

Cross sectional data - Areco TP35

Table 1

Sheet thickness, nominal	t_{nom}	mm	0,50	0,60	0,65	0,70
Sheet thickness, in calculation	t_{ber}	mm	0,451	0,548	0,597	0,646
Yield point	f_{ty}	N/mm ²	280	280	350	350
Mass	m	kg/m	4,80	5,80	6,30	6,80
Dead weight including side overlap	g	kN/m ²	0,048	0,058	0,063	0,068
Bearing resistance $l_s=50$ mm	R_d	kN/m	9,4	13,3	17,3	19,9
Bearing resistance $l_s=100$ mm	R_d	kN/m	12,3	17,3	22,5	25,8
Narrow flange under pressure	M_d	kNm/m	0,77	1,12	1,57	1,74
2:nd moment of area	I_{def}	mm ⁴ /mm	83	107	115	128
Wide flange under pressure	M_d	kNm/m	1,08	1,34	1,82	1,98
2:nd moment of area	I_{def}	mm ⁴ /mm	87	110	119	130

Data for stressed skin calculations - Areco TP35

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_d/V	F_{c2}/V
mm	kN/m	kN/m	kN/m	kN/m		m
0,50	11,5	41,9	50	5,6	0,5	50
0,60	20,1	61,8	68	8,0	0,5	50
0,65	25,6	82	77	11,6	0,5	50
0,70	32,0	96,1	86	13,4	0,5	50

Foot traffic recommended by Areco

Table 3

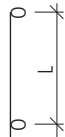
Division into sections	0,50	0,60	0,65
Single section	0,80	1,40	1,60
Multiple section	1,00	1,60	2,40

