



moment of inertia gross without shear lag: 131997495506.10445

area gross: 202467.81087033657

Buckling Proof according to EC 1993 Part 1-5

3.2 Effective width for elastic shear lag

Shear lag reduction for flange 1

Shear Lag is not neglectable

alpha_0: 1.7

Beta: 0.31395004434548573

Shear lag reduction for flange 3

Shear Lag is not neglectable

alpha_0: 1.3

Beta: 0.44121107679637916

4.4 Plate elements without longitudinal stiffeners

Iteratively changing the widths until $M_{Rd_el_eff}$ converges to a limit of 0.02

moment of inertia gross with shear lag: 60364468595.56615

moment of inertia eff without shear lag: 114100942203.74236

moment of inertia eff with shear lag: 54037465137.15008

area red: 191555.9088395257

4.5 Stiffened plate elements with longitudinal stiffeners

Side 2

4.5.2 Plate type behaviour

$\sigma_{cr} = 1810.3890028376563$

Lambda: 0.35702454508416614

Rho_Global: 1.0

4.5.3 Column type buckling behaviour

Column number 9

$A_{sl}=13548.45$, $A_{sl_eff}=13190.5$, $I_{sl}=27291618.43$

$\sigma_{cr_c}=665.72$

$e_1=72.7$, $e_2=59.95$

All tension =False

Buckling Values 9

$\beta_{A_c}=0.9735800820732999$

$\lambda_{c_bar}=0.5862351201416552$

$\Phi_c=0.7482247121240821$

$\chi_c=0.8242908170231383$

Critical buckling values

χ_c : 0.8242908170231383

σ_{cr_c} : 665.7265499312396

4.5.4 Interaction between plate and column buckling

all_tension: False

$\rho_c = 1.0$

Side 3

4.5.2 Plate type behaviour

$\sigma_{cr} = 542.2082765863094$

λ : 0.5953816696784265

ρ_{Global} : 1.0

4.5.3 Column type buckling behaviour

Column number 10

$A_{sl}=16998.1$, $A_{sl_eff}=13902.39$, $I_{sl}=27320365.52$

$\sigma_{cr_c}=208.2$

$e_1=84.87$, $e_2=47.78$

All tension =False

Buckling Values 10

$\beta_{A_c} = 0.8178792681216397$

$\lambda_{c_bar} = 0.960806674379394$

$\Phi_c = 1.10708338313521$

$\chi_c = 0.6034751810906328$

Column number 11

$A_{sl} = 16998.1$, $A_{sl_eff} = 13902.39$, $I_{sl} = 27320365.52$

$\sigma_{cr_c} = 208.2$

$e_1 = 84.87$, $e_2 = 47.78$

All tension = False

Buckling Values 11

$\beta_{A_c} = 0.8178792681216398$

$\lambda_{c_bar} = 0.960806674379394$

$\Phi_c = 1.10708338313521$

$\chi_c = 0.6034751810906328$

Critical buckling values

χ_c : 0.6034751810906328

σ_{cr_c} : 208.20206822935626

4.5.4 Interaction between plate and column buckling

all_tension: False

$\rho_c = 1.0$

| |
|--------|
| Side 4 |
|--------|

4.5.2 Plate type behaviour

$\sigma_{cr} = 1810.3890028376563$

Lambda: 0.35702454508416614

Rho_Global: 1.0

4.5.3 Column type buckling behaviour

Column number 12

A_sl=13548.45, A_sl_eff=13190.5, I_sl=27291618.43

sigma_cr_c=665.72

e1=72.7, e2=59.95

All tension =False

Buckling Values 12

beta_A_c =0.9735800820732999

lambda_c_bar =0.5862351201416554

Phi_c =0.7482247121240823

Chi_c =0.8242908170231382

Critical buckling values

Chi_c: 0.8242908170231382

sigma_cr_c: 665.7265499312393

4.5.4 Interaction between plate and column buckling

all_tension: False

rho_c = 1.0

Resistance to shear and interaction shear force and bending moment for side 1

azero: 7000000.0

z_s: 727.1262325237653

b: 2000.0

t: 14.0

S_y_corner: 20359534.51

v_ed: 2000000

tau_q_max_abs: 11.01

tau_int_qy_flange: 308483.64

tau_int_t_flange: -142857.15

tau_int_flange: 451340.79

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 1: 0.19

lambda_w_bar_loc of the trapezoid line nr. 2: 0.19

lambda_w_bar_loc of the trapezoid line nr. 3: 0.19

lambda_w_bar_loc of the trapezoid line nr. 4: 0.19

lambda_w_bar_loc of the trapezoid line nr. 5: 0.19

lambda_w_bar_loc of the trapezoid line nr. 6: 0.19

