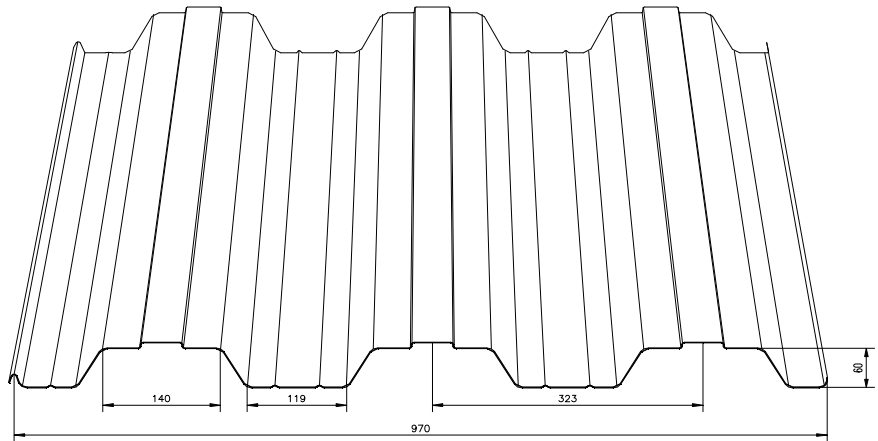
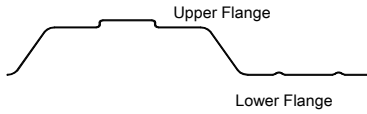


Steel Trapezoidal profile  
Cyprometal - CY60

Section Detail:



Section Properties									
Thickness [mm]	Weight [kg/m <sup>2</sup> ]	Upper Flange in Compression			Lower Flange in Compression			Web	
		l <sub>xx,eff.</sub> [cm <sup>4</sup> /m]	Z <sub>xx,eff.</sub> [cm <sup>3</sup> /m]	Moment Capacity [kNm/m]	l <sub>xx,eff.</sub> [cm <sup>4</sup> /m]	Z <sub>xx,eff.</sub> [cm <sup>3</sup> /m]	Moment Capacity [kNm/m]	Crushing Resistance P <sub>w</sub> [kN/m]	Shear Capacity P <sub>v</sub> [kN/m]
0,80	8,17	60,46	14,93	4,89	51,50	12,59	4,12	13,69	41,22
1,00	10,22	88,41	23,83	7,81	68,80	17,18	5,63	21,45	65,77
1,20	12,27	110,10	30,08	9,85	86,24	28,09	9,20	30,71	94,83

The load tables are calculated with regard to EC3 Part 1-3 requirements. The material yield strength used in the design calculation is 350 N/mm<sup>2</sup>.

### Single Span

Load Case	Thickness [mm]		Support spacing L [m]								
			1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
Positive Load	0,80	U.L.S. <sup>3)</sup>	<b>28,23</b>	18,44	12,85	9,46	7,26	5,74	4,65	3,85	3,23
		S.L.S. <sup>4)</sup>	31,17	<b>17,48</b>	<b>10,69</b>	<b>6,99</b>	<b>4,81</b>	<b>3,45</b>	<b>2,56</b>	<b>1,95</b>	<b>1,51</b>
	1,00	U.L.S.	<b>41,52</b>	26,76	18,66	13,74	10,54	8,34	6,76	5,59	4,70
		S.L.S.	42,29	<b>23,29</b>	<b>14,10</b>	<b>9,15</b>	<b>6,27</b>	<b>4,48</b>	<b>3,31</b>	<b>2,51</b>	<b>1,95</b>
	1,20	U.L.S.	55,83	36,01	25,11	18,50	14,19	11,23	9,10	7,53	6,33
		S.L.S.	<b>54,00</b>	<b>29,34</b>	<b>17,61</b>	<b>11,37</b>	<b>7,76</b>	<b>5,52</b>	<b>4,07</b>	<b>3,08</b>	<b>2,39</b>
Negative Load	0,80	U.L.S.	<b>28,23</b>	18,51	12,88	9,48	7,26	5,74	4,65	3,85	3,23
		S.L.S.	30,06	<b>17,02</b>	<b>10,47</b>	<b>6,87</b>	<b>4,74</b>	<b>3,41</b>	<b>2,53</b>	<b>1,93</b>	<b>1,50</b>
	1,00	U.L.S.	<b>39,41</b>	25,32	17,63	12,97	9,94	7,86	6,37	5,26	4,42
		S.L.S.	39,56	<b>22,16</b>	<b>13,54</b>	<b>8,85</b>	<b>6,09</b>	<b>4,36</b>	<b>3,23</b>	<b>2,46</b>	<b>1,91</b>
	1,20	U.L.S.	49,73	31,96	22,24	16,36	12,54	9,91	8,03	6,64	5,58
		S.L.S.	<b>48,84</b>	<b>27,20</b>	<b>16,57</b>	<b>10,81</b>	<b>7,43</b>	<b>5,32</b>	<b>3,93</b>	<b>2,99</b>	<b>2,33</b>
S.L.S. Max Deflection L/250 [mm]		δ	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00

