

Cross sectional data - Areco TP128-420

Table 1

Sheet thickness, nominal	t_{nom}	mm	0,65	0,70	0,75	0,80	0,90	1,00	1,20
Sheet thickness, in calculation	t_{ber}	mm	0,590	0,665	0,713	0,760	0,866	0,955	1,144
Yield point	f_{ty}	N/mm ²	420	420	420	420	420	420	420
Mass	m	kg/m	7,80	8,40	9,00	9,60	10,80	12,00	14,40
Dead weight including side overlap	g	kN/m ²	0,084	0,090	0,097	0,103	0,116	0,129	0,155
Bearing resistance $l_s=100$ mm	R_d	kN/m	16,70	21,60	25,00	28,50	37,10	45,10	64,10
Narrow flange under pressure	M_d	kNm/m	11,51	13,70	15,10	16,35	19,16	21,54	28,17
2:nd moment of area	I_{def}	mm ⁴ /mm	2206	2486	2666	2841	3238	3570	4277
Wide flange under pressure	M_d	kNm/m	8,58	10,50	11,75	13,01	15,97	18,58	24,39
2:nd moment of area	I_{def}	mm ⁴ /mm	2062	2372	2574	2774	3235	3570	4277

Data for stressed skin calculations - Areco TP128-420

Table 2

Thickness	Shear buckling			End support		
	Flange	Web	Global	Framework bending effects	Reaction of purlins to stressed skin effect	Tensile force in fasteners
t_{nom}	V_f	V_w	$L^2 V_{gd}$	V_d	R_s/V	$F_c/2V$
mm	kN/m	kN/m	kN/m	kN/m		m
0,65	26,90	16,60	617	4,00	1,06	164
0,70	37,30	23,20	738	5,00	1,06	164
0,75	45,20	28,20	819	5,60	1,06	164
0,80	53,90	33,70	901	6,30	1,06	164
0,90	77,30	48,70	1097	8,00	1,06	164
1,00	101,40	64,10	1270	9,50	1,06	164
1,20	153,20	106,70	1665	13,20	1,06	164

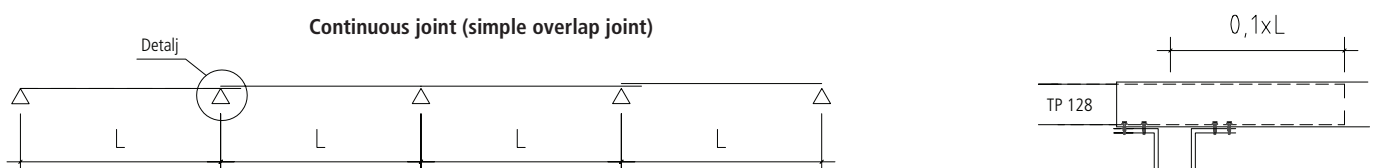
Minimum fastening:

End support 2 screw in the bottom of each profile
 Intermediate, End overlap 1 screw in the bottom of each profile
 Side overlap Maximum c/c 500 mm

Support width:

≥ 100mm (both end support and intermediate support)

Joining overlap:


