0x14.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 102.7 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 5.0
ULS max pressure for line: 406570.0 [kPa] Pressure applied at: plate side
Fatigue pressure [Pa]: p_int: loaded/ballast/part = 0/15836.0/0 p_ext: loaded/ballast/part = 154131.0/47644.0/0
Section modulus: 1941924 [mm3] Min. section modulus: 1773060 [mm3] -> OK
Min plate thickness: 14.57 [mm] -> OK
Shear area: 5184 [mm2] Min shear area: 3449 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.77
PULS ultimate utilization = 0.74
Fatigue (plate/stiffeners) utilization: 0.21 * DFF(2.0) = 0.42 (SN-curve = Ec)

********** line50 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.0 [m]
Stiffener: 340.0x12.0 + 200.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 3.0
ULS max pressure for line: 300310.0 [kPa] Pressure applied at: plate side
Fatigue pressure [Pa]: p_int: loaded/ballast/part = 0/0/0 p_ext: loaded/ballast/part = 0/0/0
Section modulus: 1744455 [mm3] Min. section modulus: 763118 [mm3] -> OK
Min plate thickness: 12.11 [mm] -> OK
Shear area: 4536 [mm2] Min shear area: 1912 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.7
PULS ultimate utilization = 0.65
Fatigue (plate/stiffeners) utilization: 0 * DFF(2.0) = 0.0 (SN-curve = Ec)

********** line51 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.2 [m]
Stiffener: 340.0x12.0 + 200.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 3.0
ULS max pressure for line: 295490.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1744455 [mm3] Min. section modulus: 854303 [mm3] -> OK
Min plate thickness: 12.01 [mm] -> OK
Shear area: 4536 [mm2] Min shear area: 2007 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.72
PULS ultimate utilization = 0.67
No fatigue results

********** line52 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.4 [m]
Stiffener: 340.0x12.0 + 200.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 3.0
ULS max pressure for line: 248230.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1744455 [mm3] Min. section modulus: 810177 [mm3] -> OK
Min plate thickness: 11.01 [mm] -> OK
Shear area: 4536 [mm2] Min shear area: 1791 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.74
PULS ultimate utilization = 0.67
No fatigue results

********** line53 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.4 [m]
Stiffener: 340.0x12.0 + 200.0x20.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 3.0
ULS max pressure for line: 214040.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1744455 [mm3] Min. section modulus: 698592 [mm3] -> OK
Min plate thickness: 10.22 [mm] -> OK
Shear area: 4536 [mm2] Min shear area: 1545 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.74
PULS ultimate utilization = 0.67
No fatigue results

********** line54 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.6 [m]
Stiffener: 340.0x12.0 + 150.0x16.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 3.0
ULS max pressure for line: 196180.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1226521 [mm3] Min. section modulus: 717840 [mm3] -> OK
Min plate thickness: 9.78 [mm] -> OK
Shear area: 4488 [mm2] Min shear area: 1499 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.8
PULS ultimate utilization = 0.71
No fatigue results

********** line55 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.8 [m]
Stiffener: 340.0x12.0 + 150.0x16.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 3.0
ULS max pressure for line: 189070.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1226521 [mm3] Min. section modulus: 770832 [mm3] -> OK
Min plate thickness: 9.61 [mm] -> OK
Shear area: 4488 [mm2] Min shear area: 1525 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.81
PULS ultimate utilization = 0.72
No fatigue results

********** line56 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 4.0 [m]
Stiffener: 340.0x12.0 + 150.0x16.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 3.0
ULS max pressure for line: 105440.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1226521 [mm3] Min. section modulus: 476330 [mm3] -> OK
Min plate thickness: 7.17 [mm] -> OK
Shear area: 4488 [mm2] Min shear area: 895 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.82
PULS ultimate utilization = 0.71
No fatigue results

********** line57 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 4.0 [m]
Stiffener: 340.0x12.0 + 150.0x16.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 40.0 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 3.0
ULS max pressure for line: 155550.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 1226521 [mm3] Min. section modulus: 702710 [mm3] -> OK
Min plate thickness: 8.71 [mm] -> OK
Shear area: 4488 [mm2] Min shear area: 1321 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.82
PULS ultimate utilization = 0.73
No fatigue results

********** line58 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 2.5 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.21
PULS ultimate utilization = 0.21
No fatigue results

********** line59 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 2.5 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.21
PULS ultimate utilization = 0.21
No fatigue results

********** line6 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.7 [m]
Stiffener: 400.0x12.0 + 250.0x14.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 102.7 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 5.0
ULS max pressure for line: 412200.0 [kPa] Pressure applied at: plate side
Fatigue pressure [Pa]: p_int: loaded/ballast/part = 0/15836.0/0 p_ext: loaded/ballast/part = 160364.0/50846.0/0
Section modulus: 1941924 [mm3] Min. section modulus: 1704213 [mm3] -> OK
Min plate thickness: 14.67 [mm] -> OK
Shear area: 5184 [mm2] Min shear area: 3404 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.76
PULS ultimate utilization = 0.73
Fatigue (plate/stiffeners) utilization: 0.25 * DFF(2.0) = 0.49 (SN-curve = Ec)

********** line60 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 2.5 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.21
PULS ultimate utilization = 0.21
No fatigue results

********** line61 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 2.5 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.21
PULS ultimate utilization = 0.21
No fatigue results

********** line62 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 2.5 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.21
PULS ultimate utilization = 0.21
No fatigue results

********** line63 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 2.5 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.21
PULS ultimate utilization = 0.21
No fatigue results

********** line64 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 2.5 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.21
PULS ultimate utilization = 0.21
No fatigue results

********** line65 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 2.5 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.21
PULS ultimate utilization = 0.21
No fatigue results

********** line66 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 2.5 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.21
PULS ultimate utilization = 0.21
No fatigue results