lambda_w_bar_loc of the trapezoid line nr. 7: 0.19

lambda_w_bar_loc of the trapezoid line nr. 8: 0.19

lambda_w_bar_loc of the trapezoid line nr. 9: 0.19

lambda_w_bar_loc of the trapezoid line nr. 10: 0.19

lambda_w_bar_loc of the trapezoid line nr. 11: 0.19

lambda_w_bar_loc of the trapezoid line nr. 12: 0.19

lambda_w_bar_loc of the trapezoid line nr. 13: 0.19

lambda_w_bar_loc of the trapezoid line nr. 14: 0.19

lambda_w_bar_loc of the trapezoid line nr. 15: 0.19

lambda_w_bar_loc of the trapezoid line nr. 16: 0.19

lambda_w_bar_loc of the trapezoid line nr. 17: 0.19

stiffened plate; EBPlate

k_tau: 1571.0932633009213

V_Ed_plate: 451340.79

V_Rd: 7236123.37

eta_3: 0.062373285825989576

7.1 Interaction between shear force, bending moment and axial force

Flange -> (7.1), comment (5)

eta_3 <= 0.5; no interaction needed

utilisation: -1

Proofing Resistance to shear for each subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 1: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 76718.07

V_Rd: 425654.31

eta_3: 0.18023564303915987

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 2: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 68178.73

V_Rd: 425654.31

eta_3: 0.16017396521564153

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 3: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 59639.39

V_Rd: 425654.31

eta_3: 0.14011228739212317

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 4: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 51100.06

V_Rd: 425654.31

eta_3: 0.12005060956860485

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 5: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 42560.72

V_Rd: 425654.31

eta_3: 0.09998893174508648

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 6: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 34021.38

V_Rd: 425654.31

eta_3: 0.07992725392156813

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 7: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 25482.04

V_Rd: 425654.31

eta_3: 0.059865576098049766

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 8: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 16942.7

V_Rd: 425654.31

eta_3: 0.0398038982745314

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 9: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 8403.36

V_Rd: 425654.31

eta_3: 0.019742220451013055

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 10: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 16942.7

V_Rd: 425654.31

eta_3: 0.03980389827453138

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 11: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 25482.04

V_Rd: 425654.31

eta_3: 0.05986557609804973

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 12: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 34021.38

V_Rd: 425654.31

eta_3: 0.07992725392156808

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 13: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 42560.72

V_Rd: 425654.31

eta_3: 0.09998893174508645

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 14: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 51100.06

V_Rd: 425654.31

eta_3: 0.12005060956860485

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 15: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 59639.39

V_Rd: 425654.31

eta_3: 0.14011228739212322

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 16: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 68178.73

V_Rd: 425654.31

eta_3: 0.16017396521564153

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 17: 0.19

unstiffened plate; (A.5)

