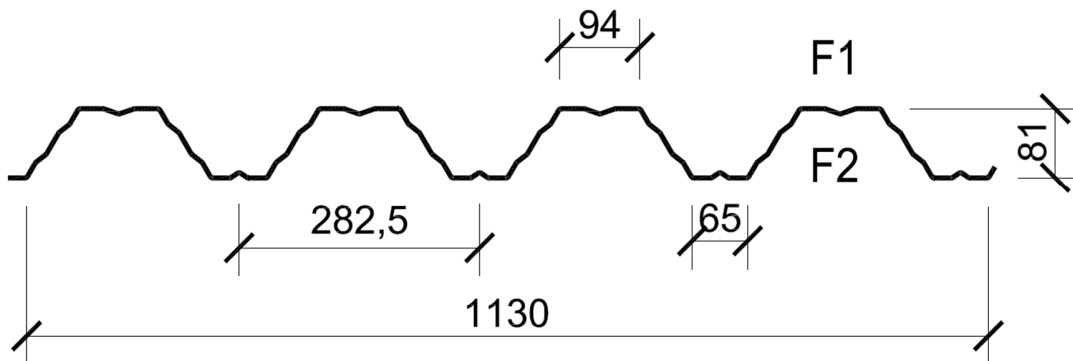


**TECHNICAL DATA SHEET  
OF THE PROFILE  
Hacierco<sup>®</sup> 85/280**

## Hacierco<sup>®</sup> 85/280



### Technical parameters:

Coil width:	1500 mm
Profile width:	1130 mm
Steel grade:	S320GD, S350GD according to EN 10346
Thickness:	0.75; 0.88; 1.00; 1.13; 1.25; 1.50mm according to EN 10143
Metallic coating:	ZM 60, ZM80, ZM100, ZM120, ZM175, ZM275 or Z100, 140, 200, 225, 275, 350 according to EN 10346
Organic coating:	Interieur (DU912, DU901), Hairplus, Hairultra, Hairflon, Keyron, Hairexcel, Sinea, (etc. acc. to Material guide), according to EN 10169
Max. length:	16,5 m
Min. length:	2 m



Product is in conformity with the provisions of EC Directive 89/106/EEC (Constructions Products Directive) and that the harmonized standards referenced below have been applied: EN 1090-1:2009 + A1:2011, EN 1090-2:2008 + A1:2011.

## Design principles of ArcelorMittal Construction profiled sheeting

This short note gives information about the use of design tables (calculated for non-perforated profile TR 85/280 – Tests TU Košice 7/2023).

The design table give the maximum design loads assuming partial safety factors for resistance  $\gamma_{M0} = 1,0$  and  $\gamma_{M1} = 1,0$ . The presentation of the design table is shown as below:

Thickness	Limit states	Span (m) - Support width : 40mm / 40mm					
		3,00	3,25	3,50	3,75	4,00	5,00
0,75	ULS	6,146	5,237	4,516	3,934	3,457	2,213
	SLS_PD	4,780	4,412	4,064	3,540	3,112	1,991
	200	2,918	2,295	1,838	1,494	1,231	0,630
	300	1,945	1,530	1,225	0,996	0,821	0,420
	500	1,167	0,918	0,735	0,598	0,492	0,252

Thickness = Nominal thickness of steel profiles

- ULS = Ultimate limit state (considering moment redistribution for multi-spans)
- SLS\_PD = Plastic deformation in serviceability limit state (SLS)
- 200 =  $L/200$  limit of deflection in serviceability limit state, where  $L$  is the span
- 300 =  $L/300$  limit of deflection in serviceability limit state
- 500 =  $L/500$  limit of deflection in serviceability limit state

Support width:

