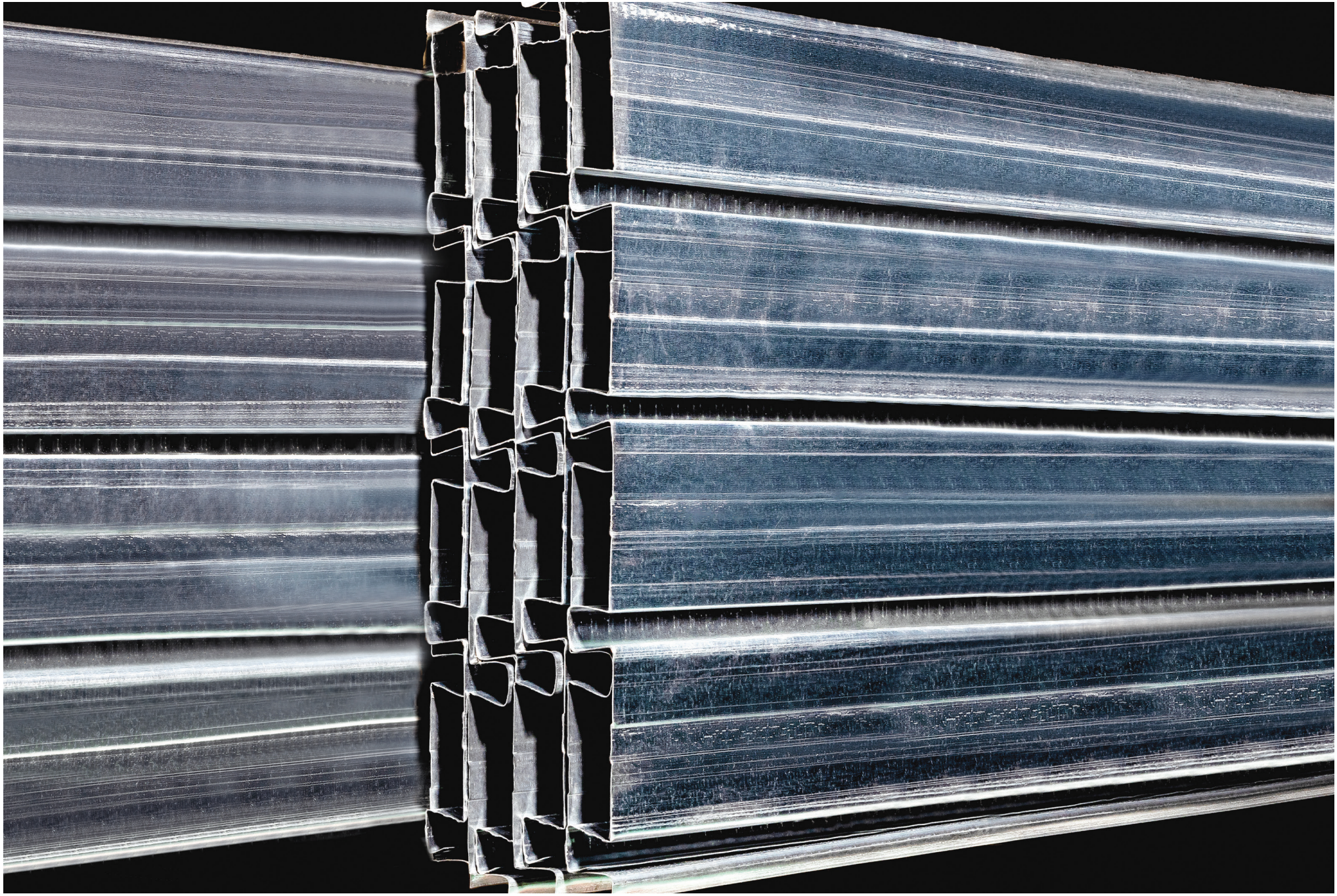
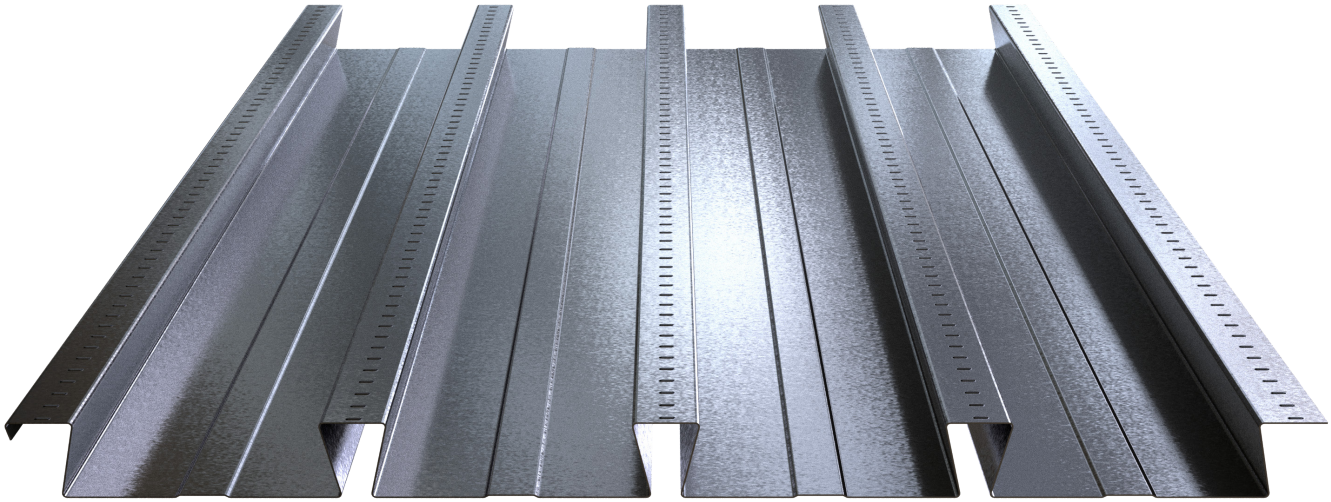


