



Version 12a

EXTRUSION 2008

Existing Dies Shipbuilding

Solid

Hollow

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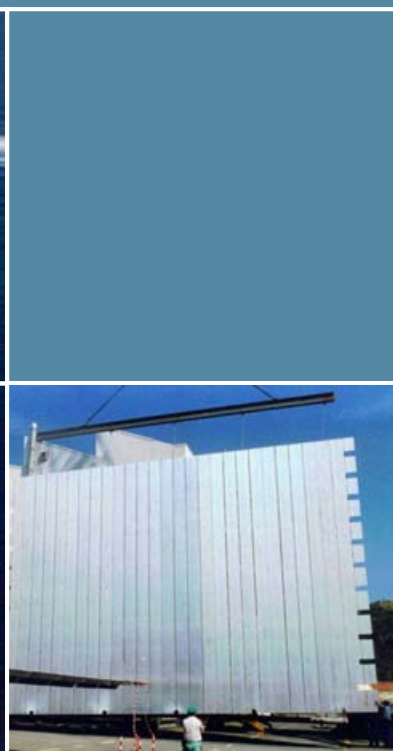
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Bulbs

Examples

Mecanical
properties



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EXTRUSION



Solid 1/2

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Cross section Scale ~1:10	Bulbs	Section Number	Weight		I_x cm^4	W_x cm^3	Alloys AA			
			kg/m cm^2	kg/m^2			6060	6063	6005A	6082
		58'874	18.84	31.40	604.9	66.3				
		<i>Bulb</i>	6.76	-	66.7	10.9	✓	✓	✓	
		58'870	15.92	26.53	569.3	64.5				
		<i>Bulb</i>	6.76	-	66.7	10.9	✓	✓	✓	
		58'871	14.02	23.37	542.7	63.3				
		<i>Bulb</i>	6.76		66.7	10.9	✓	✓	✓	
		58'888	8.16	16.31	385.0	47.3				
		<i>Bulb</i>	4.50		48.0	7.3	✓	✓	✓	
		58'670	6.57	13.14	349.3	46.0				
		<i>Bulb</i>	4.50		48.0	7.3	✓	✓	(✓)	
		59'301	15.46	25.77	476.0	57.7				
		<i>Bulb</i>	6.40		54.4	9.5	✓	✓	✓	
		58'873	9.98	16.63	263.5	39.6				
		<i>Bulb</i>	5.42		33.9	6.9	✓	✓	✓	
		58'669	6.13	12.26	196.8	31.2				
		<i>Bulb</i>	3.70		25.0	4.7	✓	✓	*	
		58'671	8.04	13.40	231.9	39.5				
		<i>Bulb</i>	3.38		20.3	4.1	✓	✓	*	

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Solid 2/2

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Cross section Scale ~1:10	Bulbs	Section Number	Weight		I_x cm^4	W_x cm^3	Alloys AA			
			kg/m cm^2	kg/m^2			6060	6063	6005A	6082
		60'471	10.57	17.60	285.5	60.2	✓	✓	✗	✗
		<i>Bulb</i>	3.88		16.6	3.5				
		58'660	12.00	19.71	235.6	48.5	✓	✓	✓	✓
		<i>Bulb</i>	3.36		11.0	2.6				
		58'230	8.13	13.55	62.7	11.1	✓	✓	✓	✓
		<i>Bulb</i>	2.26		6.8	2.0				
		59'623	11.22	18.70	245.2	55.1	✓	✓	✓	✓
		<i>Bulb</i>	4.12		14.8	3.6				
		59'218	9.03	15.05	75.6	17.0	✓	✓	✓	✓
		<i>Bulb</i>	2.51		6.1	2.1				
		58'426	7.09	12.90	92.5	25.4	✓	✓	✓	✓
		<i>Bulb</i>	2.90		6.0	1.7				
		58'127	10.00	16.67	57.6	13.5	✓	✓	✓	✓
		<i>Bulb</i>	2.60		5.0	1.7				
		58'229	6.96	11.60	47.9	13.9	✓	✓	✓	✓
		<i>Bulb</i>	1.95		3.1	1.1				
		58'656	8.00	13.33	76.9	25.2	✓	✓	✓	✓
		<i>Bulb</i>	2.57		3.6	1.2				
		53'026	7.85	13.08	76.8	25.2	✓	✓	✓	✓
		<i>Bulb</i>	2.57		3.6	1.2				
		59'745	6.16	11.41	32.5	9.1	✓	✓	✓	✓
		<i>Bulb</i>	1.59		2.5	1.0				
		58'815	4.89	12.23	43.9	16.3	✓	✓	✗	✗
		<i>Bulb</i>	2.42		2.9	1.1				
		61'168	7.27	12.12	9.1	3.0	✓	✓	✗	✗
		<i>Bulb</i>	0.75		0.7	0.5				