- 40 mm / 40 mm = 40 mm minimum width of end supports (single span)
- 40 mm / 60 mm / 40 mm = 40 mm minimum width of end supports and 60 mm minimum width of internal support (double span)
- 40 mm / 60 mm / 60 mm / 40 mm = 40 mm minimum width of end supports and 60 mm minimum width of internal supports (three spans)
- 90 mm / 90 mm = 90 mm minimum width of end supports (single span)
- 90 mm / 160 mm / 90 mm = 90 mm minimum width of end supports and 160 mm minimum width of internal support (double span)
- 90 mm / 160 mm / 160 mm / 90 mm = 90 mm minimum width of end supports and 160 mm minimum width of internal supports (three spans)

All resistances are given for uniform load in  $\text{kN/m}^2$  (pressure from the top of the profile) for positive position of the sheeting only (wider flange on top).

Example how to use the design table.

Project data:

- Double span system, span  $L = 4,5$  m
- Internal support width:  $b_{int} = 60$  mm
- End support width:  $b_{End} = 40$  mm
- Limit of deflection :  $L/200$

Load cases	Load factor	Uniform characteristic load (kN/m <sup>2</sup> )	Uniform design load (kN/m <sup>2</sup> )
Self weight of profile	1,35	0,11	0.15
Additional permanent load	1,35	0,25	0.34
Variable load	1,50	0,70	1.05
Total		1,06	1,54

The table of the profile TR 85/280 S320GD (Double span (m) - Support width : 40mm / 60mm / 40mm) is given below:

Thickness	Limit states	Span
		L = 4,5
0,75	ULS	2,498
	SLS_PD	1,635
	200	2,139
	300	1,426
	500	2,498

Checkings:

- Ultimate limit state:  
 $q_{Rd(ULS)} = 2,498 \text{ kN/m}^2 \geq q_{Ed} = 1,54 \text{ kN/m}^2$  Satisfied
- Serviceability limit state (criteria of both elastic behavior and deflection limit should be checked):  
 $q_{Rk(SLS\_PD)} = 1,635 \text{ kN/m}^2 \geq q_{Ek} = 1,06 \text{ kN/m}^2$  Satisfied  
 $q_{Rk(200)} = 2,139 \text{ kN/m}^2 \geq q_{Ek} = 1,06 \text{ kN/m}^2$  Satisfied

The verification of the profile: TR 85/280/0,75 S320GD is satisfied.