k_tau: 5.353840830449827

V_Ed_plate: 76718.07

V_Rd: 425654.31

eta_3: 0.18023564303915993

eta_3_panel < 1: pass subpanel

Resistance to shear and interaction shear force and bending moment for side 2

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 18: 1.33

lambda_w_bar_loc of the trapezoid line nr. 19: 0.34

lambda_w_bar_loc of the trapezoid line nr. 20: 0.65

stiffened plate; EBPlate

k_tau: 21.01369360902256

(5.3) lambda_w_bar_1= 1.2

(5.6) lambda_w_bar_2= 1.2

(5.7) lambda_w_bar_3= 1.33 max single plate slenderness

chosen lambda_w_bar= 1.33

V_Ed_plate: 957149.52

V_Rd: 1658141.64

eta_3: 0.5772423151566441

7.1 Interaction between shear force, bending moment and axial force

Web -> (7.1) without iterating

eta_3 > 0.5; interaction needed

m_f_rd: 6443684880.08

m_pl_rd: 13283354375.39

eta_1: 0.6

utilisation: 0.6145459880467096

Resistance to shear and interaction shear force and bending moment for side 3

azero: 7000000.0

z_s: 727.1262325237653

b: 1500.0

t: 10.0

S_y_corner: 19093106.51

v_ed: 2000000

tau_q_max_abs: 14.46

tau_int_qy_flange: 216971.23

tau_int_t_flange: -107142.86

tau_int_flange: 324114.09

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 21: 0.93

lambda_w_bar_loc of the trapezoid line nr. 22: 0.34

lambda_w_bar_loc of the trapezoid line nr. 23: 0.85

lambda_w_bar_loc of the trapezoid line nr. 24: 0.34

lambda_w_bar_loc of the trapezoid line nr. 25: 0.93

stiffened plate; EBPlate

k_tau: 94.91032993795285

V_Ed_plate: 324114.09

V_Rd: 3876494.66

eta_3: 0.08361009657840976

7.1 Interaction between shear force, bending moment and axial force

Flange -> (7.1), comment (5)

eta_3 <= 0.5; no interaction needed

utilisation: -1

Proofing Resistance to shear for each subpanel

azero: 7000000.0

5. Resistance to shear

$\lambda_{w_bar_loc}$ of the trapezoid line nr. 21: 0.93

unstiffened plate; (A.5)

k_{τ} : 5.51015625

(5.3) $\lambda_{w_bar_1}$ = 0.93

(5.6) $\lambda_{w_bar_2}$ = 0.93

(5.7) $\lambda_{w_bar_3}$ = 0.93 max single plate slenderness

chosen λ_{w_bar} = 0.93

V_{Ed_plate} : 202498.84

V_{Rd} : 941563.44

η_3 : 0.21506659845051138

$\eta_3_panel < 1$: pass subpanel

azero: 7000000.0

5. Resistance to shear

$\lambda_{w_bar_loc}$ of the trapezoid line nr. 22: 0.34

unstiffened plate; (A.5)

k_{τ} : 5.3625

V_{Ed_plate} : 41090.25

V_{Rd} : 387649.46

η_3 : 0.10599849175720635

$\eta_3_panel < 1$: pass subpanel

azero: 7000000.0

5. Resistance to shear

$\lambda_{w_bar_loc}$ of the trapezoid line nr. 23: 0.85

unstiffened plate; (A.5)

k_tau: 5.480625

(5.3) lambda_w_bar_1= 0.85

(5.6) lambda_w_bar_2= 0.85

(5.7) lambda_w_bar_3= 0.85 max single plate slenderness

chosen lambda_w_bar= 0.85

V_Ed_plate: 53907.11

V_Rd: 939036.93

eta_3: 0.05740681421411562

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 24: 0.34

unstiffened plate; (A.5)

k_tau: 5.3625

V_Ed_plate: 41090.25

V_Rd: 387649.46

eta_3: 0.10599849175720635

eta_3_panel < 1: pass subpanel

azero: 7000000.0

5. Resistance to shear

lambda_w_bar_loc of the trapezoid line nr. 25: 0.93

unstiffened plate; (A.5)