********** line67 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.0 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line68 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.0 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line69 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.0 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line7 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.6 [m]
Stiffener: 400.0x12.0 + 250.0x12.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 101.5 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 5.0
ULS max pressure for line: 422990.0 [kPa] Pressure applied at: plate side
Fatigue pressure [Pa]: p_int: loaded/ballast/part = 0/15836.0/0 p_ext: loaded/ballast/part = 166364.0/52965.0/0
Section modulus: 1754468 [mm3] Min. section modulus: 1650647 [mm3] -> OK
Min plate thickness: 14.84 [mm] -> OK
Shear area: 5160 [mm2] Min shear area: 3394 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.76
PULS ultimate utilization = 0.73
Fatigue (plate/stiffeners) utilization: 0.29 * DFF(2.0) = 0.57 (SN-curve = Ec)

********** line70 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.0 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line71 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.0 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line72 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.0 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line73 **********
Plate thickness: 14.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.0 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 358911 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4751 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line74 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 800.0 [mm] Span: 2.4 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 376008 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4823 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using bucklingutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line75 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 800.0 [mm] Span: 2.4 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 376008 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4823 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using bucklingutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line76 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 800.0 [mm] Span: 2.4 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 376008 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4823 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using bucklingutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line77 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 800.0 [mm] Span: 2.4 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 376008 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4823 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using bucklingutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line78 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 800.0 [mm] Span: 2.4 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
Fatigue pressure: No pressures defined
Section modulus: 376008 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4823 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using bucklingutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

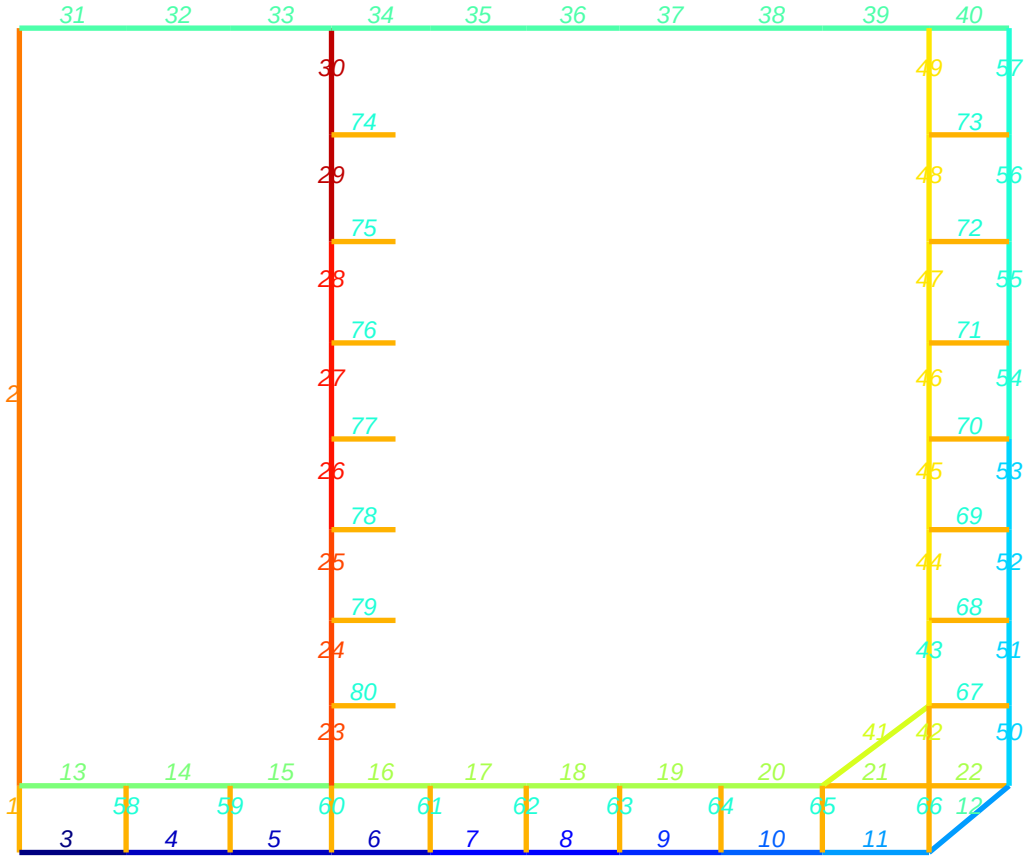
********** line79 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 800.0 [mm] Span: 2.4 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
 Fatigue pressure: No pressures defined
Section modulus: 376008 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4823 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using bucklingutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line8 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 750.0 [mm] Span: 3.5 [m]
Stiffener: 400.0x12.0 + 250.0x12.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 101.5 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 5.0
ULS max pressure for line: 438510.0 [kPa] Pressure applied at: plate side
Fatigue pressure [Pa]: p_int: loaded/ballast/part = 0/15836.0/0 p_ext: loaded/ballast/part = 183598.0/58138.0/0
Section modulus: 1754468 [mm3] Min. section modulus: 1617476 [mm3] -> OK
Min plate thickness: 15.11 [mm] -> OK
Shear area: 5160 [mm2] Min shear area: 3421 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.76
PULS ultimate utilization = 0.73
Fatigue (plate/stiffeners) utilization: 0.43 * DFF(2.0) = 0.86 (SN-curve = Ec)

********** line80 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 800.0 [mm] Span: 2.4 [m]
Stiffener: 250.0x18.0 + 0.0x0.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 60.0 sigma_y1 = 70.0 sigma_y2 = 70.0 tau_xy = 10.0
ULS max pressure for line: 0.0 [kPa] Pressure applied at: plate side
 Fatigue pressure: No pressures defined
Section modulus: 376008 [mm3] Min. section modulus: 3375 [mm3] -> OK
Min plate thickness: 4.07 [mm] -> OK
Shear area: 4823 [mm2] Min shear area: 0 [mm2] -> OK
PULS results using bucklingutilization with acceptance 0.87
PULS buckling utilization = 0.22
PULS ultimate utilization = 0.22
No fatigue results