MetaLite Amalga 50/190

Standard metal decking sheets with a 50/190 profile, used as load-bearing elements for supporting concrete in floor systems of all types of buildings

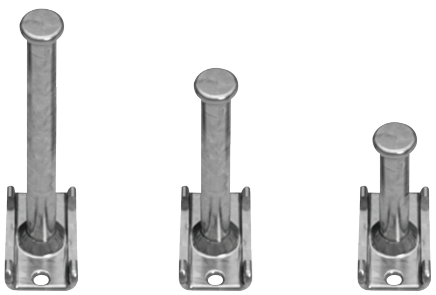


Available in

Effective cover width 760mm | Nominal thickness from 0,80mm, 1,00mm, 1,25mm and 1,50mm

Bespoke lengths up to 14 m, depending on project requirements

Shear Studs



For the anchoring of composite slabs (metal deck with concrete), the use of composite construction studs is recommended. Small indentations on the smooth surface of the metal formwork increase adhesion, but are not sufficient. It is recommended to use studs that are certified and do not require heavy and expensive on-site equipment. For a 50/190 metal deck, a stud with H = 75 mm is recommended.

Technical Characteristics

Section	M.M.	50/190
Effective width	mm	760
Development	mm	1250
Weight /m* 0,80	Kg/m	7,85
Weight /m* 1,00	Kg/m	9,81
Weight /m* 1,25	Kg/m	12,27
Weight /m* 1,50	Kg/m	14,72

Weight per running metre is calculated based on:

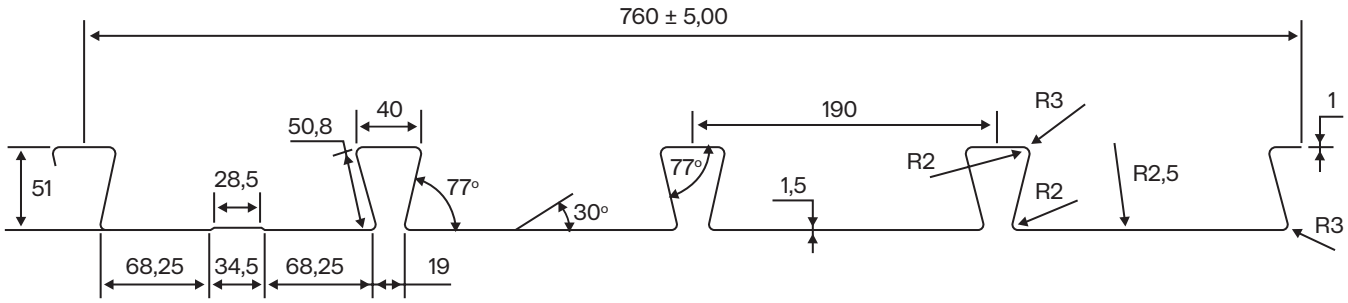
- Steel density 7850 kg/m^3
- Leakage limit 320 MPα

Dimensional Tolerances

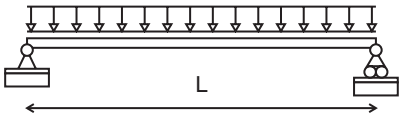
(according to the standard EN 14509)

