

FP2S PV-Shelter Wind tables



 **Atkore™**



Step-by-step

Wind tables are used to determine the appropriate installation and safety measures for Vergokan FP2S.2.1500 in outdoor environments, particularly in areas where wind exposure is a concern. These tables provide guidance on the required weight based on wind load calculations, windtunnel tests and CFD-analyses.

This document elaborates on the first step indicated in the Prescription of placement document for the FP2S shelter. Defining the required ballast for the shelter is thus only one of the steps to ensure safe installation. Please consult the prescription of placement document to consult the other required steps.

Here's a step-by-step explanation on how to use wind tables for Vergokan's Flat Pack to Shelter (FP2S.2.1500).

1. Gather Information:

Start by collecting the necessary information for your installation. You'll need to know the specific characteristics of the location where you plan to install the Vergokan Solar Shelter. Key factors include:

- The terrain category of a specific geographical location is defined by the worst terrain category (0 = worst; IV = best) within a certain distance from that location (Table 1). The distance to take into account should be equal to the roughness length (Table 2), which is based on the height of the building. For example for a building with a height of 25m you should look for the worst terrain category within a distance of 1095m around the building. (0, I, II, III, IV)
- The basic windspeed of the geographical location ($V_{b,0}$)
- The installation height of the shelter on the roof (relative height compared to ground level*)

TABLE 1: TERRAIN CATEGORIE

Terrain category	
0	Sea, direct seawinds
I	Flat, horizontal areas without obstacles
II	Rural areas with isolated obstacles
III	Villages, précities, industry, woods
IV	Cities

TABLE 2: ROUGHNESS LENGTH TO DEFINE TERRAIN CATEGORY

Height of building (m)	Roughness length (m)
0	300
5	300
10	365
15	593
20	837
25	1095
30	1362
35	1639
40	1924
45	2216
50	2515

Wind tables

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2. Consult the Wind Tables:

Consult the wind tables provided in this document. The wind tables contain the required weight to withstand windloading for a specified terrain category, basic windspeed and installation height. The results in the tables are based on a combination of theoretical calculations, practical windtunnel tests and CFD-analyses to ensure safe installation of Vergokan FP2S.2.1500 solar shelters.

The total weight of the solar shelter, inverter and extra loading combined must be larger than, or equal to the weight noted in the wind tables.

3. Document Compliance:

Maintain records of the wind speed data, exposure category, and calculations used for your specific installation. This documentation can be valuable for compliance purposes and future reference.

By following these steps and consulting the wind tables provided by Vergokan, you can ensure the safe and effective installation of FP2S.2.1500 solar shelters in outdoor environments with varying wind conditions. Always prioritize safety and compliance with local regulations when working with FP2S.2.1500 solar shelters in exposed outdoor settings.

* Important to notice is that the provided windtables only account when the slope of terrain around the building is smaller than 5°.

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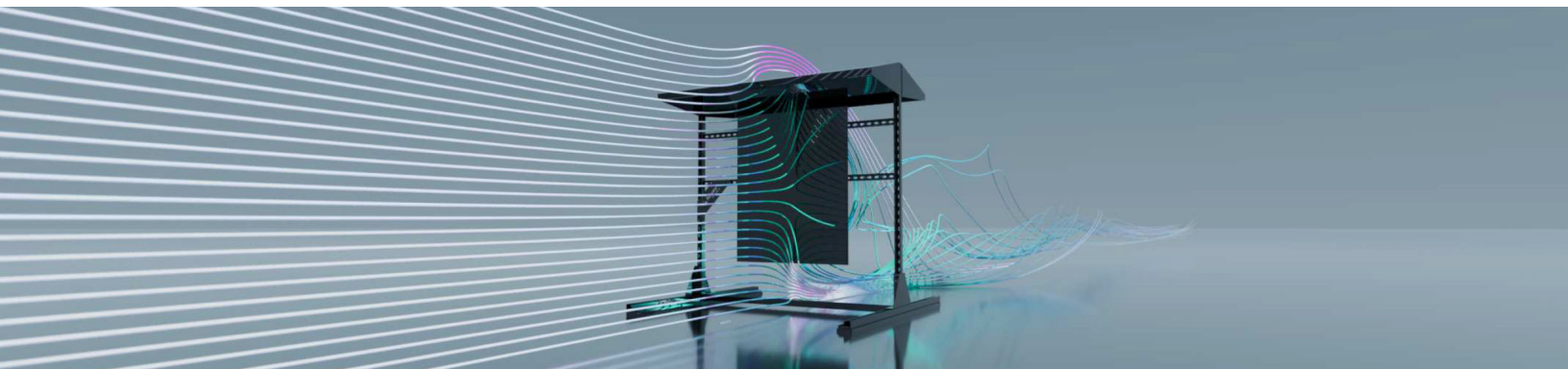
Terrain category	II	II	II	II	II	II	II	II	II	III	III	III	III	III	III	III	III	III				
Height	0	5	10	15	20	25	30	35	40	45	50	0	5	10	15	20	25	30	35	40	45	50
20	173	235	287	319	342	361	377	390	402	413	422	150	150	201	233	257	277	293	307	319	330	340
21	191	259	316	351	377	398	415	430	443	455	466	166	166	222	257	284	305	323	338	352	364	375
22	210	284	347	386	414	437	456	472	487	500	511	182	182	244	283	312	335	354	371	386	400	412
23	229	311	379	421	453	478	498	516	532	546	559	199	199	266	309	341	366	387	406	422	437	450
24	250	338	413	459	493	520	543	562	579	595	608	217	217	290	336	371	399	422	442	460	475	490
25	271	367	448	498	535	564	589	610	629	645	660	235	235	314	365	402	432	458	479	499	516	532
26	293	397	484	538	578	610	637	660	680	698	714	254	254	340	395	435	468	495	519	539	558	575
27	316	428	522	581	624	658	687	711	733	752	770	274	274	367	426	469	504	534	559	582	602	620
28	340	461	562	625	671	708	739	765	788	809	828	295	295	394	458	505	542	574	601	626	647	667
29	365	494	602	670	720	759	792	821	846	868	888	316	316	423	491	541	582	616	645	671	694	715
30	390	529	645	717	770	813	848	878	905	929	951	339	339	453	525	579	623	659	690	718	743	765
31	417	565	688	765	822	868	905	938	966	992	1015	361	361	484	561	619	665	704	737	767	793	817
32	444	602	734	816	876	924	965	999	1030	1057	1081	385	385	515	598	659	708	750	786	817	845	871
33	472	640	780	867	932	983	1026	1063	1095	1124	1150	410	410	548	636	701	753	797	835	869	899	926
34	501	679	828	921	989	1044	1089	1128	1162	1193	1221	435	435	582	675	744	800	846	887	922	954	983
35	531	720	877	976	1048	1106	1154	1195	1232	1264	1294	461	461	616	715	789	848	897	940	977	1011	1042
36	562	761	928	1032	1109	1170	1221	1265	1303	1338	1369	487	487	652	757	834	897	949	994	1034	1070	1102
37	593	804	981	1090	1171	1236	1290	1336	1377	1413	1446	515	515	689	799	881	947	1002	1050	1092	1130	1164
38	626	848	1034	1150	1236	1304	1360	1409	1452	1490	1525	543	543	727	843	930	999	1057	1108	1152	1192	1228
39	659	894	1090	1212	1301	1373	1433	1484	1530	1570	1606	572	572	765	888	979	1052	1114	1167	1214	1255	1293