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Mecanical
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Hollow 1/2

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Cross section Scale ~1:10	Section Number	Weight		I_x cm^4	W_x cm^3	Alloys AA			
		kg/m	kg/m^2			6060	6063	6005A	6082
	57'979	22.78	44.50	560.8	152.8	✓	✓	✓	
	52'165	12.77	37.60	312.0	85.0	✓	✓	✓	
	60'059	19.73	32.19	451.7	139.9	✓	✓	✓	T
	59'253	18.19	29.67	400.6	133.5	✓	✓	✓	I
	59'843	12.74	21.73	328.6	104.4	✓	✓	✗	I special
	59'159	15.58	25.41	251.8	96.0	✓	✓	✓	Flange And T
	59'327	11.31	31.77	102.8	45.2	✓	✓	✓	
	58'169	11.32	19.35	67.8	47.2	✓	✓	✗	T special
	55'810	9.45	16.30	59.1	37.6	✓	✓	✗	Bulbs
	57'789	9.59	16.41	59.1	39.4	✓	✓	✗	

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Hollow 2/2

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Cross section Scale ~1:10	Section Number	Weight		I_x cm^4	W_x cm^3	Alloys AA			
		kg/m	kg/m^2			6060	6063	6005A	6082
	59'479	9.86	17.15	40.1	32.1	✓	✓	✗	✗
	59'972	9.42	16.38	38.9	31.1	✓	✓	✗	✗
	58'857	9.18	25.79	46.1	28.1	✓	✓	✓	✓
	59'328	5.02		34.7	12.4	✓	✓	✓	✓
	58'872	4.57		16.9	8.4	✓	✓	✓	✓
	61'273	3.23		7.2	3.1	✓	✓	✓	✓

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Cross section	Section Number	Dimensions								Weight kg/m	I _x cm ⁴	W _x cm ³	Alloys AA			
		h	b	s	s1	R	r1	r2	r3				6060	6063	6005A	6082
	54'113	120	80	8	8	4	4	4	1	4.16	227.0	28.1	✓	✓	✓	
	60'642	120	80	8	8	5	1	1	1	4.20	229.0	28.2	✓	✓	✓	
	61'350	120	82	7	12	8	1	1	1	4.80	229.1	26.0	✓	✓	✓	
	58'126	120	60	6	8	8	1	1	1	3.15	171.5	21.1	✓	✓	✓	
	43'090	140	76.2	5.84	12.5	5.84	1.6	1.6	1.6	4.63	304.2	29.5	✓	✓	✓	
	55'672	150	68	10	6	5	0.5	0.5	0.5	5.05	430.8	48.5	✓	✓	✓	
	57'129	175	110	8	8	5	0	0	0	6.06	719.6	60.7	✓	✓	✓	
	34'756	178	114	7.62	13.7	6.6	1	1	1	7.71	833.5	63.3	✓	✓	✓	
	54'661	178	102	6.6	14.7	6.6	0	0	0	7.05	737.5	55.3	✓	✓	✓	
	58'797	180	100	6	10	4	0.5	0.5	0.5	5.51	656.3	50.6	✓	✓	✓	
	43'192	200	100	8	15	4	1	1	1	8.12	1'170.0	81.9	✓	✓	✓	
	46'106	200	140	8	15	4	0	0	0	9.76	1'294.9	85.6	✓	✓	✓	
	53'456	200	50	8	12	5	2	2	1	5.74	874.6	71.3	✓	✓	✓	
	54'660	216	140	7.62	15.7	7.4	0	0	0	10.20	1'566.2	95.5	✓	✓	✓	
	58'674	220	80	5	8	4	1	1	1	4.64	881.6	59.7	✓	✓	✓	
	58'325	230	80	5	8	2	0.5	0.5	0.5	4.77	993.9	65.0	✓	✓	✓	
	54'468	235	170	8	10	8	0	0	0	9.59	1'975.1	116.2	✓	✓	✓	
	59692s	238	230	9	24	5	2	2	2	20.27	2'776.9	142.2	✓	✓	✓	
	58'672	240	140	6	10	4	1	1	1	7.58	1'610.6	91.8	✓	✓	✓	
	59'832	240	230	9	15	5	1	1	1	14.92	2'697.9	143.4	✓	✓	✓	
	55'014	275	150	9	12	6	1	1	1	11.37	3'305.2	173.1	✓	✓	✓	
	58'852	280	100	5	8	4	1	1	1	5.89	1'828.7	97.2	✓	✓	✓	
	55'133	280	100	8	10	6	1	1	1	8.63	2'662.9	148.2	✓	✓	✓	
	57'136	300	60	15	15	2	2	2	2	14.07	4'560.3	270.5	✓	✓	✓	
	58'326	310	120	5	8	2	0.5	0.5	0.5	6.72	2'559.6	121.3	✓	✓	✓	
	55'015	350	100	8	10	6	1	1	1	10.16	4'879.7	224.4	✓	✓	✓	
	60'643	350	120	8	10	5	1	1	1	10.69	5'182.1	231.4	✓	✓	✓	
	58'568	350	100	5	8	3	0.5	0.5	0.5	6.84	3'337.9	147.1	✓	✓	✓	
	58735s	390	150	6	8	6	0.5	0.5	0.5	9.54	5'804.9	224.6	✓	✓	✓	
	58'677	400	140	5	8	4	1	1	1	8.39	5'367.1	199.5	✓	✓	✓	
58'570	410	100	6	8	3	0.5	0.5	0.5	8.75	5'780.7	229.2	✓	✓	✓		
58'569	420	150	5	10	3	0.5	0.5	0.5	9.67	6'697.0	227.9	✓	✓	✓		
59'302	420	150	8	10	0.5	0.5	0.5	0.5	13.00	9'134.1	337.2	✓	✓	✓		
55'016	450	100	9	10	6	1	1	1	13.53	10'472.0	395.2	✓	✓	✓		
55'017	450	150	10	12	6	1	1	1	16.85	13'493.0	475.1	✓	✓	✓		
60'641	420	100	8	10	5	1	1	1	11.67	7'996.0	314.2	✓	✓	✓		

