

CROSS SECTION: KINDMANN 80

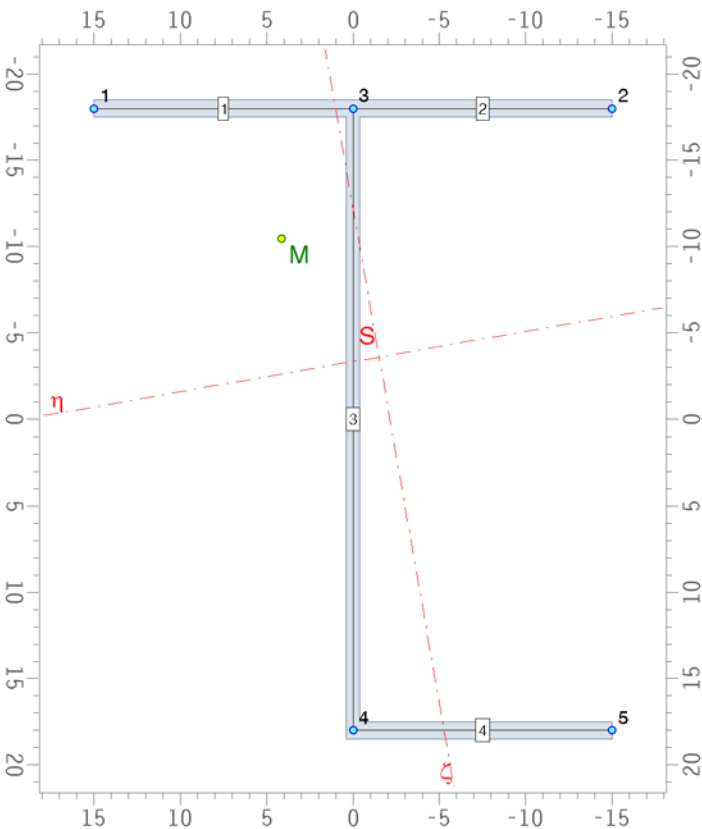
nodes

nodes	y cm	z cm	nodes	y cm	z cm
1	15.00	-18.00	4	0.00	18.00
2	-15.00	-18.00	5	-15.00	18.00
3	0.00	-18.00			

lines

line	from	to	thickn.A cm	thickn.E cm	arch rise cm	r _{ar} cm	r _{al} cm	r _{er} cm	r _{e1} cm	Φ _a °	Φ _e °
1	1	3	1.00	1.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
2	2	3	1.00	1.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
3	3	4	0.80	0.80	0.000	0.00	0.00	0.00	0.00	0.00	0.00
4	5	4	1.00	1.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00

plotting



characteristic values

area, centroid and angle of principal axis

A =	73.40 cm ²	e _y =	-1.53 cm	e _z =	-3.58 cm	α =	9.93 °
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spread

y _{max} =	15.00 cm	y _{min} =	-15.00 cm	b =	30.00 cm	U =	163.20 cm
Z _{max} =	18.50 cm	Z _{min} =	-18.50 cm	h =	37.00 cm		

Imn-system: moments of inertia and section moduli, clearances and radii of gyration

I _m =	16630.79 cm ⁴	W _{m+} =	753.19 cm ³	h _{m+} =	16.53 cm	i _m =	15.05 cm
I _n =	3204.33 cm ⁴	W _{m-} =	1114.69 cm ³	h _{m-} =	-13.47 cm	i _n =	6.61 cm
I _{mn} =	-2426.07 cm ⁴	W _{n+} =	193.83 cm ³	h _{n+} =	22.08 cm		
		W _{n-} =	237.91 cm ³	h _{n-} =	-14.92 cm		

ξηζ-system: moments of inertia and section moduli, clearances and radii of gyration

I _η =	17055.72 cm ⁴	W _{η+} =	708.50 cm ³	h _{η+} =	13.88 cm	i _η =	15.24 cm
I _ζ =	2779.41 cm ⁴	W _{η-} =	971.95 cm ³	h _{η-} =	-15.84 cm	i _ζ =	6.15 cm
I _p =	19835.12 cm ⁴	W _{ζ+} =	200.21 cm ³	h _{ζ+} =	24.07 cm	i _p =	16.44 cm
		W _{ζ-} =	175.46 cm ³	h _{ζ-} =	-17.55 cm		

shear centre

y _M =	4.15 cm	y _{SM} =	5.68 cm	η _M =	4.41 cm		
Z _M =	-10.44 cm	Z _{SM} =	-6.86 cm	ζ _M =	-7.74 cm		

shear area coefficient

κ _m =	2.23 -	A _m =	32.93 cm ²	κ _η =	2.33 -	A _η =	31.57 cm ²
κ _n =	2.87 -	A _n =	25.55 cm ²	κ _ζ =	2.78 -	A _ζ =	26.44 cm ²

torsion + warping

I _T =	21.14 cm ⁴	I _W =	612322.94 cm ⁶	R _{Sy} =	78234.15 cm ⁵	R _{Sz} =	7902.44 cm ⁵
C _s =	1109762.64 cm ⁶	I _{pM} =	25657.87 cm ⁴	i _{ωM} =	4.89 cm		
ω _{M+} =	293.39 cm ²	ω _{M-} =	-133.21 cm ²	W _{ω+} =	2087.04 cm ⁴	W _{ω-} =	4596.55 cm ⁴

section lines

i _M =	18.70 cm	r _η =	-12.49 cm	r _ζ =	20.41 cm	r _ω =	1.00 cm
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plastic characteristic values

W _{ply,max} =	995.27 cm ³	W _{plz,max} =	341.48 cm ³	W _{plη,max} =	999.70 cm ³	W _{plζ,max} =	341.08 cm ³
W _{ply,red} =	893.26 cm ³	W _{plz,red} =	335.88 cm ³	W _{plη,red} =	970.17 cm ³	W _{plζ,red} =	336.41 cm ³