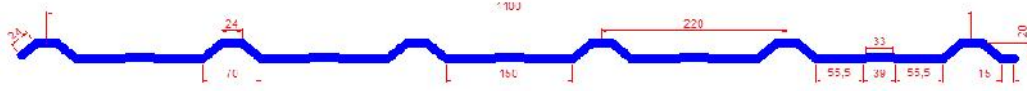
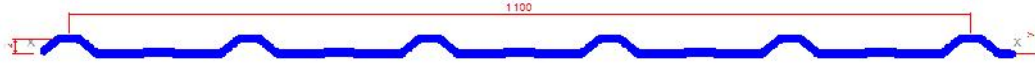


## Properties of 5 Ribs - Wall Panels



### Properties of Section



#### Thickness 0.5 mm

Area of section	A =	5.734	cm <sup>2</sup>
Centroid	y =	0.56567	cm
Moment of Inertia	I <sub>x</sub> =	3.1417	cm <sup>4</sup> / m

#### Thickness 0.7 mm

Area of section	A =	8.028	cm <sup>2</sup>
Centroid	y =	0.57566	cm
Moment of Inertia	I <sub>x</sub> =	4.4002	cm <sup>4</sup> / m

#### Thickness 0.8 mm

Area of section	A =	9.175	cm <sup>2</sup>
Centroid	y =	0.58066	cm
Moment of Inertia	I <sub>x</sub> =	5.0302	cm <sup>4</sup> / m

#### Thickness 0.9 mm

Area of section	A =	10.322	cm <sup>2</sup>
Centroid	y =	0.58567	cm
Moment of Inertia	I <sub>x</sub> =	5.6606	cm <sup>4</sup> / m

#### Thickness 1 mm

Area of section	A =	11.469	cm <sup>2</sup>
Centroid	y =	0.59067	cm
Moment of Inertia	I <sub>x</sub> =	6.2917	cm <sup>4</sup> / m

#### For Upper Position

$$Z_u = I_x / (2 \cdot y) \quad \text{cm}^3$$

#### 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

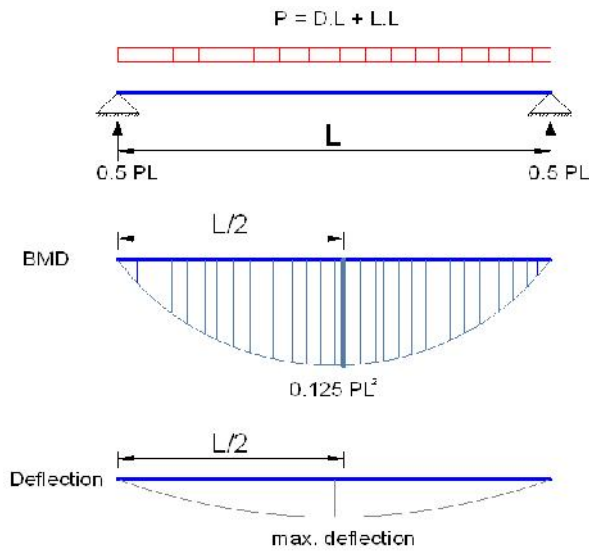
Contact Office : 69 Abou Daoud El - Zahry st., Nasr City Cairo ( Egypt ) - Tel.: (+202) 22737651 - Fax.: (+202) 22730879

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

Website : [www.alexform.com](http://www.alexform.com)

E-mail : [alexform@alexform.com](mailto:alexform@alexform.com)