Steel sheet with galvanised coating, thickness > 0.6 mm
Aluminium sheet, thickness > 0.7 mm
Stainless steel sheet, thickness > 0.7 mm

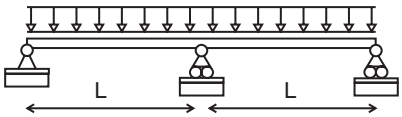
		Trapezoidal sheets without ribs	Trapezoidal sheets with ribs
Sheet Thickness	t	Steel Standard: EN 10143 Aluminum Standard: EN 485-4	
Profile Depth	h	± 1,0 mm, h ≤ 50 mm, ± 1,5 mm, 50 ~100 mm, ± 2,0 mm, h > 100 mm	
Profile Pitch	p	± 2,0 mm, h ≤ 50 mm, ± 3,0 mm, 50 ~100 mm, ± 4,0 mm, h > 100mm	
Crest and Trough Widths	b	-1,0 mm ~ +2,0 mm	-1,0 mm ~ +4,0 mm
Effective Width	w1,2,3	± 5,0 mm, h ≤ 50 mm or ± 0,1*h ≤ 15 mm, h > 50 mm	
Internal Radius	r	0 mm ~ +2 mm	± 2,0 mm
Straightness Deviation	δ	≤ 2,0 mm/m & ≤ 10 mm	
Squareness Deviation	S	S ≤ 0.005*w	No requirement
Sheet Length	l	-5 mm ~ +10 mm, L ≤ 3000 mm	-5 mm ~ +20 mm, L > 3000 mm
Side Lap Deviation	D	± 2.0 mm, l < 500 mm	
Rib Depth	hr | vs	-	-1,0 mm ~ +3,0 mm -0,15*v ~ +2,0 mm
Rib Position	ha,b,k	-	± 3,0 mm
Flange Width	bs	± 0,2 mm, h ≤ 100 mm -1,0 mm ~ +2,0 mm, h > 100 mm	D ≤ 100 mm / D > 100 mm
Flange Deformation	fs	≤ l/300 mm & ≤ 20 mm	
Flange / Frame Angle	φ	± 3.0o	
Transverse Curvature	fq	-0.01*b < 10 mm ~ +0.02*b < 10 mm	
Longitudinal Curvature	fw	± 2.0 mm, b=400mm ± 3.0 mm, b=500mm ± 5.0 mm, b=600mm	
Female Longitudinal Edge	s	-2,0 mm ~ +5,0 mm & s ≥ 10,0 mm	
Male Longitudinal Edge	buf	bu/2 + 5,0 ≤ buf ≤ bu-5, bu ≤ 30,0 mm 20,0 ≤ buf ≤ bu-5, bu > 30,0 mm	
Crest Curvature	he	± 3.0 mm	
Hole Diameter	dn	± 0,2 mm, Ø ≤ 5,0 mm -0,2 mm ~ +0,4 mm, Ø > 5,0 mm	
Hole Pitch	ux	- 1,0 mm ~ +2,0 mm	
Row Spacing	v	± 2.0 mm	
Column Spacing	uy	± 2.0 mm	
Number of Rows	-	± 3.0 %, full perforation	
Number of Columns	-	± 3.0 %, full perforation	



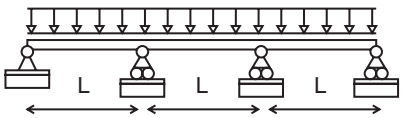
Nominal Thickness	mm	0,80	1,00	1,25	1,50
Section Weight G	Kg/m2	10,33	12,91	16,14	19,36
Section Area A	cm2/m	13,19	16,48	20,60	24,72
Moment of Inertia (Ix)	cm4/m	50,07	62,59	78,23	93,88



Nominal Thickness t [mm]	Maximum length of a single span, L [m]								
	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
	Maximum effective load Q σε kN/m²								
0,80	19,43	12,40	8,58	6,03	4,04	2,84	2,07	1,55	1,20
1,00	26,21	16,73	11,58	7,53	5,05	3,54	2,58	1,94	1,50
1,25	34,05	21,74	14,96	9,42	6,31	4,43	3,23	2,43	1,87
1,50	40,87	26,09	17,95	11,30	7,57	5,32	3,88	2,91	2,24



Nominal Thickness t [mm]	Maximum length of two spans, L [m]								
	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
	Maximum effective load Q σε kN/m²								
0,80	20,00	12,77	8,84	6,47	4,93	3,88	3,12	2,56	2,14
1,00	25,41	16,22	11,23	8,22	6,27	4,93	3,97	3,26	2,72
1,25	32,24	20,58	14,25	10,3	7,95	6,25	5,04	4,14	3,45
1,50	39,13	24,98	17,30	12,66	9,65	7,59	6,11	5,02	4,19