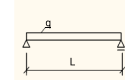


Design tables of profile **Hacierco® 85/280**

Steel grade: **S320GD**

Pressure

Single span



Thickness	Limit states	Span (m) - Support width : 40mm / 40mm																				
		1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00	5,25	5,50	5,75	6,00	6,25	6,50
0,75	ULS	17,79	15,25	12,64	9,99	8,09	6,69	5,62	4,79	4,13	3,60	3,16	2,80	2,50	2,24	2,02	1,83	1,67	1,53	1,40	1,29	1,20
	SLS_PD	8,74	7,49	6,56	5,83	5,24	4,77	4,37	4,03	3,72	3,24	2,84	2,52	2,25	2,02	1,82	1,65	1,50	1,38	1,26	1,17	1,08
	200	23,34	14,70	9,85	6,92	5,04	3,79	2,92	2,29	1,84	1,49	1,23	1,03	0,86	0,74	0,63	0,54	0,47	0,41	0,36	0,32	0,29
	300	15,56	9,80	6,57	4,61	3,36	2,53	1,95	1,53	1,23	1,00	0,82	0,68	0,58	0,49	0,42	0,36	0,32	0,28	0,24	0,22	0,19
	500	9,34	5,88	3,94	2,77	2,02	1,52	1,17	0,92	0,74	0,60	0,49	0,41	0,35	0,29	0,25	0,22	0,19	0,17	0,15	0,13	0,11
0,88	ULS	20,83	17,85	15,62	12,57	10,19	8,42	7,07	6,03	5,20	4,53	3,98	3,52	3,14	2,82	2,55	2,31	2,10	1,93	1,77	1,63	1,51
	SLS_PD	11,06	9,48	8,29	7,37	6,63	6,03	5,53	5,10	4,68	4,07	3,58	3,17	2,83	2,54	2,29	2,08	1,89	1,73	1,59	1,47	1,36
	200	26,83	16,90	11,32	7,95	5,80	4,35	3,35	2,64	2,11	1,72	1,41	1,18	0,99	0,84	0,72	0,63	0,54	0,48	0,42	0,37	0,33
	300	17,89	11,26	7,55	5,30	3,86	2,90	2,24	1,76	1,41	1,14	0,94	0,79	0,66	0,56	0,48	0,42	0,36	0,32	0,28	0,25	0,22
	500	10,73	6,76	4,53	3,18	2,32	1,74	1,34	1,06	0,84	0,69	0,57	0,47	0,40	0,34	0,29	0,25	0,22	0,19	0,17	0,15	0,13
1,00	ULS	23,63	20,26	17,72	14,96	12,12	10,01	8,41	7,17	6,18	5,39	4,73	4,19	3,74	3,36	3,03	2,75	2,50	2,29	2,10	1,94	1,79
	SLS_PD	13,20	11,31	9,90	8,80	7,92	7,20	6,60	6,09	5,56	4,85	4,26	3,77	3,37	3,02	2,73	2,47	2,25	2,06	1,89	1,74	1,61
	200	30,05	18,92	12,68	8,90	6,49	4,88	3,76	2,95	2,37	1,92	1,58	1,32	1,11	0,95	0,81	0,70	0,61	0,53	0,47	0,42	0,37
	300	20,03	12,62	8,45	5,94	4,33	3,25	2,50	1,97	1,58	1,28	1,06	0,88	0,74	0,63	0,54	0,47	0,41	0,36	0,31	0,28	0,25
	500	12,02	7,57	5,07	3,56	2,60	1,95	1,50	1,18	0,95	0,77	0,63	0,53	0,45	0,38	0,32	0,28	0,24	0,21	0,19	0,17	0,15
1,13	ULS	27,91	23,92	20,93	17,80	14,42	11,92	10,01	8,53	7,36	6,41	5,63	4,99	4,45	3,99	3,61	3,27	2,98	2,73	2,50	2,31	2,13
	SLS_PD	17,84	15,29	13,38	11,89	10,70	9,73	8,92	7,68	6,62	5,77	5,07	4,49	4,01	3,60	3,24	2,94	2,68	2,45	2,25	2,08	1,92
	200	34,32	21,61	14,48	10,17	7,41	5,57	4,29	3,37	2,70	2,20	1,81	1,51	1,27	1,08	0,93	0,80	0,70	0,61	0,54	0,47	0,42
	300	22,88	14,41	9,65	6,78	4,94	3,71	2,86	2,25	1,80	1,46	1,21	1,01	0,85	0,72	0,62	0,53	0,46	0,41	0,36	0,32	0,28
	500	13,73	8,65	5,79	4,07	2,97	2,23	1,72	1,35	1,08	0,88	0,72	0,60	0,51	0,43	0,37	0,32	0,28	0,24	0,21	0,19	0,17
1,25	ULS	31,86	27,31	23,89	20,43	16,55	13,68	11,49	9,79	8,44	7,35	6,46	5,73	5,11	4,58	4,14	3,75	3,42	3,13	2,87	2,65	2,45
	SLS_PD	22,13	18,97	16,60	14,75	13,28	12,07	10,34	8,81	7,60	6,62	5,82	5,15	4,60	4,13	3,72	3,38	3,08	2,82	2,59	2,38	2,20
	200	38,26	24,10	16,14	11,34	8,27	6,21	4,78	3,76	3,01	2,45	2,02	1,68	1,42	1,20	1,03	0,89	0,78	0,68	0,60	0,53	0,47
	300	25,51	16,06	10,76	7,56	5,51	4,14	3,19	2,51	2,01	1,63	1,35	1,12	0,94	0,80	0,69	0,59	0,52	0,45	0,40	0,35	0,31
	500	15,31	9,64	6,46	4,53	3,31	2,48	1,91	1,50	1,20	0,98	0,81	0,67	0,57	0,48	0,41	0,36	0,31	0,27	0,24	0,21	0,19
1,50	ULS	38,44	32,95	28,83	24,65	19,97	16,50	13,87	11,81	10,19	8,87	7,80	6,91	6,16	5,53	4,99	4,53	4,13	3,77	3,47	3,19	2,95
	SLS_PD	26,70	22,89	20,02	17,80	16,02	14,56	12,48	10,63	9,17	7,99	7,02	6,22	5,55	4,98	4,49	4,07	3,71	3,40	3,12	2,88	2,66
	200	46,17	29,07	19,48	13,68	9,97	7,49	5,77	4,54	3,63	2,95	2,43	2,03	1,71	1,45	1,25	1,08	0,94	0,82	0,72	0,64	0,57
	300	30,78	19,38	12,99	9,12	6,65	5,00	3,85	3,03	2,42	1,97	1,62	1,35	1,14	0,97	0,83	0,72	0,62	0,55	0,48	0,43	0,38
	500	18,47	11,63	7,79	5,47	3,99	3,00	2,31	1,82	1,45	1,18	0,97	0,81	0,68	0,58	0,50	0,43	0,37	0,33	0,29	0,26	0,23

