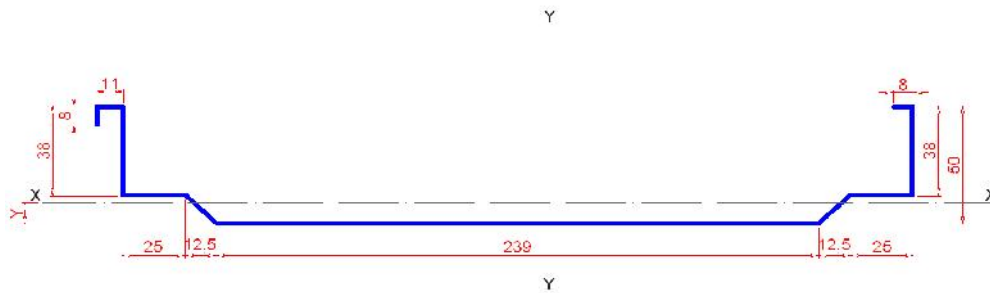


Properties of Standing seam panels (RR-50/33)



Properties of Section

Thickness 0.5 mm

Area of section	A =	2.121	cm ²
Centroid	y =	1.05472	cm
Moment of Inertia	I _x =	5.2228	cm ⁴ / m

Thickness 0.7 mm

Area of section	A =	2.962	cm ²
Centroid	y =	1.05644	cm
Moment of Inertia	I _x =	7.2029	cm ⁴ / m

For Upper Position

$$Z_u = I_x / (5-y) \quad \text{cm}^3$$

For Lower Position

$$Z_L = I_x / y \quad \text{cm}^3$$

Structure Design

- Using Simple beam with single span.
- Using Continuous beam with two span.
- Using Continuous beam with three span.

Main Office : 40 El-Kayed Gohar st., Mansheya Soghra, Alexandria, (Egypt) - Tel.: (+203)4848506 - Fax.: (+203)4877552

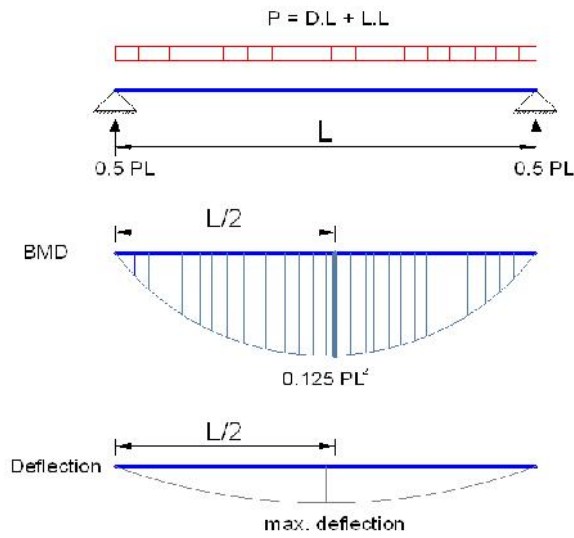
Contact Office : 69 Abou Daoud El - Zahry st., Nasr City Cairo (Egypt) - Tel.: (+202) 22737651 - Fax.: (+202) 22730879

Factory : Desert Road Km. 21 Mergham, Alexandria (Egypt) - Tel.: (+203) 2020158 - 2020159 - Fax.: (+203) 2023640