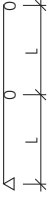


Areco TP128

ROOF Insulated L/200

Maximum loads in kN/m²

Table 3

Thickness (mm)	Limitations	Span L (m)												Bearing combination
		4,20	4,50	4,80	5,10	5,40	5,70	6,00	6,30	6,60	6,90	7,20	7,50	
0,65	Moment	3,536	3,08	2,707	2,398	2,139	1,920	1,733	1,572	1,432	1,310	1,203	1,109	 SHEET LOADED ON TWO SUPPORT (SINGLE SECTION)
	Deflection	2,245	1,825	1,504	1,254	1,056	0,898	0,770	0,665	0,578	0,506	0,446	0,394	
	Wind suction	3,890	3,388	2,978	2,638	2,353	2,112	1,906	1,729	1,575	1,441	1,324	1,220	
0,70	Moment	4,328	3,770	3,314	2,935	2,618	2,350	2,121	1,924	1,753	1,604	1,473	1,357	
	Deflection	2,582	2,099	1,729	1,442	1,215	1,033	0,885	0,765	0,665	0,582	0,512	0,453	
	Wind suction	4,761	4,147	3,645	3,229	2,880	2,585	2,333	2,116	1,928	1,764	1,620	1,493	
0,75	Moment	4,844	4,220	3,709	3,285	2,930	2,630	2,374	2,153	1,962	1,795	1,648	1,519	
	Deflection	2,801	2,278	1,877	1,565	1,318	1,121	0,961	0,830	0,722	0,632	0,556	0,492	
	Wind suction	5,329	4,642	4,080	3,614	3,223	2,893	2,611	2,368	2,158	1,974	1,813	1,671	
0,80	Moment	5,364	4,673	4,107	3,638	3,245	2,912	2,629	2,384	2,172	1,988	1,825	1,682	
	Deflection	3,019	2,455	2,023	1,686	1,421	1,208	1,036	0,895	0,778	0,681	0,599	0,530	
	Wind suction	5,901	5,140	4,518	4,002	3,570	3,204	2,891	2,623	2,390	2,186	2,008	1,850	
0,90	Moment	6,596	5,737	5,042	4,467	3,984	3,576	3,227	2,927	2,667	2,440	2,241	2,065	
	Deflection	3,521	2,863	2,359	1,966	1,657	1,409	1,208	1,043	0,907	0,794	0,699	0,618	
	Wind suction	7,245	6,311	5,547	4,913	4,383	3,933	3,550	3,220	2,934	2,684	2,465	2,272	
1,00	Moment	7,659	6,671	5,864	5,194	4,633	4,158	3,753	3,404	3,101	2,838	2,606	2,402	
	Deflection	3,886	3,159	2,603	2,170	1,828	1,555	1,333	1,151	1,001	0,876	0,771	0,682	
	Wind suction	8,424	7,339	6,450	5,713	5,096	4,574	4,128	3,744	3,412	3,121	2,867	2,642	
1,20	Moment	10,050	8,758	7,698	6,819	6,082	5,459	4,926	4,468	4,071	3,725	3,421	3,153	
	Deflection	4,655	3,785	3,119	2,600	2,190	1,862	1,597	1,379	1,200	1,050	0,924	0,818	
	Wind suction	11,060	9,634	8,467	7,501	6,690	6,005	5,419	4,915	4,479	4,098	3,763	3,468	
0,65	Upplag 100	4,20	4,50	4,80	5,10	5,40	5,70	6,00	6,30	6,60	6,90	7,20	7,50	 PSHEET LOADED ON THREE SUPPORT (MULTIPLE SECTION)
	Upplag 200	2,523	2,291	2,092	1,919	1,767	1,633	1,515	1,409	1,315	1,230	1,153	1,084	
	Deflection	3,074	2,776	2,520	2,299	2,107	1,939	1,790	1,659	1,541	1,436	1,342	1,256	
	Wind suction	5,658	4,600	3,790	3,160	2,662	2,263	1,941	1,676	1,458	1,276	1,123	0,994	
0,70	Upplag 100	3,165	2,871	2,617	2,397	2,205	2,036	1,886	1,753	1,634	1,527	1,430	1,343	
	Upplag 200	3,834	3,456	3,134	2,855	2,613	2,402	2,215	2,050	1,903	1,772	1,653	1,547	
	Deflection	6,418	5,218	4,300	3,585	3,020	2,568	2,202	1,902	1,654	1,448	1,274	1,127	
	Wind suction	3,384	3,035	2,739	2,484	2,264	2,073	1,905	1,757	1,625	1,508	1,404	1,310	
0,75	Upplag 100	3,595	3,257	2,967	2,716	2,496	2,303	2,132	1,980	1,845	1,723	1,613	1,513	
	Upplag 200	4,338	3,907	3,539	3,222	2,947	2,706	2,494	2,307	2,140	1,991	1,858	1,737	
	Deflection	6,908	5,617	4,628	3,859	3,250	2,764	2,370	2,047	1,780	1,558	1,371	1,213	
	Wind suction	3,848	3,449	3,110	2,820	2,569	2,351	2,159	1,990	1,841	1,708	1,589	1,482	
0,80	Upplag 100	4,017	3,637	3,310	3,027	2,780	2,563	2,372	2,201	2,049	1,912	1,789	1,678	
	Upplag 200	4,830	4,346	3,933	3,578	3,270	3,000	2,764	2,554	2,368	2,202	2,053	1,919	
	Deflection	7,391	6,009	4,951	4,128	3,477	2,957	2,535	2,190	1,905	1,667	1,467	1,298	
	Wind suction	4,321	3,871	3,489	3,161	2,879	2,633	2,418	2,228	2,060	1,911	1,777	1,657	
0,90	Upplag 100	5,007	4,524	4,111	3,753	3,441	3,168	2,927	2,713	2,522	2,351	2,197	2,058	
	Upplag 200	5,975	5,366	4,847	4,402	4,016	3,680	3,385	3,124	2,893	2,687	2,502	2,336	
	Deflection	8,486	6,899	5,685	4,740	3,993	3,395	2,911	2,514	2,187	1,914	1,684	1,490	
	Wind suction	5,449	4,876	4,39	3,975	3,616	3,305	3,032	2,792	2,580	2,392	2,223	2,072	
1,00	Upplag 100	5,877	5,303	4,812	4,387	4,018	3,695	3,41	3,158	2,933	2,732	2,551	2,388	
	Upplag 200	6,976	6,255	5,643	5,118	4,664	4,269	3,923	3,617	3,347	3,106	2,890	2,696	
	Deflection	9,361	7,611	6,271	5,228	4,404	3,745	3,211	2,774	2,412	2,111	1,858	1,644	
	Wind suction	6,457	5,774	5,195	4,700	4,274	3,903	3,579	3,295	3,043	2,819	2,619	2,44	
1,20	Upplag 100	8,039	7,242	6,562	5,976	5,466	5,021	4,629	4,282	3,973	3,697	3,449	3,226	
	Upplag 200	9,476	8,484	7,643	6,923	6,302	5,761	5,288	4,872	4,503	4,175	3,882	3,619	
	Deflection	11,210	9,117	7,512	6,263	5,276	4,486	3,846	3,322	2,890	2,529	2,226	1,969	
	Wind suction	8,765	7,826	7,032	6,355	5,771	5,266	4,824	4,437	4,094	3,790	3,519	3,276	

Explanations

- Moment Bearing capacity in field, calculated for safety class 2
- Bearer 100 Bearing capacity for intermediate bearer with $l_b = 100$ mm, calculated for safety class 1
- Bearer 200 Bearing capacity for intermediate bearer with $l_b = 200$ mm, calculated for safety class 1
- Deflection Deflection L/200
- Wind suction Bearing capacity for upwardly directed wind load, calculated for safety class 1