Areco TP35

ROOF

Maximum loads in kN/m²

Table 4

Thickness (mm)	Limitations	Span L (m)										Bearing combination
		0,60	0,90	1,20	1,50	1,80	2,10	2,40	2,70	3,00	3,30	
0,50	Moment	15,630	6,947	3,908	2,501	1,737	1,276	0,977	0,772	0,625	0,517	 SHEET LOADED ON TWO SUPPORT
	Deflection	68,680	20,35	8,585	4,396	2,544	1,602	1,073	0,754	0,549	0,413	
	Wind suction	17,190	7,642	4,299	2,751	1,911	1,404	1,075	0,849	0,688	0,568	
0,60	Moment	22,550	10,020	5,636	3,607	2,505	1,840	1,409	1,113	0,902	0,745	
	Deflection	88,530	26,230	11,070	5,666	3,279	2,065	1,383	0,972	0,708	0,532	
	Wind suction	24,800	11,020	6,200	3,968	2,756	2,025	1,550	1,225	0,992	0,820	
0,65	Moment	31,620	14,050	7,904	5,059	3,513	2,581	1,976	1,561	1,265	1,045	
	Deflection	95,690	28,350	11,960	6,124	3,544	2,232	1,495	1,050	0,766	0,575	
	Wind suction	34,780	15,460	8,695	5,565	3,864	2,839	2,174	1,718	1,391	1,150	
0,70	Moment	35,230	15,660	8,807	5,637	3,914	2,876	2,202	1,740	1,409	1,165	
	Deflection	106,100	31,430	13,260	6,789	3,929	2,474	1,657	1,164	0,849	0,638	
	Wind suction	38,750	17,220	9,688	6,200	4,306	3,163	2,422	1,914	1,550	1,281	
0,50		0,60	0,90	1,20	1,50	1,80	2,10	2,40	2,70	3,00	3,30	 SHEET LOADED ON THREE SUPPORT
	Bearer 50	10,050	5,660	3,674	2,590	1,930	1,495	1,194	0,976	0,813	0,688	
	Bearer 100	13,300	7,132	4,472	3,074	2,246	1,714	1,351	1,093	0,902	0,75	
	Deflection	171,100	50,690	21,390	10,950	6,336	3,990	2,673	1,877	1,369	1,028	
	Wind suction	11,060	6,225	4,041	2,849	2,123	1,645	1,314	1,074	0,894	0,757	
0,60	Bearer 50	13,680	7,587	4,871	3,407	2,522	1,944	1,546	1,259	1,046	0,882	
	Bearer 100	18,050	9,500	5,886	4,011	2,911	2,210	1,736	1,399	1,130	0,930	
	Deflection	217,100	64,320	27,140	13,89	8,04	5,063	3,392	2,382	1,737	1,305	
	Wind suction	15,050	8,346	5,358	3,747	2,774	2,139	1,700	1,385	1,150	0,971	
0,65	Bearer 50	18,050	10,050	6,476	4,540	3,366	2,599	2,069	1,687	1,402	1,184	
	Bearer 100	23,760	12,580	7,825	5,348	3,890	2,958	2,326	1,877	1,532	1,261	
	Deflection	235,100	69,670	29,390	15,050	8,709	5,484	3,674	2,580	1,881	1,413	
	Wind suction	19,850	11,060	7,123	4,993	3,703	2,859	2,276	1,856	1,543	1,303	
0,70	Bearer 50	20,420	11,310	7,250	5,066	3,747	2,887	2,295	1,868	1,551	1,309	
	Bearer 100	26,850	14,110	8,735	5,949	4,316	3,276	2,572	2,072	1,670	1,375	
	Deflection	259,000	76,730	32,370	16,570	9,591	6,040	4,046	2,842	2,072	1,556	
	Wind suction	22,460	12,440	7,975	5,573	4,122	3,176	2,524	2,055	1,706	1,440	
0,50		0,60	0,90	1,20	1,50	1,80	2,10	2,40	2,70	3,00	3,30	 SHEET LOADED ON FOUR SUPPORT
	Bearer 50	11,820	6,716	4,389	3,111	2,327	1,810	1,449	1,187	0,991	0,840	
	Bearer 100	15,820	8,561	5,404	3,732	2,736	2,094	1,654	1,341	1,109	0,932	
	Deflection	134,300	39,800	16,790	8,597	4,975	3,133	2,099	1,474	1,075	0,807	
	Wind suction	13,000	7,388	4,828	3,422	2,560	1,991	1,594	1,306	1,090	0,924	
0,60	Bearer 50	16,140	9,036	5,841	4,106	3,052	2,360	1,881	1,536	1,278	1,08	
	Bearer 100	21,560	11,450	7,140	4,887	3,559	2,709	2,131	1,721	1,419	1,167	
	Deflection	170,500	50,510	21,310	10,91	6,313	3,976	2,663	1,871	1,364	1,025	
	Wind suction	17,750	9,940	6,425	4,517	3,357	2,596	2,070	1,689	1,406	1,188	
0,65	Bearer 50	21,270	11,960	7,757	5,466	4,07	3,153	2,517	2,056	1,713	1,449	
	Bearer 100	28,330	15,150	9,481	6,508	4,750	3,621	2,853	2,307	1,904	1,582	
	Deflection	184,600	54,700	23,080	11,820	6,838	4,306	2,885	2,026	1,447	1,110	
	Wind suction	23,400	13,160	8,532	6,013	4,477	3,468	2,768	2,262	1,884	1,594	
0,70	Bearer 50	24,100	13,470	8,697	6,108	4,536	3,507	2,794	2,280	1,896	1,602	
	Bearer 100	32,070	17,020	10,600	7,251	5,277	4,015	3,158	2,550	2,097	1,726	
	Deflection	203,300	60,250	25,420	13,010	7,531	4,742	3,177	2,231	1,627	1,222	
	Wind suction	26,510	14,820	9,567	6,719	4,990	3,857	3,074	2,508	2,086	1,763	

Explanations

Moment Bearing capacity in field, calculated for safety class 2
 Bearer 50 Bearing capacity for intermediate bearer with $l_b = 50$ mm, calculated for safety class 2
 Bearer 100 Bearing capacity for intermediate bearer with $l_b = 100$ mm, calculated for safety class 2
 Deflection Deflection $L/90$
 Wind suction Bearing capacity for upwardly directed wind load, calculated for safety class 1