Solid

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Bulbs

Examples

Mecanical
properties

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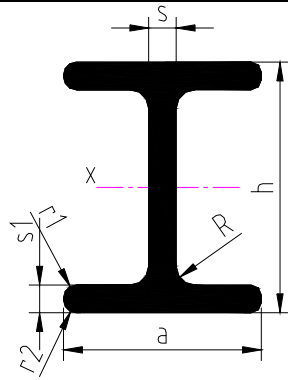
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EXTRUSION



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Cross section



Section Number	Dimensions								Weight kg/m	I _x cm ⁴	W _x cm ³	Alloys AA			
	h	a	s	s1	R	r1	r2	6060				6063	6005A	6082	
41'987	200	80	4	6	5			4.71	1'143.6	114.4	✓	✓	✓		
49'185	200	120	6	8	10			8.46	2'151.2	215.1	✓	✓	✓		
51'748	200	125	10	10	3	3	3	11.67	2'736.5	273.7	✓	✓	✓		
53'228	203.2	114.3	11.1	12.71	11	2	2	13.53	3'231.3	318.0	✓	✓	✓		
31'528	215.9	101.6	7.94	11.1	15	2	2	10.83	3'011.8	279.0	✓	✓	✓		
58'785	250	85	4	10	5	0.5	0.5	7.19	2'882.3	230.6	✓	✓	*		
57'934	250	146	6	6	5	1	1	8.71	3'309.0	264.9	✓	✓	✓		
46584s	250	250	8	13	12	1	1	22.89	10'031.3	802.5	✓	✓	✓		
49'552	254	127	11.1	14.28	13.5			17.10	6'466.2	509.1	✓	✓	✓		
55'458	270	140	8	10	10	2	2	13.27	5'893.9	436.6	✓	✓	✓		
58'758	274	160	6	12	6	3	3	14.57	7'396.4	539.4	✓	✓	✓		
59'911	289	120	5	8	3	0.5	0.5	8.96	4'652.3	322.0	✓	✓	✓		
55285s	300	200	10	10	4	2	2	18.51	10'254.9	683.7	✓	✓	✓		
59'021	313.4	180	4.2	4.7	6	2	2	8.14	5'068.4	323.4	✓	✓	*		
59'022	313.4	180	5.2	8.2	6	2	2	12.30	8'056.4	514.3	✓	✓	✓		
39'999	314.7	140	6	8	6			11.05	6'669.1	423.8	✓	✓	✓		
39997s	314.7	170	10	15	10			21.85	13'553.2	861.3	✓	✓	✓		
58'227	320	100	6	10	5			10.40	6'204.4	387.8	✓	✓	✓		
AS43605	400	200	10	15	10	1	1	26.61	26'746.7	1'837.3	✓	✓	✓		
AS43600	400	200	10	16	10	1.5	1.5	27.64	28'029.0	1'401.5	✓	✓	✓		
58762s	400	200	15	18	10	1	1	34.66	32'585.7	1'629.3	✓	✓	✓		