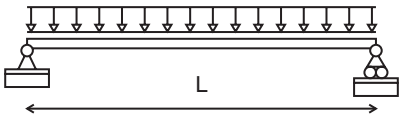


Nominal Thickness t [mm]	Maximum length of multiple spans, L [m]								
	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
	Maximum effective load Q σε kN/m²								
0,80	25,03	15,98	11,07	8,11	6,19	4,87	3,90	2,93	2,25
1,00	31,79	20,30	14,06	10,30	7,85	6,19	4,88	3,66	2,82
1,25	40,33	25,76	17,95	13,07	9,97	7,85	6,09	4,58	3,53
1,50	48,96	31,27	21,66	15,87	12,11	9,53	7,31	5,50	4,23

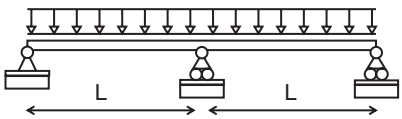
Metal DMC profiles, Metal decks & composite slabs

- Steel Grade: S320GD+Z, with minimum yield strength 320 N/mm² (Standard EN 10346:2013)
- Concrete Quality: C 20/25
- Reinforcement Steel Grade (longitudinal): B500C
- Minimum width of continuous support: 100 mm

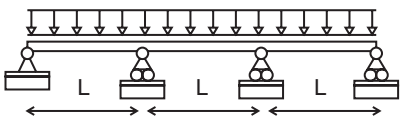
Reinforcement at support locations – negative moments						
Slab thickness, hc [m]						
0,14	0,15	0,16	0,17	0,18	0,19	0,20
Reinforcement ratio: [mm/cm]						
Ø8/20	Ø8/15	Ø8/15	Ø10/20	Ø10/20	Ø10/15	Ø10/15



Nominal Thickness Slab hc = 0.20m Nominal Sheet Thickness: t [mm]	Maximum length of a single span, L [m]								
	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
	Maximum effective load Q σε kN/m²								
0,80	105,74	83,79	69,16	**58,70**	**50,86**	**44,77**	**39,89**	**35,90**	**30,66**
1,00	114,11	90,48	74,73	63,48	**55,04**	**48,47**	**43,22**	**38,93**	**35,35**
1,25	123,11	97,67	80,72	68,61	59,52	**52,46**	**46,81**	**42,18**	**38,33**
1,50	130,97	103,96	85,95	73,09	63,44	55,94	**49,93**	**45,02**	**40,93**



Nominal Thickness Slab hc = 0.20m Nominal Sheet Thickness: t [mm]	Maximum length of two spans, L [m]								
	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
	Maximum effective load Q σε kN/m²								
0,80	83,79	66,23	54,52	**46,16**	**38,97**	**29,95**	**23,50**	**18,72**	**15,09**
1,00	90,48	71,58	58,97	49,97	**38,95**	**29,93**	**23,48**	**18,70**	**15,07**
1,25	97,67	77,33	63,76	52,08	38,92	**29,90**	**23,45**	**18,67**	**15,04**
1,50	103,96	82,35	67,94	52,06	38,90	29,88	**23,42**	**18,65**	**15,02**



Nominal Thickness Slab hc = 0.20m Nominal Sheet Thickness: t [mm]	Maximum length of multiple spans, L [m]								
	1,00	1,25	1,50	1,75	2,00	2,25	2,50	2,75	3,00
	Maximum effective load Q σε kN/m²								
0,80	87,45	69,16	56,96	**48,25**	**41,72**	**36,64**	**30,49**	**24,50**	**19,94**
1,00	94,42	74,73	61,60	52,22	**45,19**	**38,56**	**30,47**	**24,48**	**19,92**
1,25	101,91	80,72	66,59	56,50	48,93	**38,53**	**30,44**	**24,45**	**19,90**
1,50	108,46	85,95	70,94	60,22	49,82	38,50	**30,41**	**24,42**	**19,87**

Ultimate Limit State (ULS): According to Eurocode 3 (Standards EN 1993-1-3 and EN 1993-1-5)
Serviceability Limit State (SLS): Safety factor for permanent and variable loads: G + Q = 1.00
Maximum allowable deflection per span: L/200 for G + Q L/250 for Q only, where L = span length
Ultimate Limit State (ULS) Safety Factor: S = 1.1 for loading of 1.35 G + 1.50 Q