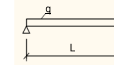


Design tables of profile **Hacierco® 85/280**

Steel grade: **S320GD**

Pressure

Single span



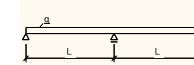
Thickness	Limit states	Span (m) - Support width : 90mm / 90mm																				
		1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00	5,25	5,50	5,75	6,00	6,25	6,50
0,75	ULS	19,929	16,515	12,644	9,990	8,092	6,688	5,620	4,788	4,129	3,597	3,161	2,800	2,498	2,242	2,023	1,835	1,672	1,530	1,405	1,295	1,197
	SLS_PD	13,692	11,736	10,269	8,991	7,283	6,019	5,058	4,310	3,716	3,237	2,845	2,520	2,248	2,017	1,821	1,651	1,505	1,377	1,264	1,165	1,077
	200	23,343	14,700	9,848	6,916	5,042	3,788	2,918	2,295	1,838	1,494	1,231	1,026	0,865	0,735	0,630	0,544	0,474	0,414	0,365	0,323	0,287
	300	15,562	9,800	6,565	4,611	3,361	2,525	1,945	1,530	1,225	0,996	0,821	0,684	0,576	0,490	0,420	0,363	0,316	0,276	0,243	0,215	0,191
	500	9,337	5,880	3,939	2,767	2,017	1,515	1,167	0,918	0,735	0,598	0,492	0,411	0,346	0,294	0,252	0,218	0,189	0,166	0,146	0,129	0,115
0,88	ULS	24,312	20,786	15,915	12,574	10,185	8,418	7,073	6,027	5,197	4,527	3,979	3,524	3,144	2,821	2,546	2,310	2,104	1,925	1,768	1,630	1,507
	SLS_PD	16,979	14,554	12,734	11,317	9,167	7,576	6,366	5,424	4,677	4,074	3,581	3,172	2,829	2,539	2,292	2,079	1,894	1,733	1,591	1,467	1,356
	200	26,831	16,897	11,319	7,950	5,796	4,354	3,354	2,638	2,112	1,717	1,415	1,180	0,994	0,845	0,724	0,626	0,544	0,476	0,419	0,371	0,330
	300	17,887	11,264	7,546	5,300	3,864	2,903	2,236	1,759	1,408	1,145	0,943	0,786	0,662	0,563	0,483	0,417	0,363	0,318	0,279	0,247	0,220
	500	10,732	6,759	4,528	3,180	2,318	1,742	1,342	1,055	0,845	0,687	0,566	0,472	0,397	0,338	0,290	0,250	0,218	0,191	0,168	0,148	0,132
1,00	ULS	28,359	24,308	18,933	14,960	12,117	10,014	8,415	7,170	6,182	5,385	4,733	4,193	3,740	3,357	3,029	2,748	2,504	2,291	2,104	1,939	1,792
	SLS_PD	20,014	17,155	15,010	13,342	10,906	9,013	7,573	6,453	5,564	4,847	4,260	3,774	3,366	3,021	2,726	2,473	2,253	2,062	1,893	1,745	1,613
	200	30,051	18,924	12,678	8,904	6,491	4,877	3,756	2,954	2,366	1,923	1,585	1,321	1,113	0,946	0,811	0,701	0,610	0,533	0,470	0,415	0,369
	300	20,034	12,616	8,452	5,936	4,327	3,251	2,504	1,970	1,577	1,282	1,056	0,881	0,742	0,631	0,541	0,467	0,406	0,356	0,313	0,277	0,246
