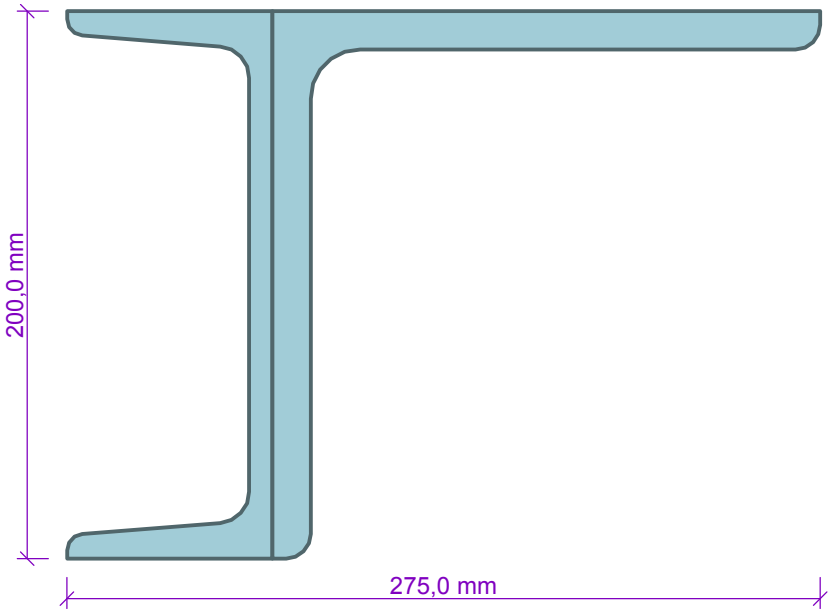
Project

Section name : Ocelový svařenec: U 200 + L 200x200x14
Job name : Demo02
Date : 20. 4. 2011

Input data



Section objects

no.	Type	Description	Material	Area [mm2]	Elastic modulus [MPa]
1	Profile	U(UPN) 200	EN 10025 : Fe 360	3220,0	210000,0
2	Profile	L 200 x 200 x 14	EN 10025 : Fe 360	5440,0	210000,0

Section object parameters

Object no.1: U(UPN) 200
Centre of gravity position [mm]: [0,0 , 0,0]; rotation: 180,0°

Object no.2: L 200 x 200 x 14
Centre of gravity position [mm]: [74,4 , 45,7]; rotation: -90,0°

Results

Table of values	
Real sectional characteristics calculated.	
Position of centre of gravity with respect to global coordinate system	
horizontal position of centre of gravity with respect to origin of coordinate system	x = 46,7 mm
vertical position of centre of gravity with respect to origin of coordinate system	y = 28,7 mm
Cross-sectional characteristics	
cross-sectional area	A = 8657,3 mm2
cross-section perimeter	P = 1444,9 mm
distance of centroid from left edge of min. cross-section envelope	y_{cg} = 101,7 mm
distance of centroid from bottom edge of min. cross-section envelope	z_{cg} = 128,7 mm

Table of values	
moment of inertia w.r.t. horizontal centroidal axis	I_y = 44,07E+06 mm^4
moment of inertia w.r.t. vertical centroidal axis	I_z = 33,46E+06 mm^4
mixed moment of inertia w.r.t. centroidal axes	D_{yz} = 19,11E+06 mm^4
inclination of principal centroidal axes	ϕ = -37,2 °
radius of gyration normal to horizontal centroidal axis	i_y = 71,3 mm
radius of gyration normal to vertical centroidal axis	i_z = 62,2 mm
moment of inertia w.r.t. principal Y-axis	I_{yh} = 58,60E+06 mm^4
moment of inertia w.r.t. principal Z-axis	I_{zh} = 18,93E+06 mm^4
radius of gyration normal to principal Y-axis	i_{yh} = 82,3 mm
radius of gyration normal to principal Z-axis	i_{zh} = 46,8 mm
rigidity moment in simple torsion	I_k = 1,811E+06 mm^4
polar moment of inertia	I_p = 77,53E+06 mm^4
polar moment of inertia	i_p = 94,6 mm
shear area due to shear force in direction of Y-axis	A_y = 9,7 mm^2
shear area due to shear force in direction of Z-axis	A_z = 479,4 mm^2
cross-sectional modulus w.r.t. centroidal y-axis at upper edge of cross-section	W_{y1} = 617,6E+03 mm^3
cross-sectional modulus w.r.t. centroidal y-axis at bottom edge of cross-section	W_{y2} = -342,5E+03 mm^3
cross-sectional modulus w.r.t. centroidal z-axis at right edge of cross-section	W_{z1} = -193,1E+03 mm^3
cross-sectional modulus w.r.t. centroidal z-axis at left edge of cross-section	W_{z2} = 329,1E+03 mm^3