k_tau: 5.51015625

(5.3) $\lambda_{w_bar_1} = 0.93$

(5.6) $\lambda_{w_bar_2} = 0.93$

(5.7) $\lambda_{w_bar_3} = 0.93$ max single plate slenderness

chosen $\lambda_{w_bar} = 0.93$

V_{Ed_plate} : 202498.84

V_{Rd} : 941563.44

η_3 : 0.21506659845051138

$\eta_3_panel < 1$: pass subpanel

Resistance to shear and interaction shear force and bending moment for side 4

a_{zero} : 7000000.0

5. Resistance to shear

$\lambda_{w_bar_loc}$ of the trapezoid line nr. 26: 0.65

$\lambda_{w_bar_loc}$ of the trapezoid line nr. 27: 0.34

$\lambda_{w_bar_loc}$ of the trapezoid line nr. 28: 1.33

stiffened plate; EBPlate

k_{τ} : 21.01353383458647

(5.3) $\lambda_{w_bar_1} = 1.2$

(5.6) $\lambda_{w_bar_2} = 1.2$

(5.7) $\lambda_{w_bar_3} = 1.33$ max single plate slenderness

chosen $\lambda_{w_bar} = 1.33$

V_{Ed_plate} : 1104403.29

V_{Rd} : 1658141.64

η_3 : 0.6660488251807434

7.1 Interaction between shear force, bending moment and axial force

Web -> (7.1) without iterating

$\eta_3 > 0.5$; interaction needed

$m_{f_{rd}}$: 6443684880.08

$m_{pl_{rd}}$: 13283354375.39

η_1 : 0.6

utilisation: 0.6590458276836744

cross-section with $b_{sup}=4000$, $b_{inf}=3000$, $h=2000$

trapezoid plate on side 1 with the number 1

$a=(2000, 0)$ $p_1=(1882, 0)$ $p_2=(1882, 0)$ $b=(1764, 0)$ $t=14.0$ $length_{tot}=235$

$\sigma_{a_{red}}=-125.65$ $\sigma_{b_{red}}=-125.65$

trapezoid plate on side 1 with the number 2

$a=(1764, 0)$ $p_1=(1647, 0)$ $p_2=(1647, 0)$ $b=(1529, 0)$ $t=14.0$ $length_{tot}=235$

$\sigma_{a_{red}}=-125.65$ $\sigma_{b_{red}}=-125.65$

trapezoid plate on side 1 with the number 3

$a=(1529, 0)$ $p_1=(1411, 0)$ $p_2=(1411, 0)$ $b=(1294, 0)$ $t=14.0$ $length_{tot}=235$

$\sigma_{a_{red}}=-125.65$ $\sigma_{b_{red}}=-125.65$

trapezoid plate on side 1 with the number 4

$a=(1294, 0)$ $p_1=(1176, 0)$ $p_2=(1176, 0)$ $b=(1058, 0)$ $t=14.0$ $length_{tot}=235$

$\sigma_{a_{red}}=-125.65$ $\sigma_{b_{red}}=-125.65$

trapezoid plate on side 1 with the number 5

$a=(1058, 0)$ $p_1=(941, 0)$ $p_2=(941, 0)$ $b=(823, 0)$ $t=14.0$ $length_{tot}=235$

$\sigma_{a_{red}}=-125.65$ $\sigma_{b_{red}}=-125.65$

trapezoid plate on side 1 with the number 6

$a=(823, 0)$ $p_1=(705, 0)$ $p_2=(705, 0)$ $b=(588, 0)$ $t=14.0$ $\text{length_tot}=235$

$\sigma_{a_red}=-125.65$ $\sigma_{b_red}=-125.65$

trapezoid plate on side 1 with the number 7

$a=(588, 0)$ $p_1=(470, 0)$ $p_2=(470, 0)$ $b=(352, 0)$ $t=14.0$ $\text{length_tot}=235$

$\sigma_{a_red}=-125.65$ $\sigma_{b_red}=-125.65$

trapezoid plate on side 1 with the number 8

$a=(352, 0)$ $p_1=(235, 0)$ $p_2=(235, 0)$ $b=(117, 0)$ $t=14.0$ $\text{length_tot}=235$

$\sigma_{a_red}=-125.65$ $\sigma_{b_red}=-125.65$

trapezoid plate on side 1 with the number 9

$a=(117, 0)$ $p_1=(0, 0)$ $p_2=(0, 0)$ $b=(-117, 0)$ $t=14.0$ $\text{length_tot}=235$