	500	12,020	7,570	5,071	3,562	2,596	1,951	1,503	1,182	0,946	0,769	0,634	0,528	0,445	0,379	0,325	0,280	0,244	0,213	0,188	0,166	0,148
1,13	ULS	34,360	29,431	22,533	17,804	14,421	11,918	10,015	8,533	7,358	6,409	5,633	4,990	4,451	3,995	3,605	3,270	2,980	2,726	2,504	2,307	2,133
	SLS_PD	28,279	24,239	20,280	16,024	12,979	10,727	9,013	7,680	6,622	5,768	5,070	4,491	4,006	3,595	3,245	2,943	2,682	2,454	2,253	2,077	1,920
	200	34,322	21,614	14,479	10,169	7,413	5,570	4,290	3,374	2,702	2,197	1,810	1,509	1,271	1,081	0,927	0,801	0,696	0,609	0,536	0,474	0,422
	300	22,881	14,409	9,653	6,780	4,942	3,713	2,860	2,250	1,801	1,464	1,207	1,006	0,847	0,721	0,618	0,534	0,464	0,406	0,358	0,316	0,281
	500	13,729	8,645	5,792	4,068	2,965	2,228	1,716	1,350	1,081	0,879	0,724	0,604	0,508	0,432	0,371	0,320	0,278	0,244	0,215	0,190	0,169
1,25	ULS	39,898	33,771	25,856	20,429	16,548	13,676	11,492	9,792	8,443	7,355	6,464	5,726	5,107	4,584	4,137	3,752	3,419	3,128	2,873	2,648	2,448
	SLS_PD	35,909	30,394	23,270	18,387	14,893	12,308	10,342	8,812	7,599	6,619	5,818	5,153	4,597	4,126	3,723	3,377	3,077	2,815	2,586	2,383	2,203
	200	38,264	24,096	16,143	11,337	8,265	6,210	4,783	3,762	3,012	2,449	2,018	1,682	1,417	1,205	1,033	0,892	0,776	0,679	0,598	0,529	0,470
	300	25,509	16,064	10,762	7,558	5,510	4,140	3,189	2,508	2,008	1,633	1,345	1,122	0,945	0,803	0,689	0,595	0,517	0,453	0,399	0,353	0,313
	500	15,306	9,639	6,457	4,535	3,306	2,484	1,913	1,505	1,205	0,980	0,807	0,673	0,567	0,482	0,413	0,357	0,310	0,272	0,239	0,212	0,188
1,50	ULS	48,142	40,749	31,198	24,650	19,967	16,502	13,866	11,815	10,187	8,874	7,800	6,909	6,163	5,531	4,992	4,528	4,125	3,774	3,466	3,195	2,954
	SLS_PD	43,328	36,674	28,078	22,185	17,970	14,851	12,479	10,633	9,168	7,987	7,020	6,218	5,546	4,978	4,493	4,075	3,713	3,397	3,120	2,875	2,658
	200	46,170	29,075	19,478	13,680	9,973	7,493	5,771	4,539	3,634	2,955	2,435	2,030	1,710	1,454	1,247	1,077	0,937	0,820	0,721	0,638	0,567
	300	30,780	19,383	12,985	9,120	6,648	4,995	3,847	3,026	2,423	1,970	1,623	1,353	1,140	0,969	0,831	0,718	0,624	0,546	0,481	0,426	0,378
	500	18,468	11,630	7,791	5,472	3,989	2,997	2,308	1,816	1,454	1,182	0,974	0,812	0,684	0,582	0,499	0,431	0,375	0,328	0,289	0,255	0,227