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Cross section	Section Number	Dimensions									Weight kg/m	I _x cm ⁴	W _x cm ³	Alloys AA			
		h	a	b	s	s1	s2	R	r1	r2				6060	6063	6005A	6082
	58'887	220	80	30	5	8	4	2	0.5	0.5	4.90	1'083.4	77.8	✓	✓	✓	
	58'315	220	100	30	6	8	4	2			5.91	1'272.0	89.6	✓	✓	✓	
	59'326	240	140	30	6	10	4	2	0.5	0.5	7.83	1'894.0	111.7	✓	✓	✓	
	60'019	240	150	100	6	12	6	10	1	1	10.28	3'278.6	210.5	✓	✓	✓	
	58'695	250	130	30	6	10	4	4	1	1	7.73	2'052.6	118.4	✓	✓	✓	
	58'877	280	100	30	5	8	4	2	0.5	0.5	6.16	2'162.2	120.5	✓	✓	✓	
	59'329	280	100	30	6	8	4	2	0.5	0.5	6.88	2'364.0	134.9	✓	✓	✓	
	58'676	300	120	30	5	8	4	4	1	1	6.87	2'742.2	138.8	✓	✓	✓	
	58'694	300	180	30	6	10	4	4	1	1	9.91	3'662.2	169.9	✓	✓	✓	
	54'929	314	125	80	5	8	8	6	2	2	8.58	4'897.7	280.7	✓	✓	✓	
	58'316	320	140	30	6	12	4	2			9.87	4'211.9	188.0	✓	✓	✓	
	58'886	350	100	30	5	8	4	2	0.5	0.5	7.11	3'831.3	175.7	✓	✓	✓	
	59'309	350	150	30	5	10	4	2	0.5	0.5	8.98	4'695.5	192.4	✓	✓	✓	
	60'139	370	100	40	7	10	4	8	1	1	10.12	6'100.4	274.2	✓	✓	✓	
	60'140	370	150	40	7	10	4	8	1	1	11.48	6'995.8	292.2	✓	✓	✓	
	55'135	450	100	40	9	10	9	6	1	1	14.33	12'365.0	492.1	✓	✓	✓	
53'864	615	100	25	12	23	5	10	2	2	25.92	38'527.5	1'044.7	✓	✓	✓		

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Cross section Scale ~1:10	Section Number	Weight kg/m	I_x cm ⁴	W_x cm ³	Alloys AA			
					6060	6063	6005A	6082
	48'984	8.42	68.3	13.0	✓	✓	✓	
	50'647	11.13	69.2	13.3	✓	✓	✓	
	51'919	6.60	79.6	14.9	✓	✓	✓	
	54'536	9.13	11.2	5.3	✓	✓	✓	
	54'535	16.43	14'657.0	453.8	✓	✓	✓	
	50'648	18.88	13'405.1	413.7	✓	✓	✓	
	50'379	14.20	10'741.1	349.1	✓	✓	✓	
	48'983	16.03	12'120.0	396.2	✓	✓	✓	
	54'930	20.27	20'017.0	963.1	✓	✓	✓	

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EXTRUSION



T special + Bulbs

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T special

Cross section Scale ~1:10	Section Number	Weight <i>kg/m</i>	I_x <i>cm⁴</i>	W_x <i>cm³</i>	Alloys AA			
					6060	6063	6005A	6082
	60'637	11.28	4'632.3	211.1	✓	✓	✓	✓
	60'639	15.53	9'588.9	413.3	✓	✓	✓	✓

Bulbs

Cross section Scale ~1:10	Section Number	Weight <i>kg/m</i>	I_x <i>cm⁴</i>	W_x <i>cm³</i>	Alloys AA			
					6060	6063	6005A	6082
	61'410	4.64	552.5	49.8	✓	✓	✓	✓