$\sigma_{a_red}=-125.65$ $\sigma_{b_red}=-125.65$

trapezoid plate on side 1 with the number 10

$a=(-117, 0)$ $p_1=(-235, 0)$ $p_2=(-235, 0)$ $b=(-352, 0)$ $t=14.0$ $\text{length_tot}=235$

$\sigma_{a_red}=-125.65$ $\sigma_{b_red}=-125.65$

trapezoid plate on side 1 with the number 11

$a=(-352, 0)$ $p_1=(-470, 0)$ $p_2=(-470, 0)$ $b=(-588, 0)$ $t=14.0$ $\text{length_tot}=235$

$\sigma_{a_red}=-125.65$ $\sigma_{b_red}=-125.65$

trapezoid plate on side 1 with the number 12

$a=(-588, 0)$ $p_1=(-705, 0)$ $p_2=(-705, 0)$ $b=(-823, 0)$ $t=14.0$ $\text{length_tot}=235$

$\sigma_{a_red}=-125.65$ $\sigma_{b_red}=-125.65$

trapezoid plate on side 1 with the number 13

$a=(-823, 0)$ $p_1=(-941, 0)$ $p_2=(-941, 0)$ $b=(-1058, 0)$ $t=14.0$ $\text{length_tot}=235$

$\sigma_{a_red}=-125.65$ $\sigma_{b_red}=-125.65$

trapezoid plate on side 1 with the number 14

$a=(-1058, 0)$ $p1=(-1176, 0)$ $p2=(-1176, 0)$ $b=(-1294, 0)$ $t=14.0$ $length_tot=235$

$\sigma_a_red=-125.65$ $\sigma_b_red=-125.65$

trapezoid plate on side 1 with the number 15

$a=(-1294, 0)$ $p1=(-1411, 0)$ $p2=(-1411, 0)$ $b=(-1529, 0)$ $t=14.0$ $length_tot=235$

$\sigma_a_red=-125.65$ $\sigma_b_red=-125.65$

trapezoid plate on side 1 with the number 16

$a=(-1529, 0)$ $p1=(-1647, 0)$ $p2=(-1647, 0)$ $b=(-1764, 0)$ $t=14.0$ $length_tot=235$

$\sigma_a_red=-125.65$ $\sigma_b_red=-125.65$

trapezoid plate on side 1 with the number 17

$a=(-1764, 0)$ $p1=(-1882, 0)$ $p2=(-1882, 0)$ $b=(-2000, 0)$ $t=14.0$ $length_tot=235$

$\sigma_a_red=-125.65$ $\sigma_b_red=-125.65$

trapezoid plate on side 2 with the number 18

$a=(-2000, 0)$ $p1=(-1741, 1032)$ $p2=(-1741, 1032)$ $b=(-1711, 1154)$ $t=10.0$ $length_tot=1190$

$\sigma_a_red=-125.65$ $\sigma_b_red=45.26$

trapezoid plate on side 2 with the number 19

$a=(-1711, 1154)$ $p1=(-1671, 1315)$ $p2=(-1671, 1315)$ $b=(-1638, 1445)$ $t=10.0$ $length_tot=300$

$\sigma_a_red=45.26$ $\sigma_b_red=88.34$

trapezoid plate on side 2 with the number 20

$a=(-1638, 1445)$ $p1=(-1570, 1717)$ $p2=(-1554, 1780)$ $b=(-1500, 2000)$ $t=10.0$ $length_tot=571$

$\sigma_a_red=88.34$ $\sigma_b_red=170.43$

trapezoid plate on side 3 with the number 21

$a=(-1500, 2000)$ $p1=(-1258, 2000)$ $p2=(-916, 2000)$ $b=(-675, 2000)$ $t=10.0$ $length_tot=825$

