

Top Plate Strength Analysis

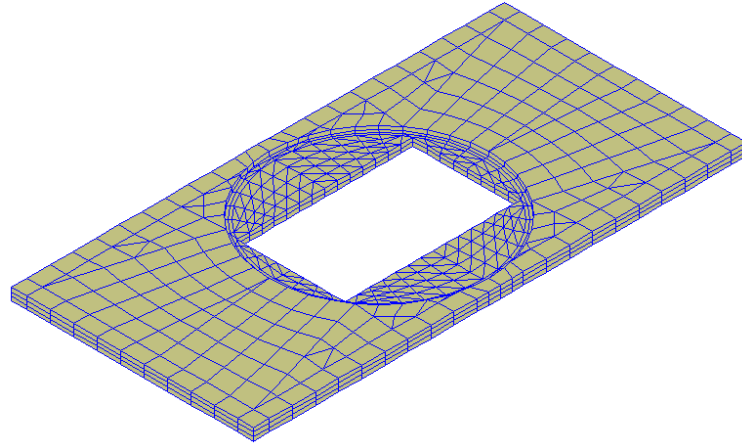
25 Jun, 2001 Tokoku

➤ Kerry's design

Plate thickness = 15 or 20mm (window section thickness = 10mm)

Condition : 1atm, 293K

O-ring d = 270mm (round)



➤ Aluminum Property

	Density 10 ³ [kg/m ³]	Young's modulus [MPa]	Poisson ratio	Yield strength [MPa]
Al2024	2.77	73.1*10 ³	0.33	76-393
Al6061	2.68	68.2*10 ³	0.332	55-276
Al7075	2.79	71.7*10 ³	--	103-503

➤ Result

t=15mm (window section t=10mm)

	Displacment dx[um]	Displacement dy[um]	Displacement dz[um]	Total disp. [um]	Max stress [MPa]
Al2024	5.41	7.62	99.04	99.07	11.02
Al6061	5.82	8.17	106.16	106.19	11.01
Al7075	5.24	7.76	100.83	100.85	11.16

t=20mm (window section t=10mm)

	Displacment dx[um]	Displacement dy[um]	Displacement dz[um]	Total disp. [um]	Max stress [MPa]
Al2024	4.21	5.13	52.27	52.32	7.31
Al6061	4.53	5.50	56.03	56.10	7.31
Al7075	4.10	5.25	53.04	53.10	7.39