### Multi Span

Load Case	Thickness [mm]		Support spacing L [m]								
			1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
Positive Load	0,80	U.L.S. <sup>3)</sup>	<b>11,95</b>	<b>8,86</b>	<b>6,87</b>	<b>5,51</b>	<b>4,52</b>	<b>3,79</b>	<b>3,22</b>	<b>2,78</b>	<b>2,42</b>
		S.L.S. <sup>4)</sup>	62,35	36,98	23,31	15,53	10,83	7,83	5,84	4,47	3,50
	1,00	U.L.S.	<b>17,74</b>	<b>13,07</b>	<b>10,09</b>	<b>8,04</b>	<b>6,58</b>	<b>5,49</b>	<b>4,66</b>	<b>4,00</b>	<b>3,48</b>
		S.L.S.	88,22	50,64	31,36	20,65	14,28	10,28	7,63	5,82	4,54
	1,20	U.L.S.	<b>24,09</b>	<b>17,64</b>	<b>13,54</b>	<b>10,75</b>	<b>8,76</b>	<b>7,29</b>	<b>6,16</b>	<b>5,28</b>	<b>4,58</b>
		S.L.S.	115,96	65,07	39,77	25,97	17,86	12,79	9,47	7,20	5,60
Negative Load	0,80	U.L.S.	<b>11,87</b>	<b>8,81</b>	<b>6,84</b>	<b>5,49</b>	<b>4,51</b>	<b>3,78</b>	<b>3,22</b>	<b>2,77</b>	<b>2,42</b>
		S.L.S.	58,77	35,50	22,59	15,14	10,60	7,69	5,75	4,41	3,45
	1,00	U.L.S.	<b>17,96</b>	<b>13,30</b>	<b>10,30</b>	<b>8,25</b>	<b>6,76</b>	<b>5,66</b>	<b>4,81</b>	<b>4,14</b>	<b>3,60</b>
		S.L.S.	79,36	46,97	29,57	19,68	13,71	9,92	7,40	5,66	4,42
	1,20	U.L.S.	<b>24,97</b>	<b>18,45</b>	<b>14,27</b>	<b>11,40</b>	<b>9,34</b>	<b>7,80</b>	<b>6,62</b>	<b>5,69</b>	<b>4,95</b>
		S.L.S.	99,30	58,16	36,41	24,15	16,78	12,12	9,03	6,90	5,39
S.L.S. Max Deflection L/250 [mm]		δ	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00

1) The maximum uniform load shown in the tables is without any safety factor. Calculation example:

S.W. = Self Weight from the table above, for t = 0.80mm S.W. = 0.0817 kN/m<sup>2</sup>

G = 2.0 kN/m<sup>2</sup>

Q = 2.0 kN/m<sup>2</sup>

For the U.L.S. check: maximum uniform load from the tables  $P > 1.35 \cdot (G + S.W.) + 1.50 \cdot Q = 1.35 \cdot (2 + 0.0817) + 1.50 \cdot 2 = 2.81 + 3 = 5.81$  kN/m<sup>2</sup>

For the S.L.S. check: maximum uniform load from the tables  $P > (G+S.W.) + Q = 2.0817 + 2.0 = 4.0$  kN/m<sup>2</sup>

2) The maximum uniform load is written in bold. For the example above maximum permissible span: 2.00m for Single Span and Positive Load for the S.L.S..

3) U.L.S.: Ultimate Limit State of design. The resistance of the steel sheet has been verified for the following Ultimate Limit State scenarios:

- Moment Capacity  $M \leq M_c$
- Web Crushing Resistance  $F_w \leq P_w$
- Web Shear Resistance  $F_v \leq P_v$
- Combined Bending and Web Crushing:  $F_w / P_w + M / M_c \leq 1.25$
- Combined Bending and Shear:  $M / M_c + (1 - M_{c,r} / M_{c,p}) (2F_v / P_v - 1)^2 \leq 1.00$  (check if  $F_v / P_v \geq 0.5$ )

4) S.L.S.: Serviceability Limit State of design. The resistance of the steel sheet has been verified for the S.L.S. deflection L/250.

5) Minimum internal bearing length required: 100mm. Minimum external bearing length required: 50mm. If these minimum lengths are not provided web crushing must be checked.