$\sigma_a_red=170.43$ $\sigma_b_red=170.43$

trapezoid plate on side 3 with the number 22

a=(-675, 2000) p1=(-525, 2000) p2=(-525, 2000) b=(-375, 2000)t=10.0length_tot=300

sigma_a_red=170.43 sigma_b_red=170.43

trapezoid plate on side 3 with the number 23

a=(-375, 2000) p1=(-138, 2000) p2=(138, 2000) b=(375, 2000)t=10.0length_tot=750

sigma_a_red=170.43 sigma_b_red=170.43

trapezoid plate on side 3 with the number 24

a=(375, 2000) p1=(525, 2000) p2=(525, 2000) b=(675, 2000)t=10.0length_tot=300

sigma_a_red=170.43 sigma_b_red=170.43

trapezoid plate on side 3 with the number 25

a=(675, 2000) p1=(916, 2000) p2=(1258, 2000) b=(1500, 2000)t=10.0length_tot=825

sigma_a_red=170.43 sigma_b_red=170.43

trapezoid plate on side 4 with the number 26

a=(1500, 2000) p1=(1554, 1780) p2=(1570, 1717) b=(1638, 1445)t=10.0length_tot=571

sigma_a_red=170.43 sigma_b_red=88.34

trapezoid plate on side 4 with the number 27

a=(1638, 1445) p1=(1671, 1315) p2=(1671, 1315) b=(1711, 1154)t=10.0length_tot=300