********** line9 **********
Plate thickness: 18.0 [mm] Stiffener spacing: 700.0 [mm] Span: 3.8 [m]
Stiffener: 400.0x12.0 + 200.0x18.0
Fixation paramters: kps: = 1.0 kpp = 1.0, Bending moment factors km1/km2/km3 (support/field/support) = 12/24/12
Defined stresses [MPa]: sigma_x = 100.7 sigma_y1 = 100.0 sigma_y2 = 100.0 tau_xy = 5.0
ULS max pressure for line: 459640.0 [kPa] Pressure applied at: plate side
Fatigue pressure [Pa]: p_int: loaded/ballast/part = 0/15836.0/0 p_ext: loaded/ballast/part = 195318.0/61338.0/0
Section modulus: 1962424 [mm3] Min. section modulus: 1861651 [mm3] -> OK
Min plate thickness: 14.42 [mm] -> OK
Shear area: 5232 [mm2] Min shear area: 3630 [mm2] -> OK
PULS results using ultimateutilization with acceptance 0.87
PULS buckling utilization = 0.7
PULS ultimate utilization = 0.69
Fatigue (plate/stiffeners) utilization: 0.14 * DFF(2.0) = 0.27 (SN-curve = Ec)

Model beam section properties



FB_250_0x18_0

FB_400_0x18_0

T_400_0x12_0__200_0x20_0

T_400_0x12_0__250_0x14_0

T_400_0x12_0__250_0x12_0

T_400_0x12_0__200_0x18_0

T_400_0x12_0__150_0x20_0

T_500_0x12_0__150_0x20_0

T_450_0x12_0__150_0x20_0

T_375_0x12_0__150_0x18_0

T_350_0x12_0__150_0x20_0

T_320_0x12_0__150_0x20_0

T_300_0x12_0__150_0x20_0

T_250_0x12_0__150_0x14_0

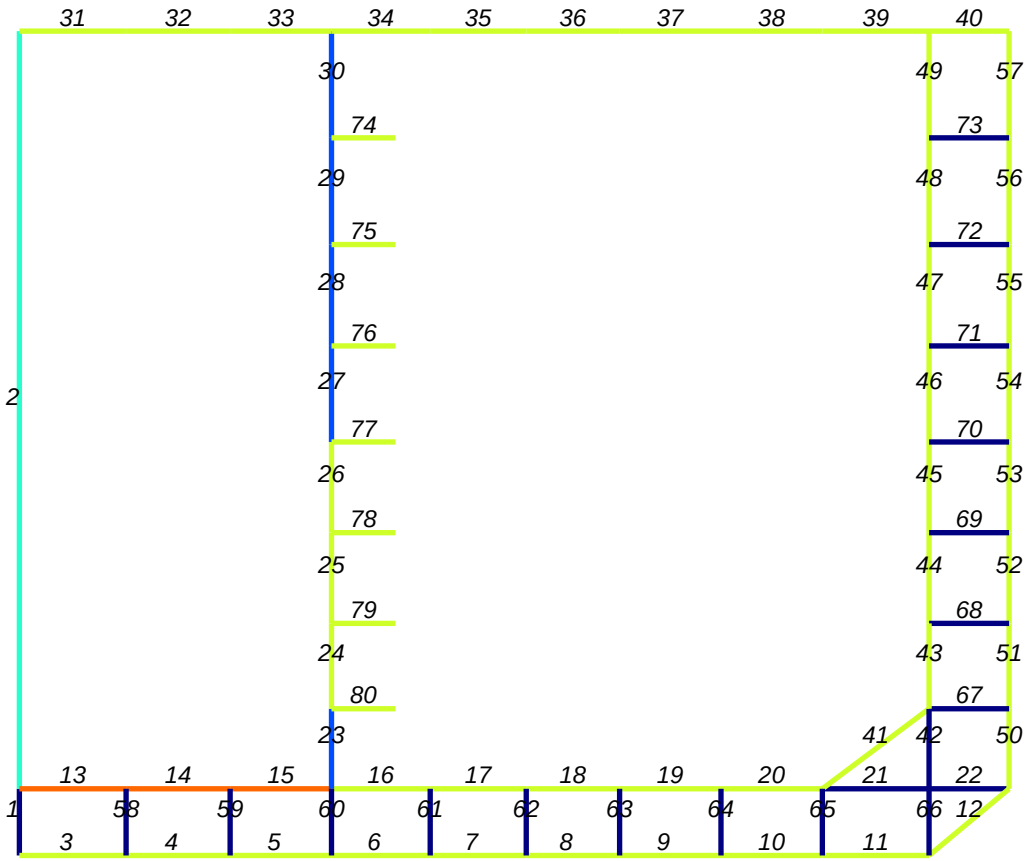
T_500_0x12_0__150_0x25_0

T_325_0x12_0__150_0x16_0

T_340_0x12_0__200_0x20_0

T_340_0x12_0__150_0x16_0

Model plate thicknesses



14.0 mm

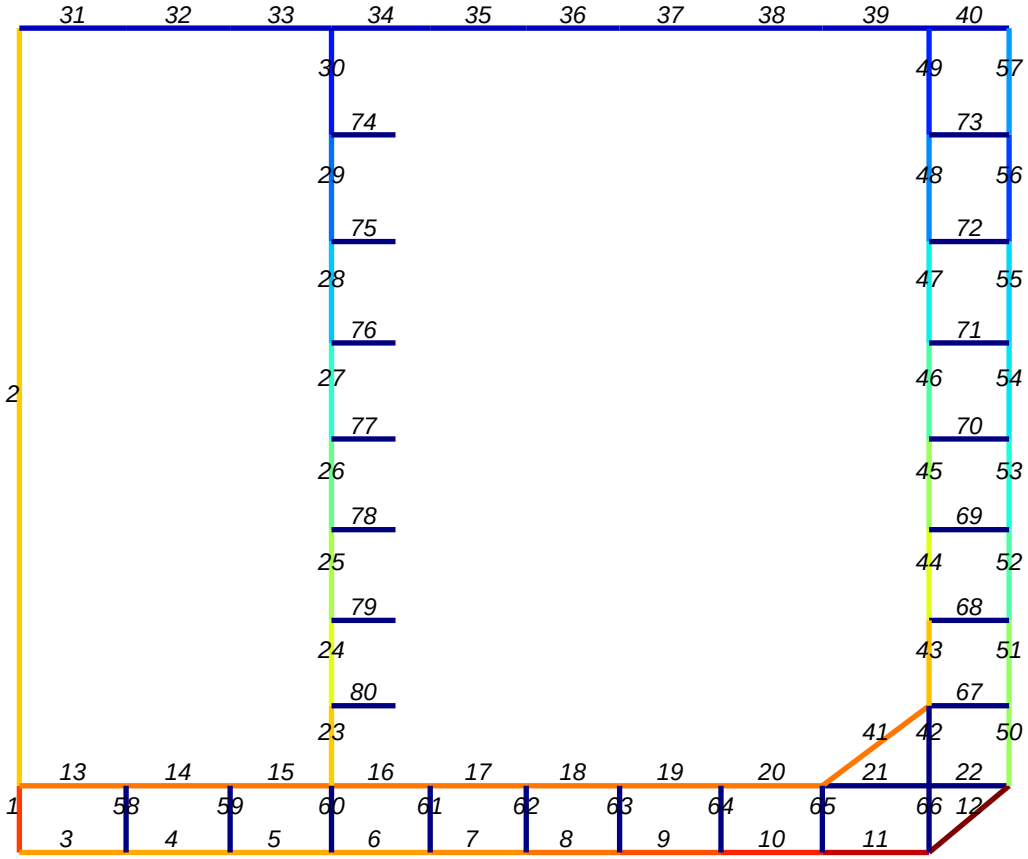
15.0 mm

16.0 mm

18.0 mm

20.0 mm

Highest pressures for lines in model



0.0

55721.4

111442.8

167164.2

222885.6

278607.0

334328.4

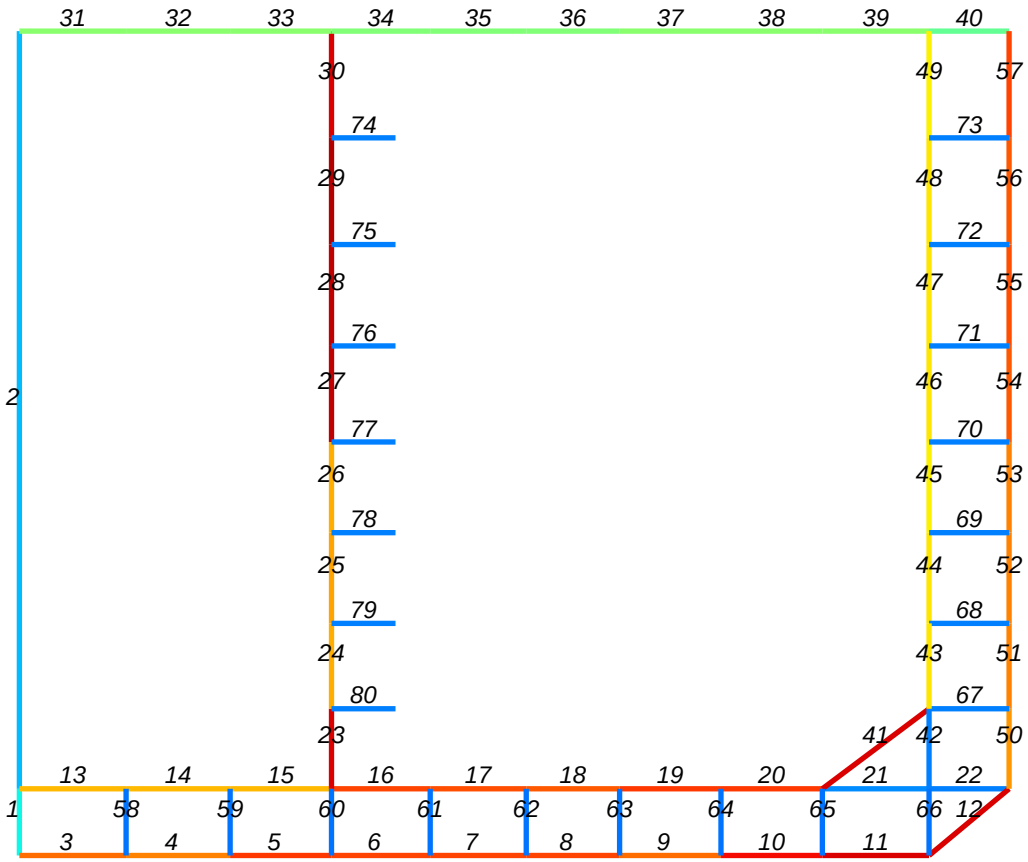
390049.8

445771.2

501492.6

557214

Utilization factors (max of all checks) - PULS (Panel Ultimate Limit State)