Terrain category IV

Terrain category	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV
Height	0	5	10	15	20	25	30	35	40	45	50		
20	127	127	127	157	179	197	213	226	238	248	258		
21	140	140	140	173	198	218	235	249	262	274	284		
22	154	154	154	190	217	239	257	274	288	301	312		
23	168	168	168	207	237	261	281	299	315	329	341		
24	183	183	183	226	258	284	306	325	342	358	372		
25	199	199	199	245	280	308	332	353	372	388	403		
26	215	215	215	265	303	334	360	382	402	420	436		
27	232	232	232	286	327	360	388	412	433	453	470		
28	249	249	249	307	351	387	417	443	466	487	506		
29	267	267	267	330	377	415	447	475	500	522	543		
30	286	286	286	353	403	444	479	509	535	559	581		
31	305	305	305	377	431	474	511	543	571	597	620		
32	325	325	325	401	459	505	545	579	609	636	661		
33	346	346	346	427	488	537	579	615	647	676	703		
34	367	367	367	453	518	570	615	653	687	718	746		
35	389	389	389	480	549	605	651	692	728	761	790		
36	412	412	412	508	581	640	689	732	771	805	836		
37	435	435	435	537	613	676	728	774	814	850	883		
38	459	459	459	566	647	713	768	816	859	897	932		
39	483	483	483	596	682	751	809	860	904	945	981		
40	508	508	508	627	717	790	851	904	951	994	1032		
41	534	534	534	659	753	830	894	950	999	1044	1084		
42	560	560	560	692	790	871	938	997	1049	1095	1138		
43	588	588	588	725	829	912	983	1045	1099	1148	1193		
44	615	615	615	759	868	955	1030	1094	1151	1202	1249		
45	643	643	643	794	907	999	1077	1144	1204	1258	1306		
46	672	672	672	830	948	1044	1125	1196	1258	1314	1365		
47	702	702	702	866	990	1090	1175	1248	1313	1372	1425		
48	732	732	732	903	1032	1137	1225	1302	1370	1431	1486		
49	763	763	763	941	1076	1185	1277	1357	1428	1491	1549		
50	794	794	794	980	1120	1234	1330	1413	1486	1553	1613		

Required total weight (kg) FP2S.2.1500 Shelter (SF = 1,35) (=weight shelter + weight converter + extra weight)



Liability Policy for FP2S Solar Shelter Installation

This document is provided under the stipulation that the product(s) are utilized as intended and/or in compliance with prevailing installation standards and the manufacturer's recommendations. Although we have performed wind load testing in accordance with industry standards (NBN EN1991-1-4) and employed best practices such as wind tunnel tests and CFD analyses, there are variables influencing these test outcomes that may be outside our control. Should any uncertainty arise, kindly reach out to our engineering department for tailored guidance.



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Atkore Vergokan

Meersbloem-Melden 16
9700 Oudenaarde
Belgium

+32 55 31 83 35

atkore.com/vergokan