sigma_a_red=88.34 sigma_b_red=45.26

trapezoid plate on side 4 with the number 28

a=(1711, 1154) p1=(1741, 1032) p2=(1741, 1032) b=(2000, 0)t=10.0length_tot=1190

sigma_a_red=45.26 sigma_b_red=-125.65

stiffener plate on side 1 of stiffener nr 1 on stiffener plate position 2

a=(1529, 0) p1=(1564, 130) p2=(1564, 130) b=(1599, 260)t=10.0length_tot=269

sigma_a_red=-125.65 sigma_b_red=-87.16

stiffener plate on side 1 of stiffener nr 1 on stiffener plate position 3

a=(1599, 260) p1=(1647, 260) p2=(1647, 260) b=(1695, 260)t=10.0length_tot=95

sigma_a_red=-87.16 sigma_b_red=-87.16

stiffener plate on side 1 of stiffener nr 1 on stiffener plate position 4

a=(1695, 260) p1=(1729, 130) p2=(1729, 130) b=(1764, 0)t=10.0length_tot=269

sigma_a_red=-87.16 sigma_b_red=-125.65

stiffener plate on side 1 of stiffener nr 2 on stiffener plate position 2

a=(1058, 0) p1=(1093, 130) p2=(1093, 130) b=(1128, 260)t=10.0length_tot=269

sigma_a_red=-125.65 sigma_b_red=-87.16

stiffener plate on side 1 of stiffener nr 2 on stiffener plate position 3

a=(1128, 260) p1=(1176, 260) p2=(1176, 260) b=(1224, 260)t=10.0length_tot=95

sigma_a_red=-87.16 sigma_b_red=-87.16

stiffener plate on side 1 of stiffener nr 2 on stiffener plate position 4

a=(1224, 260) p1=(1259, 130) p2=(1259, 130) b=(1294, 0)t=10.0length_tot=269

sigma_a_red=-87.16 sigma_b_red=-125.65

stiffener plate on side 1 of stiffener nr 3 on stiffener plate position 2

a=(588, 0) p1=(623, 130) p2=(623, 130) b=(657, 260)t=10.0length_tot=269

sigma_a_red=-125.65 sigma_b_red=-87.16

stiffener plate on side 1 of stiffener nr 3 on stiffener plate position 3

a=(657, 260) p1=(705, 260) p2=(705, 260) b=(753, 260)t=10.0length_tot=95

sigma_a_red=-87.16 sigma_b_red=-87.16

stiffener plate on side 1 of stiffener nr 3 on stiffener plate position 4

a=(753, 260) p1=(788, 130) p2=(788, 130) b=(823, 0)t=10.0length_tot=269

sigma_a_red=-87.16 sigma_b_red=-125.65

stiffener plate on side 1 of stiffener nr 4 on stiffener plate position 2

a=(117, 0) p1=(152, 130) p2=(152, 130) b=(187, 260)t=10.0length_tot=269

sigma_a_red=-125.65 sigma_b_red=-87.16

stiffener plate on side 1 of stiffener nr 4 on stiffener plate position 3

a=(187, 260) p1=(235, 260) p2=(235, 260) b=(283, 260)t=10.0length_tot=95

sigma_a_red=-87.16 sigma_b_red=-87.16

stiffener plate on side 1 of stiffener nr 4 on stiffener plate position 4

a=(283, 260) p1=(318, 130) p2=(318, 130) b=(352, 0)t=10.0length_tot=269

sigma_a_red=-87.16 sigma_b_red=-125.65

stiffener plate on side 1 of stiffener nr 5 on stiffener plate position 2

a=(-352, 0) p1=(-318, 130) p2=(-318, 130) b=(-283, 260)t=10.0length_tot=269

sigma_a_red=-125.65 sigma_b_red=-87.16

stiffener plate on side 1 of stiffener nr 5 on stiffener plate position 3

a=(-283, 260) p1=(-235, 260) p2=(-235, 260) b=(-187, 260)t=10.0length_tot=95

sigma_a_red=-87.16 sigma_b_red=-87.16

stiffener plate on side 1 of stiffener nr 5 on stiffener plate position 4

a=(-187, 260) p1=(-152, 130) p2=(-152, 130) b=(-117, 0)t=10.0length_tot=269

sigma_a_red=-87.16 sigma_b_red=-125.65

stiffener plate on side 1 of stiffener nr 6 on stiffener plate position 2

a=(-823, 0) p1=(-788, 130) p2=(-788, 130) b=(-753, 260)t=10.0length_tot=269

sigma_a_red=-125.65 sigma_b_red=-87.16

stiffener plate on side 1 of stiffener nr 6 on stiffener plate position 3

a=(-753, 260) p1=(-705, 260) p2=(-705, 260) b=(-657, 260)t=10.0length_tot=95

sigma_a_red=-87.16 sigma_b_red=-87.16

stiffener plate on side 1 of stiffener nr 6 on stiffener plate position 4

$a=(-657, 260)$ $p1=(-623, 130)$ $p2=(-623, 130)$ $b=(-588, 0)$ $t=10.0$ $length_tot=269$

$\sigma_{a_red}=-87.16$ $\sigma_{b_red}=-125.65$

stiffener plate on side 1 of stiffener nr 7 on stiffener plate position 2

$a=(-1294, 0)$ $p1=(-1259, 130)$ $p2=(-1259, 130)$ $b=(-1224, 260)$ $t=10.0$ $length_tot=269$

$\sigma_{a_red}=-125.65$ $\sigma_{b_red}=-87.16$

stiffener plate on side 1 of stiffener nr 7 on stiffener plate position 3

$a=(-1224, 260)$ $p1=(-1176, 260)$ $p2=(-1176, 260)$ $b=(-1128, 260)$ $t=10.0$ $length_tot=95$

$\sigma_{a_red}=-87.16$ $\sigma_{b_red}=-87.16$

stiffener plate on side 1 of stiffener nr 7 on stiffener plate position 4

$a=(-1128, 260)$ $p1=(-1093, 130)$ $p2=(-1093, 130)$ $b=(-1058, 0)$ $t=10.0$ $length_tot=269$

$\sigma_{a_red}=-87.16$ $\sigma_{b_red}=-125.65$

stiffener plate on side 1 of stiffener nr 8 on stiffener plate position 2

$a=(-1764, 0)$ $p1=(-1729, 130)$ $p2=(-1729, 130)$ $b=(-1695, 260)$ $t=10.0$ $length_tot=269$

$\sigma_{a_red}=-125.65$ $\sigma_{b_red}=-87.16$

stiffener plate on side 1 of stiffener nr 8 on stiffener plate position 3

$a=(-1695, 260)$ $p1=(-1647, 260)$ $p2=(-1647, 260)$ $b=(-1599, 260)$ $t=10.0$ $length_tot=95$