## Simple Beam



**Allowable Stress**

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

**Maximum deflection**

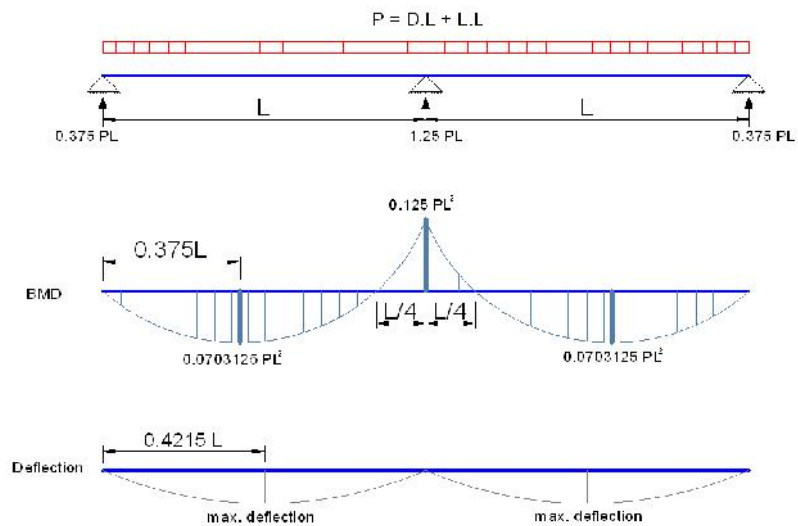
$$y_{max} <= L / 200$$

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

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

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

## Continuous Beam with two Spans



**Allowable Stress**

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

**Maximum deflection**

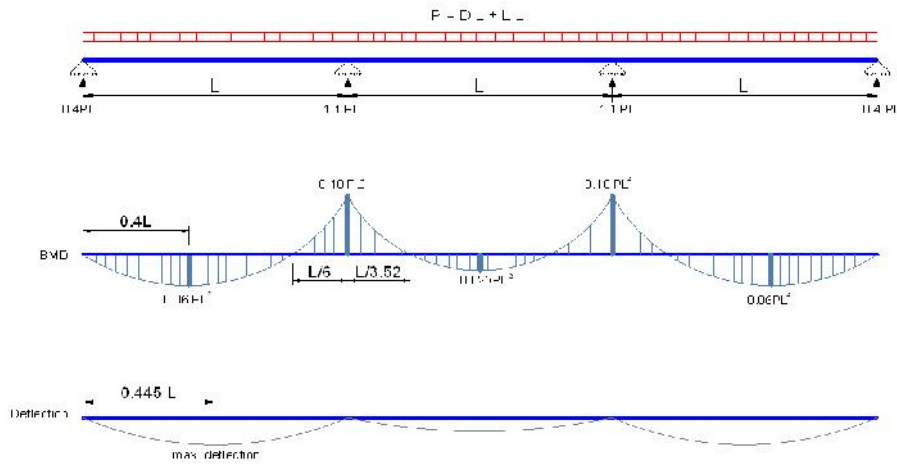
$$y_{max} <= L / 200$$

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

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

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

**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/cm<sup>2</sup>) = 1.4       $E_s$  (t/cm<sup>2</sup>) = 2100

Span m		1.5	2	2.5	3	3.5	4	4.5	5
t	max. load	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>
<b>0.5</b>	stress	1.090	0.613	0.393	0.273	0.200	0.153	0.121	0.098
	L/ 200	0.751	0.317	0.162	0.094	0.059	0.040	0.028	0.020
	L/ 300	0.500	0.211	0.108	0.063	0.039	0.026	0.019	0.014
<b>0.7</b>	stress	1.538	0.865	0.554	0.384	0.282	0.216	0.171	0.138
	L/ 200	1.051	0.444	0.227	0.131	0.083	0.055	0.039	0.028
	L/ 300	0.701	0.296	0.151	0.088	0.055	0.037	0.026	0.019
<b>0.8</b>	stress	1.764	0.992	0.635	0.441	0.324	0.248	0.196	0.159
	L/ 200	1.202	0.507	0.260	0.150	0.095	0.063	0.045	0.032
	L/ 300	0.801	0.338	0.173	0.100	0.063	0.042	0.030	0.022
<b>0.9</b>	stress	1.992	1.121	0.717	0.498	0.366	0.280	0.221	0.179
	L/ 200	1.353	0.571	0.292	0.169	0.106	0.071	0.050	0.037
	L/ 300	0.902	0.380	0.195	0.113	0.071	0.048	0.033	0.024
<b>1</b>	stress	2.222	1.250	0.800	0.556	0.408	0.313	0.247	0.200
	L/ 200	1.503	0.634	0.325	0.188	0.118	0.079	0.056	0.041
	L/ 300	1.002	0.423	0.216	0.125	0.079	0.053	0.037	0.027