UF = 0.0

UF = 0.1

UF = 0.2

UF = 0.3

UF = 0.4

UF = 0.5

UF = 0.6

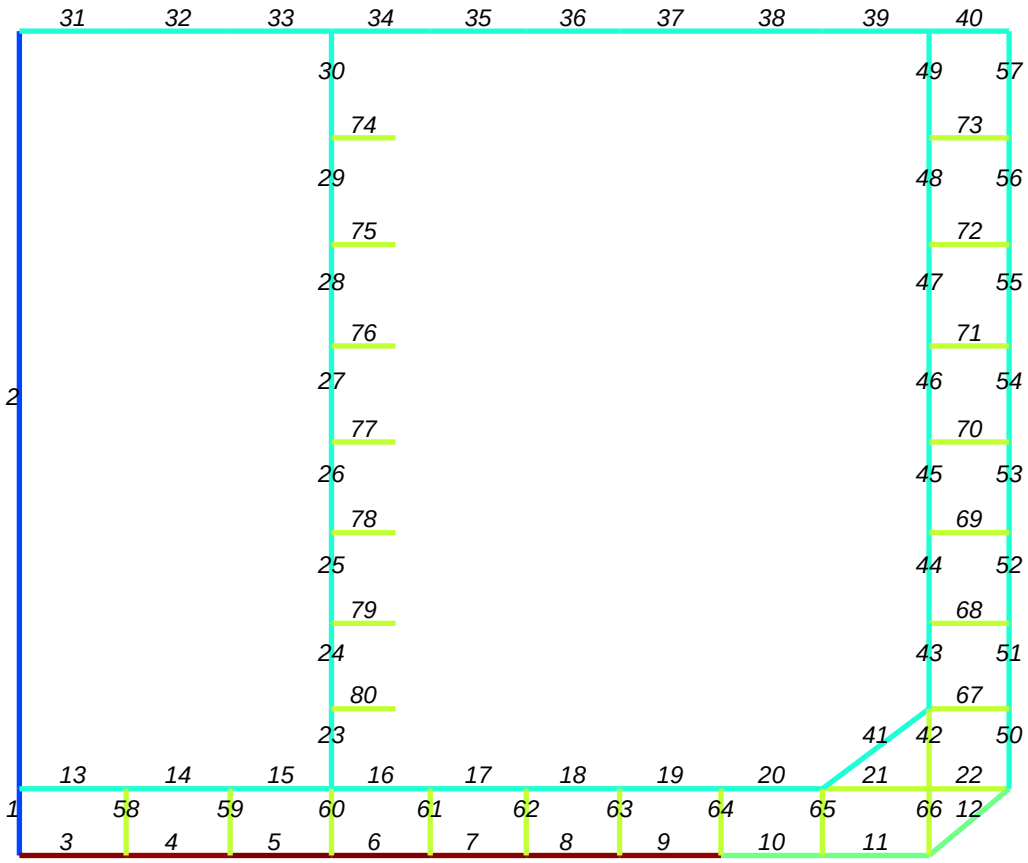
UF = 0.7

UF = 0.8

UF = 0.9

UF = 1.0

Global stresses - sigma x



20.0

28.27

36.54

44.81

53.08

61.349999999999994

69.62

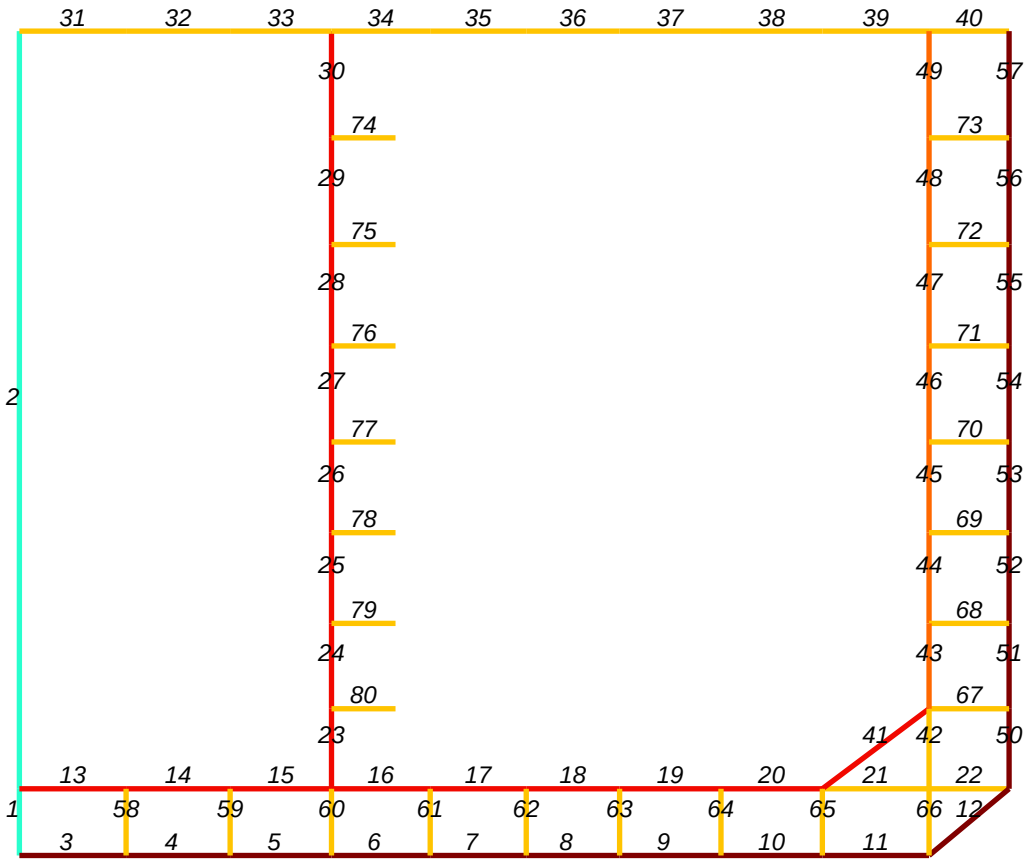
77.89

86.16

94.42999999999999

102.69999999999999

Global stresses - sigma y1



40.0

46.0

52.0

58.0

64.0

70.0

76.0

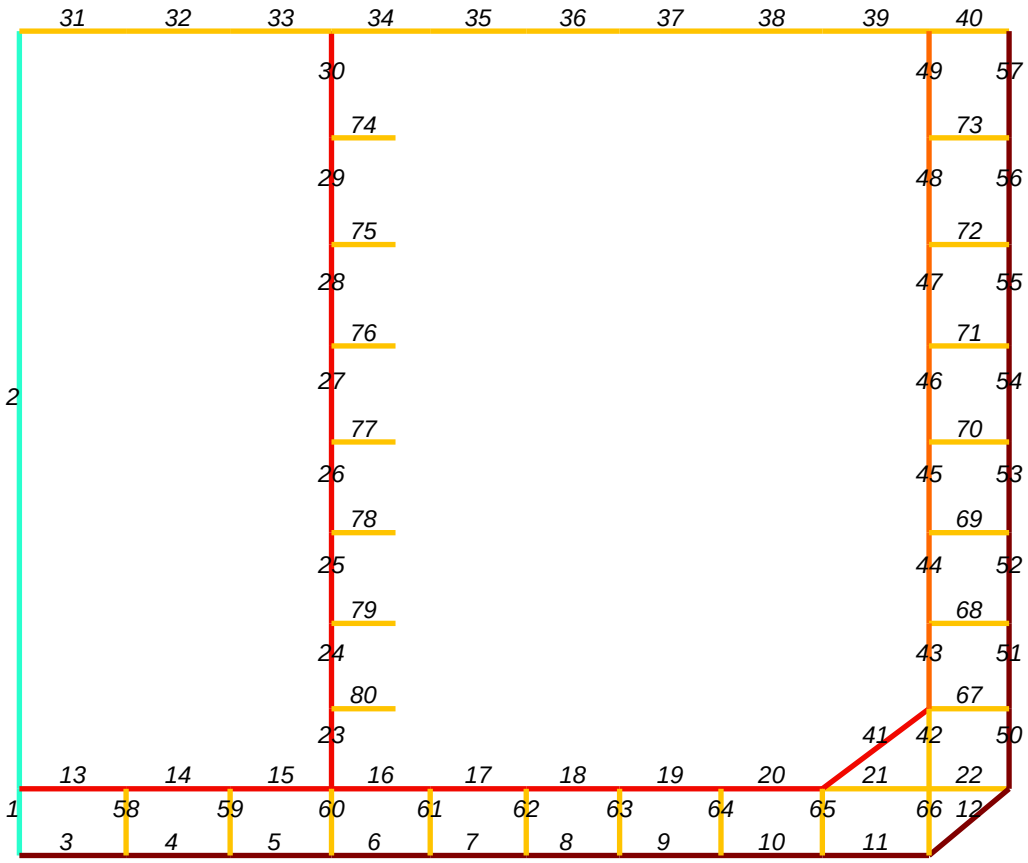
82.0

88.0

94.0

100.0

Global stresses - sigma y2



40.0

46.0