Design tables of profile **Hacierco® 85/280**

Steel grade: **S320GD**

Pressure

Double spans



Thickness	Limit states	Span (m) - Support width : 40mm / 60mm / 40mm																				
		1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00	5,25	5,50	5,75	6,00	6,25	6,50
0,75	ULS	17,786	15,245	12,644	9,990	8,092	6,688	5,620	4,788	4,129	3,597	3,161	2,800	2,498	2,242	2,023	1,835	1,672	1,530	1,405	1,295	1,197
	SLS_PD	7,612	6,069	5,006	4,240	3,656	3,291	2,986	2,730	2,509	2,237	2,004	1,809	1,635	1,493	1,364	1,250	1,145	1,055	0,969	0,893	0,826
	200	57,750	36,367	24,363	17,111	12,474	9,372	7,219	5,678	4,546	3,696	3,045	2,539	2,139	1,819	1,559	1,347	1,171	1,025	0,902	0,798	0,710
	300	38,500	24,245	16,242	11,407	8,316	6,248	4,812	3,785	3,031	2,464	2,030	1,693	1,426	1,212	1,039	0,898	0,781	0,683	0,602	0,532	0,473
0,88	ULS	23,100	14,547	9,745	6,844	4,990	3,749	2,887	2,271	1,818	1,478	1,218	1,016	0,856	0,727	0,624	0,539	0,469	0,410	0,361	0,319	0,284
	SLS_PD	9,738	7,918	6,642	5,706	4,983	4,344	3,833	3,421	3,074	2,782	2,528	2,314	2,120	1,944	1,784	1,643	1,513	1,394	1,280	1,180	1,091
	200	66,379	41,801	28,004	19,668	14,338	10,772	8,297	6,526	5,225	4,248	3,500	2,918	2,458	2,090	1,792	1,548	1,347	1,178	1,037	0,918	0,816
	300	44,253	27,868	18,669	13,112	9,559	7,182	5,532	4,351	3,483	2,832	2,334	1,946	1,639	1,394	1,195	1,032	0,898	0,786	0,691	0,612	0,544
1,00	ULS	26,552	16,721	11,201	7,867	5,735	4,309	3,319	2,610	2,090	1,699	1,400	1,167	0,983	0,836	0,717	0,619	0,539	0,471	0,415	0,367	0,326
	SLS_PD	11,700	9,625	8,152	7,060	6,208	5,315	4,614	4,057	3,595	3,284	3,012	2,779	2,567	2,360	2,172	2,006	1,853	1,706	1,566	1,444	1,335
	200	74,345	46,818	31,364	22,028	16,058	12,065	9,293	7,309	5,852	4,758	3,921	3,269	2,754	2,341	2,007	1,734	1,508	1,320	1,162	1,028	0,914
	300	49,563	31,212	20,909	14,685	10,706	8,043	6,195	4,873	3,901	3,172	2,614	2,179	1,836	1,561	1,338	1,156	1,005	0,880	0,774	0,685	0,609
1,13	ULS	29,738	18,727	12,546	8,811	6,423	4,826	3,717	2,924	2,341	1,903	1,568	1,307	1,101	0,936	0,803	0,694	0,603	0,528	0,465	0,411	0,365
	SLS_PD	14,934	11,901	9,816	8,313	7,172	6,169	5,378	4,748	4,224	3,859	3,540	3,267	3,019	2,777	2,558	2,365	2,186	2,012	1,848	1,703	1,574
	200	84,910	53,471	35,822	25,159	18,341	13,780	10,614	8,348	6,684	5,434	4,478	3,733	3,145	2,674	2,293	1,980	1,722	1,507	1,327	1,174	1,044
