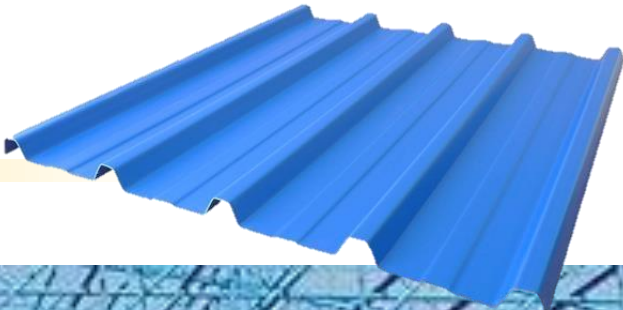
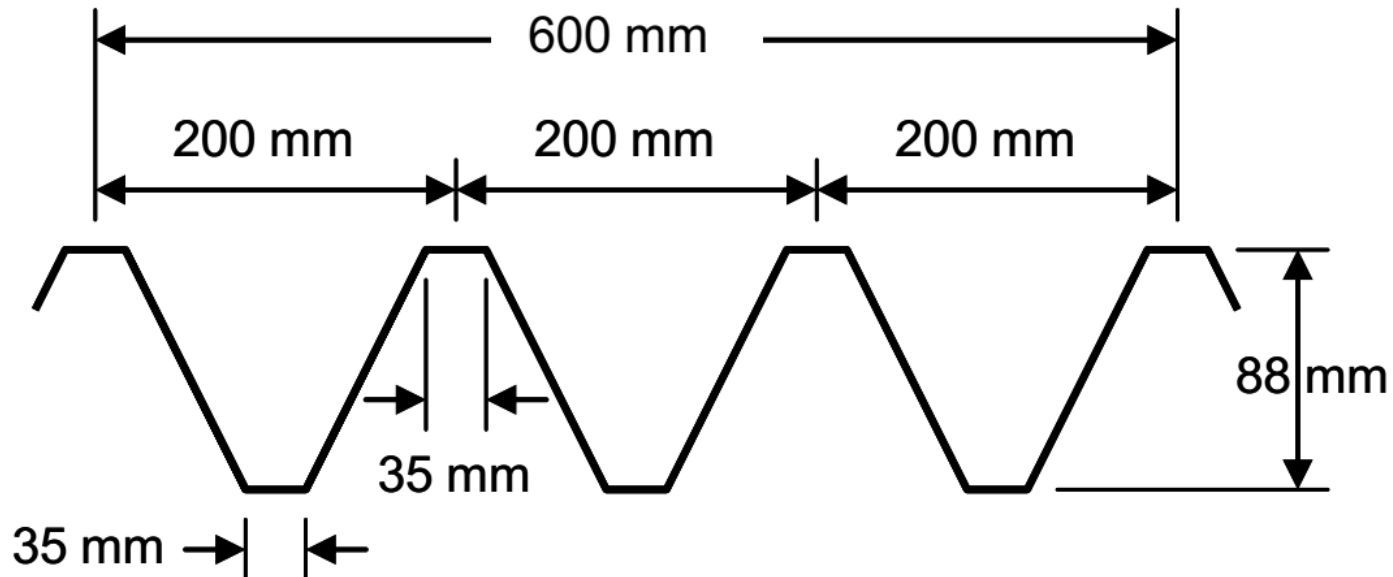


# Metal Sheet



# Example of Metal Sheet Data

t	W		$I_x$	$S_x$
mm	kg/m	kg/m <sup>2</sup>	cm <sup>4</sup>	cm <sup>3</sup>
0.4	3.09	5.15	47.12	10.76
0.5	3.87	6.45	60.80	13.00
0.6	4.58	7.63	75.70	16.20
0.8	6.02	10.03	105.0	24.50
1.0	7.45	12.42	134.0	28.80
1.2	8.96	14.93	164.0	35.00



## Metal Sheet Design Example :

Select purlin spacing = 2 m

Select metal sheet  $t = 0.4$  mm ( $W = 5.15$  kg/m<sup>2</sup>,  $I_x = 47.12$  cm<sup>4</sup>,  
 $S_x = 10.76$  cm<sup>3</sup>)

Dead Load =  $0.6 \times 5.15 = 3.09$  kg/m

Live Load =  $0.6 \times 30 = 18.00$  kg/m

Total Load =  $3.09 + 18 = 21.09$  kg/m

Bending Moment =  $21.09 \times 2^2 / 8 = 10.55$  kg-m

Bending Stress =  $1,055 / 10.76 = 98.05 < 1,500$  kg/cm<sup>2</sup> **OK**

Deflection =  $\frac{5 \times 0.2109 \times 200^4}{384 \times 2.04 \times 10^6 \times 47.12} = 0.0457$  cm

Allowable deflection =  $L/300 = 200/300 = 0.67$  cm **OK**