



Straight beams with constant cross-section

- i Calculation without errors.
- ii Project information

? Input section

1.0 Beam type, dimensions and loading

1.1 Calculation units
SI Units (N, mm, kW...)

1.2 Left beam end
C...Fixing

1.3 Number of supports between
0

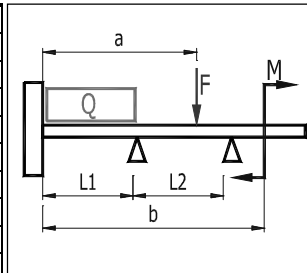
1.4 Right beam end
C...Fixing

1.5 Beam field no: **L1**

1.6 Length of beam field	L	1675.0	110.000	20.0	61.0	0.0	0.0	[mm]
1.7 Continuous loading	Q	0.000	0.000	0.000	0.000	0.000	0.000	[N/mm]
1.8 Field beginning co-ordinates		1675.0	1785.0	1805.0	1866.0	1866.0		[mm]

1.9 Beam loading

	a [mm]	F [N]	b [mm]	M [Nm]
Force F1 / Moment M1	837.0	8000.0	0.0	0.0
Force F2 / Moment M2	0.0	0.0	0.0	0.0
Force F3 / Moment M3	0.0	0.0	0.0	0.0
Force F4 / Moment M4	0.0	0.0	0.0	0.0
Force F5 / Moment M5	0.0	0.0	0.0	0.0
Force F6 / Moment M6	0.0	0.0	0.0	0.0
Force F7 / Moment M7	0.0	0.0	0.0	0.0
Force F8 / Moment M8	0.0	0.0	0.0	0.0
Force F9 / Moment M9	0.0	0.0	0.0	0.0
Force F10 / Moment M10	0.0	0.0	0.0	0.0
Force F11 / Moment M11	0.0	0.0	0.0	0.0
Force F12 / Moment M12	0.0	0.0	0.0	0.0



- 1.10 Dead weight load No
- 1.11 Other input field for force

2.0 Static values of the profile and material values of the beam

2.1 Beam profile

2.2 Profile type: 12...I - Section (Calculated)

2.3 Profile dimensions: Empty table

2.4 User properties of the profile: No

2.5 Number of beams abreast: 1

2.6 Area	A	1939.6	[mm ²]
2.7 Quadratic moment to the axi	Ix	8346264.965	[mm ⁴]
2.8 Cross-section bending modulu	Sx	104328.3121	[mm ³]

B	82.00	[mm]
H	160.00	[mm]
s	7.40	[mm]
t	5.00	[mm]

2.9 Beam material

2.10 List of materials: Structural steel EC 3, EN 10025; Fe 360 (210000)

2.11 Density: γ 7850.0 [kg/m³]

2.12 Modulus of elasticity in tension: E 210000 [MPa]

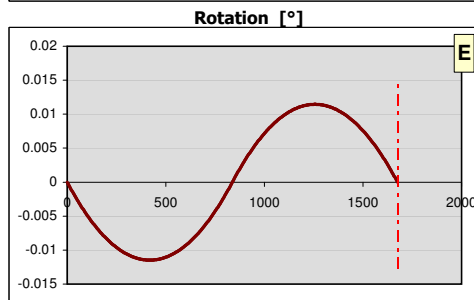
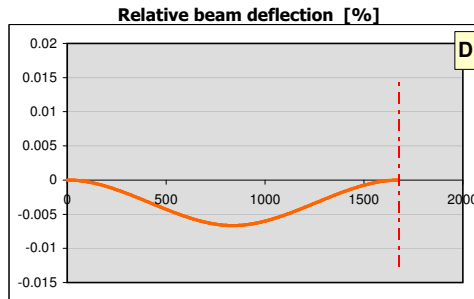
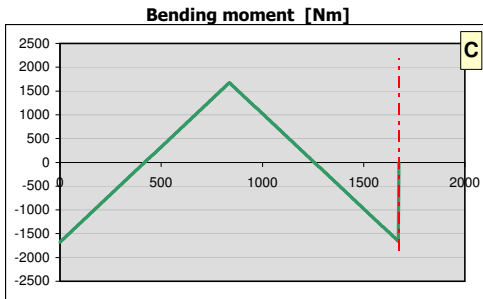
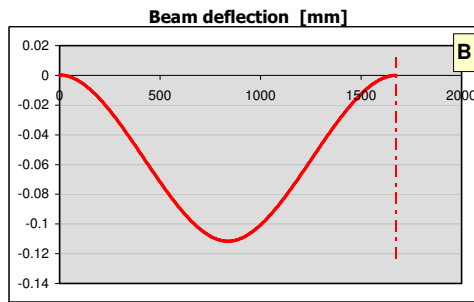
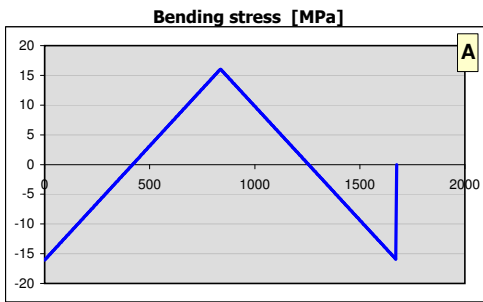
2.13 Permissible bending stress: σ_b 141 [MPa]

? Results section

3.0 Calculation results

3.1 Support number from left	R1	R2			
3.2 Reaction in supports	4003.58	3996.42			[N]

3.3 Bending moment Min. / Max.	Mo	-1676.00	1674.34	[Nm]
3.4 Beam deflection Min. / Max.	y	-0.112	0.000	[mm]
3.5 Bending stress Min. / Max.	σ_b	-16.1	16	[MPa]
3.6 Weight of the beam	m	25.5	[kg]	
3.7 Max. length of the free end (buckling).	Lmax	1210.7	[mm]	
3.8 Relative beam deflection Max.	y'	0.007	[%]	



4.0 Detailed results

4.1 Requested parameters

4.2 X - coordinate	827.45	[mm]
4.3 Bending stress	15.69	[MPa]
4.4 Beam deflection	-0.11	[mm]
4.5 Relative beam deflection	-0.007	[%]
4.6 Bending moment	1636.76	[Nm]
4.7 Rotation	-0.001	[°]