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EXTRUSION



Examples 1/2

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Cross section Scale ~1:10	Section Number	Weight		I_x cm^4	W_x cm^3	Alloys AA			
		kg/m	kg/m^2			6060	6063	6005A	6082
	58'228	16.13	59.74	4'562.0	299.4	✓	✓	✓	Solid
	57'980	14.90		12'415.0	505.3	✓	✓	✓	T
	57'981	9.61		5'921.3	235.9	✓	✓	✓	I
	58'530	10.46	17.39	98.2	21.8	✓	✓	✓	I special
	57'982	11.02	18.34	145.2	31.2	✓	✓	✓	I special
	58'529	9.00	14.98	121.4	24.8	✓	✓	✓	Flange And T
	60'423	14.22		375.2	72.3	✓	✓	✓	T special
	59'156	13.06	21.58	254.8	47.7	✓	✓	✓	Bulbs
	59'917	12.13	20.05	250.9	47.6	✓	✓	✓	Bulbs

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Examples

Mecanical
properties

EXTRUSION



Examples 2/2

12 v. 12a

Cross section Scale ~1:10	Section Number	Weight		I_x cm^4	W_x cm^3	Alloys AA			
		kg/m	kg/m^2			6060	6063	6005A	6082
	58'766	15.52		5'556.7	427.4	✓	✓	✓	
	59245s	27.77		9'610.5	739.3	✓	✓	✓	
	58'794	15.96		2'642.8	195.9	✓	✓	✓	
	58'790	5.59		343.3	48.6	✓	✓	✓	
	58'791	6.33		459.6	43.7	✓	✓	✓	
	59'330	5.88		126.7	24.2	✓	✓	✓	
	60'029	3.26		192.1	22.9	✓	✓	✓	
	59'936	4.96		936.5	90.9	✓	✓	✓	
	60'138	6.18		905.9	76.0	✓	✓	✓	

Solid

Hollow

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I

I special

Flange
And T

T special

Bulbs

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Mecanicals properties

13 v. 12a

Mecanicals properties of aluminium sections

Alloy designation			Temper		Thickness [mm]	Tensile strenght (min.) EN 755-2 R _m [Mpa] /ongit.	Proof stress (min.) EN 755-2 R _{p0.2} [Mpa] longit.	Elongation (min.) EN 755-2 A ₅ [%] longit.
AA Reg. No	EN 573-3		DIN	AA				
6060	EN 6060	AlMgSi0.5	F22	T66	< 3	215	160	8
					3-25	195	150	
6063	EN 6063	AlMgSi0.5	F25	T66	>10	245	200	8
6005A	EN 6005A	AlMgSi0.7	F27 ⁽¹⁾	T6	< 5	270	225	8
					5-10	260	215	
			F26 ⁽²⁾		< 5	255	215	8
					5-10	250	200	
6106	EN 6106	AlMgSiMn	F25	T6	>10	250	200	8
6082	EN 6082	AlMgSi1	F29	T6	< 5	290	250	10
			F31	T6	5-15	310	260	
5754	EN 5754	AlMg3	F18	F	all	180	80	14
5454	EN 5454	AlMg2.7Mn	F22	F	all	200	85	16
5083	EN 5083	AlMg4.5Mn	F27	F	all	270	110	12

(¹) for solid extrusions (²) for hollow extrusions

Mecanicals properties of aluminium butt welds (MIG welded)

Alloy designation			Temper		Thickness [mm]	Heat affected zone Tensile strenght (min.) DIN 50123 R _m [Mpa]	Proof stress (min.) DIN 50123 R _{p0.2} [Mpa]
AA Reg. No	EN 573-3		DIN	AA			
6060	EN 6060	AlMgSi0.5	F22	T66	< 3	95	65
					3-25		
6063	EN 6063	AlMgSi0.5	F25	T66	> 10	95	65
6005A	EN 6005A	AlMgSi0.7	F27 ⁽¹⁾	T6	< 5	165	115
					5-10		
			F26 ⁽²⁾		< 5		
					5-10		
6106	EN 6106	AlMgSiMn	F25	T6	> 10	160	115
6082	EN 6082	AlMgSi1	F29	T6	< 5	185	115
			F31	T6	5-15		
5754	EN 5754	AlMg3	F18	F	all	190	80
5454	EN 5454	AlMg2.7Mn	F22	F	all	190	80
5083	EN 5083	AlMg4.5Mn	F27	F	all	275	125

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Solid

Hollow

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