Website : www.alexform.com

E-mail : alexform@alexform.com

Simple Beam



Allowable Stress

$$P = F_b * Z_{U \text{ or } L} / 0.125 L^2$$

Maximum deflection

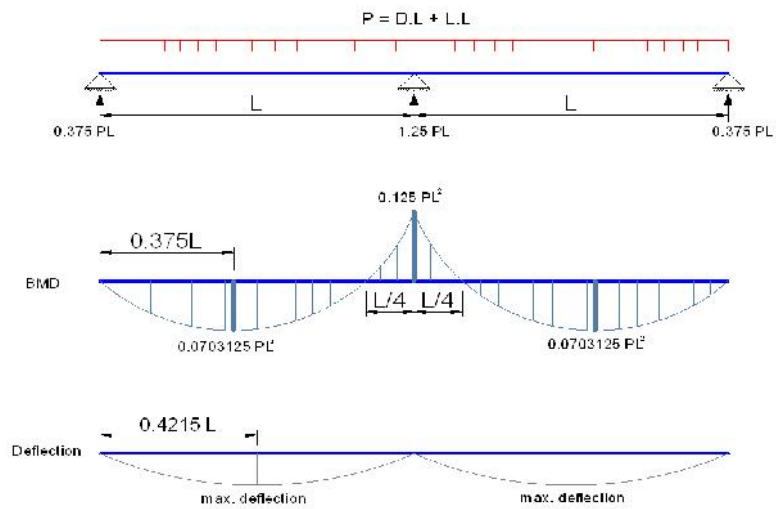
$$y_{max} <= L / 200$$

$$P = 76.8 * EI / 200 L^3$$

$$y_{max} <= L / 300$$

$$P = 76.8 * EI / 300 L^3$$

Continuous Beam with two Spans



Allowable Stress

$$P = F_b * Z_{U \text{ or } L} / 0.125 L^2$$

Maximum deflection

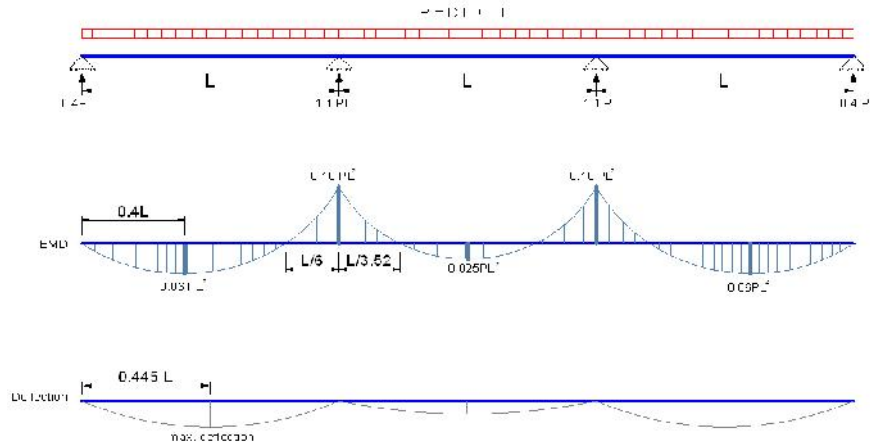
$$y_{max} <= L / 200$$

$$P = 185 * EI / 200 L^3$$

$$y_{max} <= L / 300$$

$$P = 185 * EI / 300 L^3$$

Continuous Beam with three Spans



Allowable Stress

$$P = F_b * Z_{U \text{ or } L} / 0.10 L^2$$

Maximum deflection

$$y_{\max} \leq L / 200$$

$$P = 145.27 * EI / 200 L^3$$

$$y_{\max} \leq L / 300$$

$$P = 145.27 * EI / 300 L^3$$

Table of Maximum Load

Data :

Steel Grade st.37
 F_b (t/cm²) = 1.4 E_s (t/cm²) = 2100

	Span m		1	1.5	2	2.5	3	3.5	4	4.5
	t	max. load	kN/m ²	kN/m ²	kN/m ²	kN/m ²	kN/m ²	kN/m ²	kN/m ²	kN/m ²
↑	0.5	stress	1.483	0.659	0.371	0.237	0.165	0.121	0.093	0.073
		L/ 200	4.212	1.248	0.526	0.270	0.156	0.098	0.066	0.046
		L/ 300	2.808	0.832	0.351	0.180	0.104	0.065	0.044	0.031
↓	0.7	stress	2.046	0.909	0.511	0.327	0.227	0.167	0.128	0.101
		L/ 200	5.808	1.721	0.726	0.372	0.215	0.135	0.091	0.064
		L/ 300	3.872	1.147	0.484	0.248	0.143	0.090	0.061	0.042

Table of Maximum Load

Data :

Steel Grade st.37
 F_b (t/cm²) = 1.4 E_s (t/cm²) = 2100

	Span m		1	1.5	2	2.5	3	3.5	4	4.5
	t	max. load	kN/m ²	kN/m ²	kN/m ²	kN/m ²	kN/m ²	kN/m ²	kN/m ²	kN/m ²
↑	0.5	stress	1.483	0.659	0.371	0.237	0.165	0.121	0.093	0.073
		L/ 200	10.145	3.006	1.268	0.649	0.376	0.237	0.159	0.111
		L/ 300	6.764	2.004	0.845	0.433	0.251	0.158	0.106	0.074
↓	0.7	stress	2.046	0.909	0.511	0.327	0.227	0.167	0.128	0.101
		L/ 200	13.992	4.146	1.749	0.895	0.518	0.326	0.219	0.154
		L/ 300	9.328	2.764	1.166	0.597	0.345	0.218	0.146	0.102

Table of Maximum Load

Data :

Steel Grade st.37
 F_b (t/cm²) = 1.4 E_s (t/cm²) = 2100

	Span m		1	1.5	2	2.5	3	3.5	4	4.5
	t	P	kN/m ²	kN/m ²	kN/m ²	kN/m ²	kN/m ²	kN/m ²	kN/m ²	kN/m ²
↑	0.5	stress	1.85	0.82	0.46	0.30	0.21	0.15	0.12	0.09
		L/ 200	7.967	2.360	0.996	0.510	0.295	0.186	0.124	0.087
		L/ 300	5.311	1.574	0.664	0.340	0.197	0.124	0.083	0.058
↓	0.7	stress	2.56	1.14	0.64	0.41	0.28	0.21	0.16	0.13
		L/ 200	10.987	3.255	1.373	0.703	0.407	0.256	0.172	0.121
		L/ 300	7.325	2.170	0.916	0.469	0.271	0.171	0.114	0.080