52.0

58.0

64.0

70.0

76.0

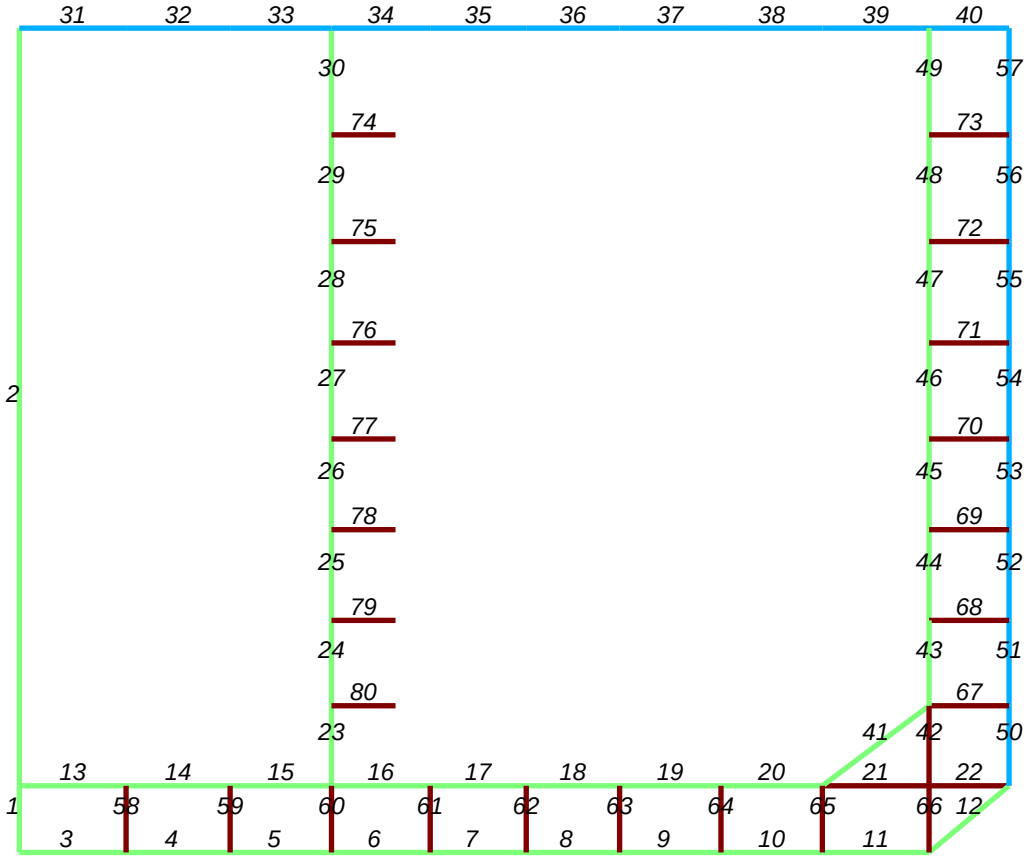
82.0

88.0

94.0

100.0

Global stresses - tau xy



3.0

3.7

4.4

5.1000000000000005

5.800000000000001

6.500000000000001

7.200000000000001

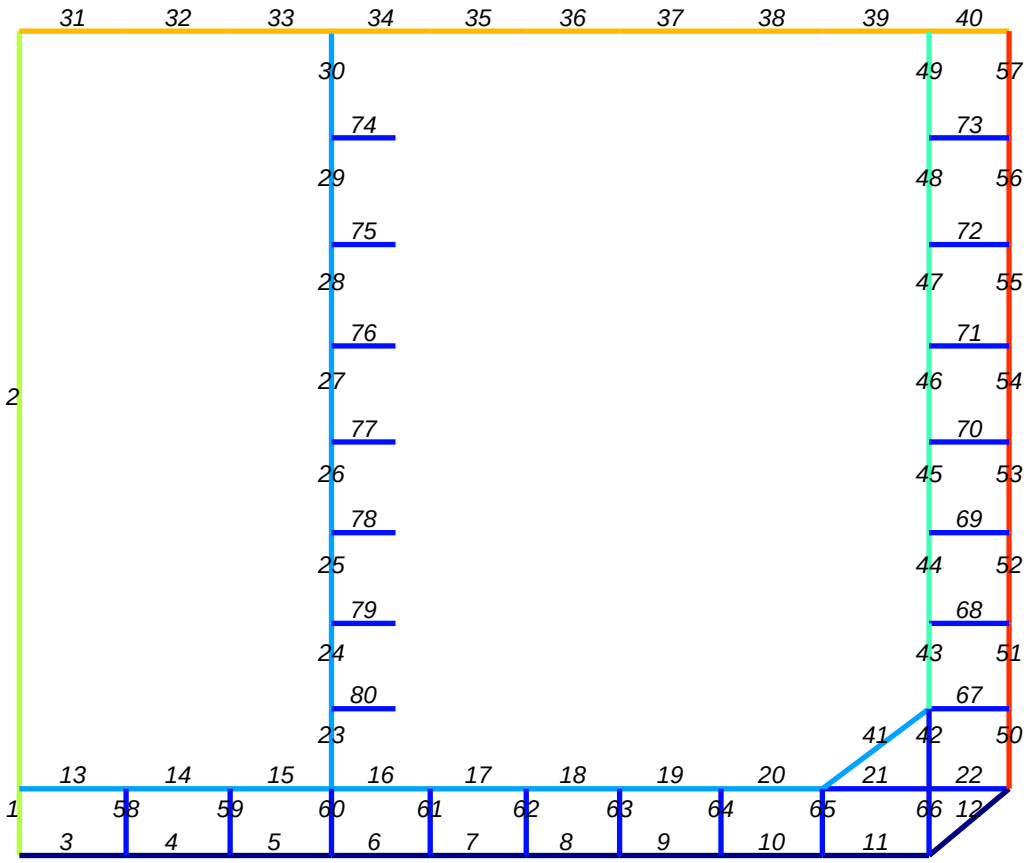
7.900000000000001

8.600000000000001

9.3

10.000000000000002

Structure types



BOTTOM

FRAME

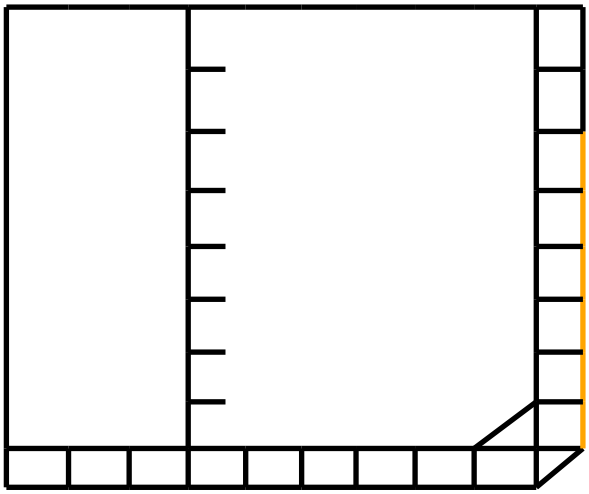
GENERAL_INTERNAL_WT

INNER_SIDE

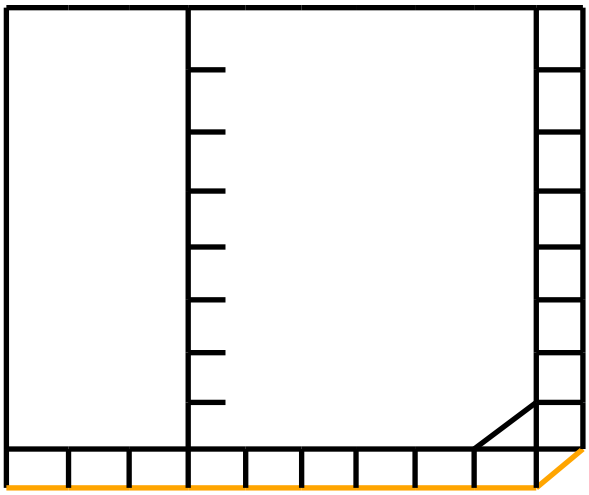
INTERNAL_LOW_STRESS_WT

MD

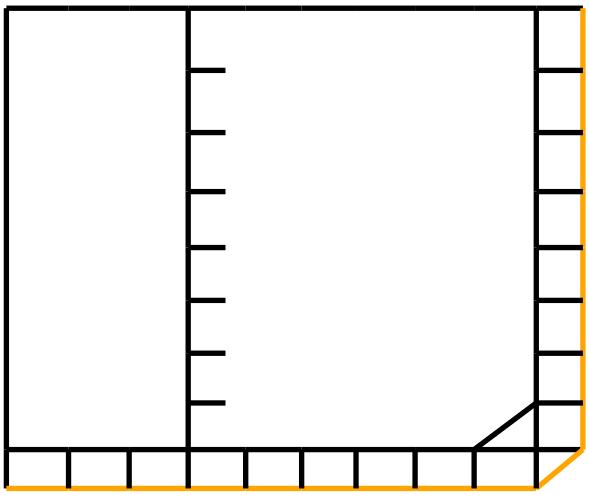
