

# CROSS SECTION: KESSELSTÜTZE

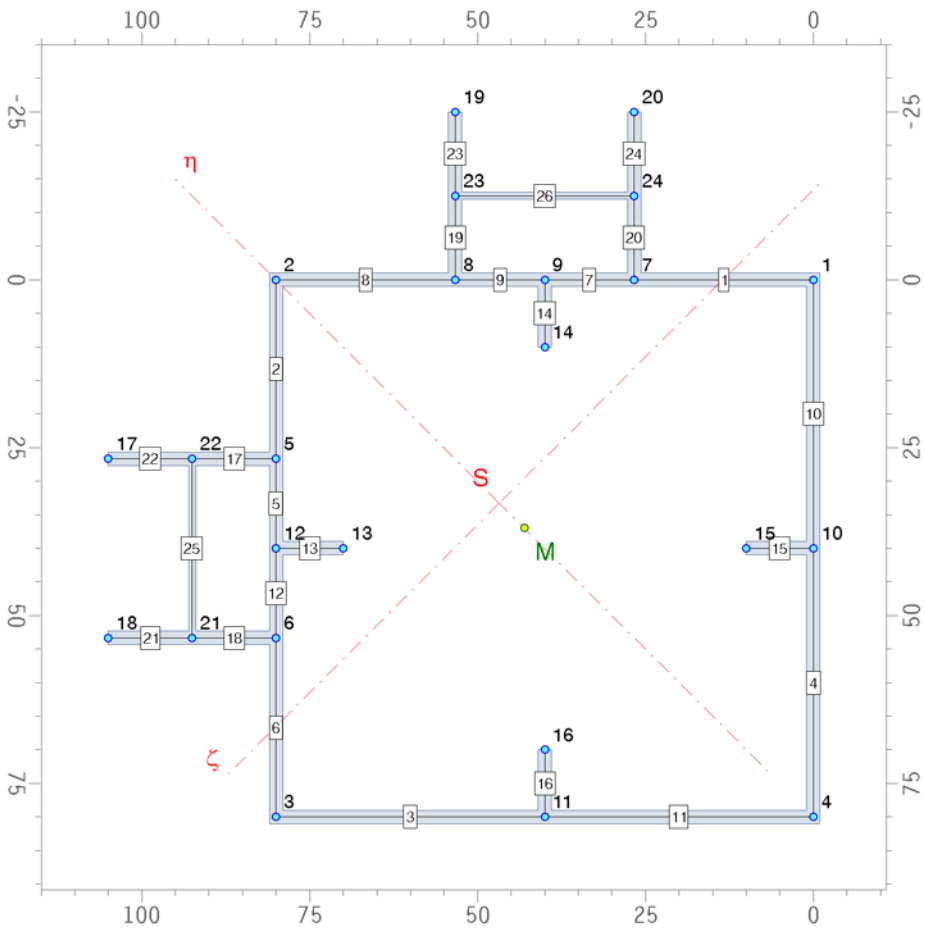
## nodes

nodes	y	z	nodes	y	z	nodes	y	z
-	mm	mm	-	mm	mm	-	mm	mm
1	0.00	0.00	9	400.00	0.00	17	1050.00	266.67
2	800.00	0.00	10	0.00	400.00	18	1050.00	533.33
3	800.00	800.00	11	400.00	800.00	19	533.33	-250.00
4	0.00	800.00	12	800.00	400.00	20	266.67	-250.00
5	800.00	266.67	13	700.00	400.00	21	925.00	533.33
6	800.00	533.33	14	400.00	100.00	22	925.00	266.67
7	266.67	0.00	15	100.00	400.00	23	533.33	-125.00
8	533.33	0.00	16	400.00	700.00	24	266.67	-125.00

## lines

line	from	to	thickn.A	thickn.E	arch rise	r <sub>ar</sub>	r <sub>al</sub>	r <sub>er</sub>	r <sub>el</sub>	Φ <sub>a</sub>	Φ <sub>e</sub>
-	-	-	mm	mm	mm	mm	mm	mm	mm	°	°
1	1	7	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
2	2	5	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
3	3	11	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
4	4	10	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
5	5	12	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
6	6	3	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
7	7	9	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
8	8	2	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
9	9	8	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
10	10	1	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
11	11	4	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
12	12	6	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
13	12	13	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
14	9	14	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
15	10	15	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
16	11	16	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
17	5	22	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
18	6	21	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
19	8	23	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
20	7	24	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
21	21	18	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
22	22	17	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
23	23	19	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
24	24	20	20.00	20.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
25	21	22	10.00	10.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
26	23	24	10.00	10.00	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 =	953.33 cm <sup>2</sup>	e <sub>y</sub> =	46.70 cm	e <sub>z</sub> =	33.30 cm	α =	-45.00 °
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spread

y <sub>max</sub> =	105.00 cm	y <sub>min</sub> =	-1.00 cm	b =	106.00 cm	U <sub>a</sub> =	472.00 cm
Z <sub>max</sub> =	81.00 cm	Z <sub>min</sub> =	-25.00 cm	h =	106.00 cm	U <sub>i</sub> =	526.67 cm
						U =	998.67 cm