### Table of Maximum Load

**Data :**

Steel Grade st.37  
 $F_b$  (t/cm<sup>2</sup>) = 1.4       $E_s$  (t/cm<sup>2</sup>) = 2100

Span m		1.5	2	2.5	3	3.5	4	4.5	5
t	max. load	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>
<b>0.5</b>	stress	1.090	0.613	0.393	0.273	0.200	0.153	0.121	0.098
	L/ 200	1.808	0.763	0.391	0.226	0.142	0.095	0.067	0.049
	L/ 300	1.205	0.509	0.260	0.151	0.095	0.064	0.045	0.033
<b>0.7</b>	stress	1.538	0.865	0.554	0.384	0.282	0.216	0.171	0.138
	L/ 200	2.533	1.068	0.547	0.317	0.199	0.134	0.094	0.068
	L/ 300	1.688	0.712	0.365	0.211	0.133	0.089	0.063	0.046
<b>0.8</b>	stress	1.764	0.992	0.635	0.441	0.324	0.248	0.196	0.159
	L/ 200	2.895	1.221	0.625	0.362	0.228	0.153	0.107	0.078
	L/ 300	1.930	0.814	0.417	0.241	0.152	0.102	0.071	0.052
<b>0.9</b>	stress	1.992	1.121	0.717	0.498	0.366	0.280	0.221	0.179
	L/ 200	3.258	1.374	0.704	0.407	0.256	0.172	0.121	0.088
	L/ 300	2.172	0.916	0.469	0.272	0.171	0.115	0.080	0.059
<b>1</b>	stress	2.222	1.250	0.800	0.556	0.408	0.313	0.247	0.200
	L/ 200	3.621	1.528	0.782	0.453	0.285	0.191	0.134	0.098
	L/ 300	2.414	1.018	0.521	0.302	0.190	0.127	0.089	0.065

## Table of Maximum Load

**Data :**

Steel Grade st.37

$F_b$  (t/cm<sup>2</sup>) = 1.4

$E_s$  (t/cm<sup>2</sup>) = 2100

t	Span m	1.5	2	2.5	3	3.5	4	4.5	5
	P	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>	kN/m <sup>2</sup>
<b>0.5</b>	stress	1.36	0.77	0.49	0.34	0.25	0.19	0.15	0.12
	L/ 200	1.420	0.599	0.307	0.177	0.112	0.075	0.053	0.038
	L/ 300	0.947	0.399	0.204	0.118	0.075	0.050	0.035	0.026
<b>0.7</b>	stress	1.92	1.08	0.69	0.48	0.35	0.27	0.21	0.17
	L/ 200	1.989	0.839	0.430	0.249	0.157	0.105	0.074	0.054
	L/ 300	1.326	0.559	0.286	0.166	0.104	0.070	0.049	0.036
<b>0.8</b>	stress	2.21	1.24	0.79	0.55	0.41	0.31	0.25	0.20
	L/ 200	2.273	0.959	0.491	0.284	0.179	0.120	0.084	0.061
	L/ 300	1.516	0.639	0.327	0.189	0.119	0.080	0.056	0.041
<b>0.9</b>	stress	2.49	1.40	0.90	0.62	0.46	0.35	0.28	0.22
	L/ 200	2.558	1.079	0.553	0.320	0.201	0.135	0.095	0.069
	L/ 300	1.706	0.720	0.368	0.213	0.134	0.090	0.063	0.046
<b>1</b>	stress	2.78	1.56	1.00	0.69	0.51	0.39	0.31	0.25
	L/ 200	2.844	1.200	0.614	0.355	0.224	0.150	0.105	0.077
	L/ 300	1.896	0.800	0.409	0.237	0.149	0.100	0.070	0.051