SIDE_SHELL



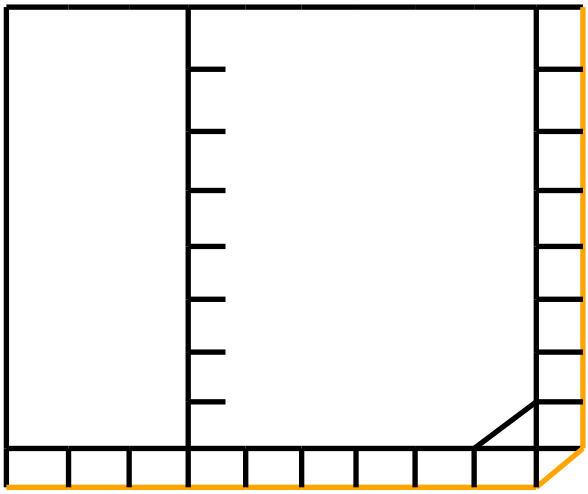
Name of load: ballast_side
Polynominal (x^3): 0.0
Polynominal (x^2): 303.0
Polynominal (x): -3750.0
Constant (C): 153000.0
Load condition: ballast
Limit state ULS
Is external? True
Static draft: None



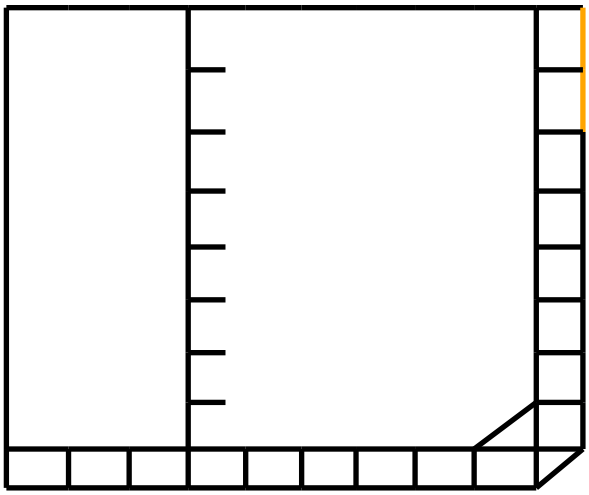
Name of load: ballast_bottom
Polynominal (x^3): 0.0
Polynominal (x^2): 31.0
Polynominal (x): -83.0
Constant (C): 45800.0
Load condition: ballast
Limit state ULS
Is external? True
Static draft: None