$\sigma_{a_red}=-87.16$ $\sigma_{b_red}=-87.16$

stiffener plate on side 1 of stiffener nr 8 on stiffener plate position 4

$a=(-1599, 260)$ $p1=(-1564, 130)$ $p2=(-1564, 130)$ $b=(-1529, 0)$ $t=10.0$ $length_tot=269$

$\sigma_{a_red}=-87.16$ $\sigma_{b_red}=-125.65$

stiffener plate on side 2 of stiffener nr 9 on stiffener plate position 2

$a=(-1638, 1445)$ $p1=(-1551, 1398)$ $p2=(-1551, 1398)$ $b=(-1456, 1348)$ $t=10.0$ $length_tot=206$

$\sigma_{a_red}=88.34$ $\sigma_{b_red}=73.98$

stiffener plate on side 2 of stiffener nr 9 on stiffener plate position 3

a=(-1456, 1348) p1=(-1478, 1260) p2=(-1478, 1260) b=(-1505, 1154)t=10.0length_tot=200

sigma_a_red=73.98 sigma_b_red=45.26

stiffener plate on side 2 of stiffener nr 9 on stiffener plate position 4

a=(-1505, 1154) p1=(-1608, 1154) p2=(-1608, 1154) b=(-1711, 1154)t=10.0length_tot=206

sigma_a_red=45.26 sigma_b_red=45.26

stiffener plate on side 3 of stiffener nr 10 on stiffener plate position 2

a=(-375, 2000) p1=(-398, 1904) p2=(-398, 1904) b=(-425, 1800)t=10.0length_tot=206

sigma_a_red=170.43 sigma_b_red=140.82

stiffener plate on side 3 of stiffener nr 10 on stiffener plate position 3

a=(-425, 1800) p1=(-525, 1800) p2=(-525, 1800) b=(-625, 1800)t=10.0length_tot=199

sigma_a_red=140.82 sigma_b_red=140.82

stiffener plate on side 3 of stiffener nr 10 on stiffener plate position 4

a=(-625, 1800) p1=(-651, 1904) p2=(-651, 1904) b=(-675, 2000)t=10.0length_tot=206

sigma_a_red=140.82 sigma_b_red=170.43

stiffener plate on side 3 of stiffener nr 11 on stiffener plate position 2

a=(675, 2000) p1=(651, 1904) p2=(651, 1904) b=(625, 1800)t=10.0length_tot=206

sigma_a_red=170.43 sigma_b_red=140.82

stiffener plate on side 3 of stiffener nr 11 on stiffener plate position 3

a=(625, 1800) p1=(525, 1800) p2=(525, 1800) b=(425, 1800)t=10.0length_tot=200

sigma_a_red=140.82 sigma_b_red=140.82

stiffener plate on side 3 of stiffener nr 11 on stiffener plate position 4

a=(425, 1800) p1=(398, 1904) p2=(398, 1904) b=(375, 2000)t=10.0length_tot=206

sigma_a_red=140.82 sigma_b_red=170.43

stiffener plate on side 4 of stiffener nr 12 on stiffener plate position 2

a=(1711, 1154) p1=(1608, 1154) p2=(1608, 1154) b=(1505, 1154)t=10.0length_tot=206

sigma_a_red=45.26 sigma_b_red=45.26

stiffener plate on side 4 of stiffener nr 12 on stiffener plate position 3

a=(1505, 1154) p1=(1478, 1260) p2=(1478, 1260) b=(1456, 1348)t=10.0length_tot=200

sigma_a_red=45.26 sigma_b_red=73.98

stiffener plate on side 4 of stiffener nr 12 on stiffener plate position 4

a=(1456, 1348) p1=(1551, 1398) p2=(1551, 1398) b=(1638, 1445)t=10.0length_tot=206

sigma_a_red=73.98 sigma_b_red=88.34

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|---|
| moment of inertia including all reductions: 54037465137.15008 |
| center z gross 727.1262325237653 |
| center z reduced 656.3102217340487 |