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

I <sub>m</sub> =	1044071.16 cm <sup>4</sup>	W <sub>m+</sub> =	21890.37 cm <sup>3</sup>	h <sub>m+</sub> =	58.30 cm	i <sub>m</sub> =	33.09 cm
I <sub>n</sub> =	1044071.16 cm <sup>4</sup>	W <sub>m-</sub> =	17907.20 cm <sup>3</sup>	h <sub>m-</sub> =	-47.70 cm	i <sub>n</sub> =	33.09 cm
I <sub>mn</sub> =	42737.09 cm <sup>4</sup>	W <sub>n+</sub> =	17907.20 cm <sup>3</sup>	h <sub>n+</sub> =	47.70 cm		
		W <sub>n-</sub> =	21890.37 cm <sup>3</sup>	h <sub>n-</sub> =	-58.30 cm		

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

I <sub>η</sub> =	1086808.24 cm <sup>4</sup>	W <sub>η+</sub> =	18743.65 cm <sup>3</sup>	h <sub>η+</sub> =	48.51 cm	i <sub>η</sub> =	33.76 cm
I <sub>ζ</sub> =	1001334.07 cm <sup>4</sup>	W <sub>η-</sub> =	18743.65 cm <sup>3</sup>	h <sub>η-</sub> =	-67.45 cm	i <sub>ζ</sub> =	32.41 cm
I <sub>p</sub> =	2088142.32 cm <sup>4</sup>	W <sub>ζ+</sub> =	20640.13 cm <sup>3</sup>	h <sub>ζ+</sub> =	57.98 cm	i <sub>p</sub> =	46.80 cm
		W <sub>ζ-</sub> =	14845.23 cm <sup>3</sup>	h <sub>ζ-</sub> =	-57.98 cm		

shear centre

y <sub>M</sub> =	43.06 cm	y <sub>SM</sub> =	-3.64 cm	η <sub>M</sub> =	-5.14 cm		
Z <sub>M</sub> =	36.94 cm	Z <sub>SM</sub> =	3.64 cm	ζ <sub>M</sub> =	0.00 cm		

shear area coefficient

κ <sub>m</sub> =	3.39 -	A <sub>m</sub> =	280.87 cm <sup>2</sup>	κ <sub>η</sub> =	3.35 -	A <sub>η</sub> =	284.28 cm <sup>2</sup>
κ <sub>n</sub> =	3.39 -	A <sub>n</sub> =	280.87 cm <sup>2</sup>	κ <sub>ζ</sub> =	3.43 -	A <sub>ζ</sub> =	277.55 cm <sup>2</sup>

torsion + warping

I <sub>T</sub> =	1144758.25 cm <sup>4</sup>	I <sub>w</sub> =	8403827.58 cm <sup>6</sup>	R <sub>Sy</sub> =	-4172940.86 cm <sup>5</sup>	R <sub>Sz</sub> =	-4172940.86 cm <sup>5</sup>
C <sub>s</sub> =	39901650.79 cm <sup>6</sup>	I <sub>pM</sub> =	2113367.68 cm <sup>4</sup>	i <sub>ωM</sub> =	1.99 cm		
ω <sub>M+</sub> =	245.19 cm <sup>2</sup>	ω <sub>M-</sub> =	-245.19 cm <sup>2</sup>	W <sub>ω+</sub> =	34274.57 cm <sup>4</sup>	W <sub>ω-</sub> =	34274.57 cm <sup>4</sup>

section lines

i <sub>M</sub> =	47.08 cm	r <sub>η</sub> =	-1.57 cm	r <sub>ζ</sub> =	0.00 cm	r <sub>ω</sub> =	0.00 cm
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plastic characteristic values

W <sub>ply,max</sub> =	27893.05 cm <sup>3</sup>	W <sub>plz,max</sub> =	27893.05 cm <sup>3</sup>	W <sub>plη,max</sub> =	28878.63 cm <sup>3</sup>	W <sub>plζ,max</sub> =	26311.70 cm <sup>3</sup>
W <sub>ply,red</sub> =	27870.03 cm <sup>3</sup>	W <sub>plz,red</sub> =	27870.03 cm <sup>3</sup>	W <sub>plη,red</sub> =	28878.63 cm <sup>3</sup>	W <sub>plζ,red</sub> =	26311.70 cm <sup>3</sup>