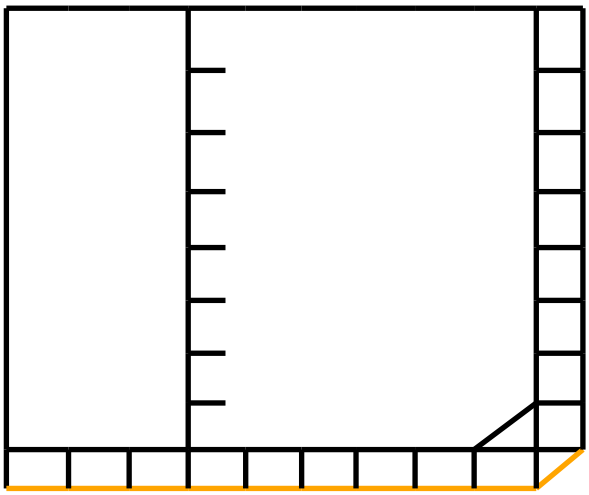
Name of load: loaded_static
Polynominal (x^3): None
Polynominal (x^2): None
Polynominal (x): None
Constant (C): None
Load condition: loaded
Limit state ULS
Is external? True
Static draft: 22.0



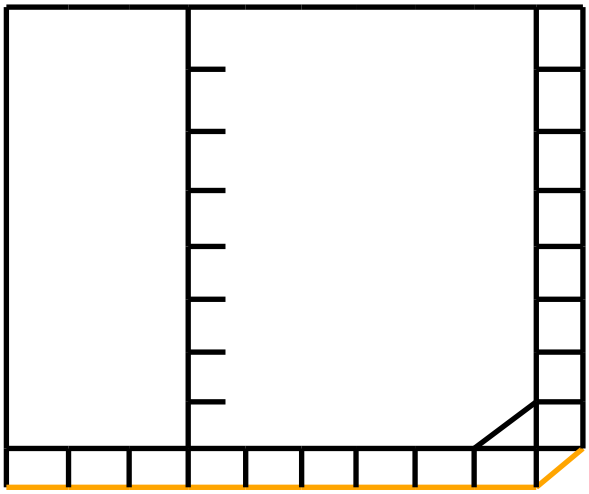
Name of load: ballast_static
Polynominal (x^3): None
Polynominal (x^2): None
Polynominal (x): None
Constant (C): None
Load condition: ballast
Limit state ULS
Is external? True
Static draft: 15.0



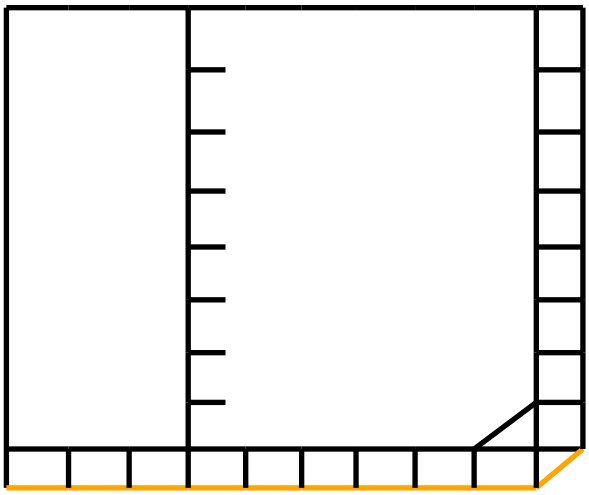
Name of load: slamming
Polynominal (x^3): 0
Polynominal (x^2): 0
Polynominal (x): 0
Constant (C): 1000000.0
Load condition: slamming
Limit state None
Is external? True
Static draft: None



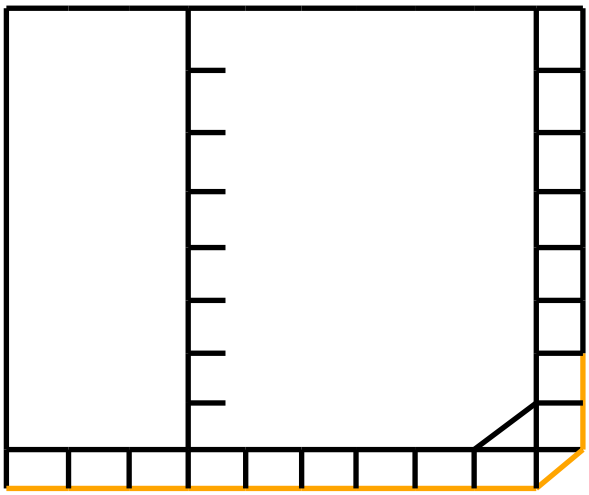
Name of load: loaded_bottom
Polynominal (x^3): 0.0
Polynominal (x^2): 164.0
Polynominal (x): -2580.0
Constant (C): 164000.0
Load condition: loaded
Limit state ULS
Is external? True
Static draft: None



Name of load: loaded_bottom_FLS
Polynominal (x^3): 0.0
Polynominal (x^2): 164.0
Polynominal (x): -2580.0
Constant (C): 164000.0
Load condition: loaded
Limit state FLS
Is external? True
Static draft: None



Name of load: ballast_bottom_FLS
Polynominal (x^3): 0.0
Polynominal (x^2): 31.0
Polynominal (x): -83.0
Constant (C): 45800.0
Load condition: ballast
Limit state FLS
Is external? True
Static draft: None



Name of load: TankTest
Polynominal (x^3): None
Polynominal (x^2): None
Polynominal (x): None
Constant (C): None
Load condition: tanktest
Limit state ULS
Is external? True
Static draft: 4.0