	300	56,607	35,648	23,881	16,772	12,227	9,186	7,076	5,565	4,456	3,623	2,985	2,489	2,097	1,783	1,528	1,320	1,148	1,005	0,884	0,783	0,696
1,25	ULS	33,964	21,389	14,329	10,063	7,336	5,512	4,246	3,339	2,674	2,174	1,791	1,493	1,258	1,070	0,917	0,792	0,689	0,603	0,531	0,470	0,417
	SLS_PD	17,920	14,001	11,352	9,470	8,062	6,957	6,083	5,386	4,805	4,390	4,027	3,717	3,436	3,162	2,914	2,696	2,494	2,294	2,107	1,942	1,795
	200	94,664	59,613	39,936	28,048	20,447	15,362	11,833	9,307	7,452	6,058	4,992	4,162	3,506	2,981	2,556	2,208	1,920	1,681	1,479	1,309	1,163
	300	63,109	39,742	26,624	18,699	13,632	10,242	7,889	6,205	4,968	4,039	3,328	2,775	2,337	1,987	1,704	1,472	1,280	1,120	0,986	0,872	0,776
1,50	ULS	37,865	23,845	15,974	11,219	8,179	6,145	4,733	3,723	2,981	2,423	1,997	1,665	1,402	1,192	1,022	0,883	0,768	0,672	0,592	0,523	0,465
	SLS_PD	17,200	14,001	11,352	9,470	8,062	6,957	6,083	5,386	4,805	4,390	4,027	3,717	3,436	3,162	2,914	2,696	2,494	2,294	2,107	1,942	1,795
	200	114,222	71,930	48,188	33,844	24,672	18,536	14,278	11,230	8,991	7,310	6,023	5,022	4,230	3,597	3,084	2,664	2,317	2,028	1,785	1,579	1,404
	300	76,148	47,953	32,125	22,562	16,448	12,358	9,519	7,487	5,994	4,873	4,016	3,348	2,820	2,398	2,056	1,776	1,545	1,352	1,190	1,053	0,936
1,50	ULS	45,689	28,772	19,275	13,537	9,869	7,415	5,711	4,492	3,597	2,924	2,409	2,009	1,692	1,439	1,234	1,066	0,927	0,811	0,714	0,632	0,561
	SLS_PD	21,622	16,894	13,698	11,426	9,728	8,394	7,340	6,498	5,797	5,297	4,859	4,485	4,145	3,816	3,516	3,253	3,009	2,768	2,542	2,343	2,166
	200	114,222	71,930	48,188	33,844	24,672	18,536	14,278	11,230	8,991	7,310	6,023	5,022	4,230	3,597	3,084	2,664	2,317	2,028	1,785	1,579	1,404
	300	76,148	47,953	32,125	22,562	16,448	12,358	9,519	7,487	5,994	4,873	4,016	3,348	2,820	2,398	2,056	1,776	1,545	1,352	1,190	1,053	0,936

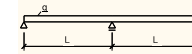


Design tables of profile **Hacierco® 85/280**

Steel grade: **S320GD**

Pressure

Double spans



Thickness	Limit states	Span (m) - Support width : 90mm / 160mm / 90mm																				
		1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00	5,25	5,50	5,75	6,00	6,25	6,50
0,75	ULS	19,929	16,515	12,644	9,990	8,092	6,688	5,620	4,788	4,129	3,597	3,161	2,800	2,498	2,242	2,023	1,835	1,672	1,530	1,405	1,295	1,197
	SLS_PD	9,246	7,177	5,784	4,799	4,063	3,700	3,398	3,142	2,922	2,629	2,376	2,164	1,973	1,817	1,676	1,550	1,434	1,321	1,213	1,118	1,033
	200	57,750	36,367	24,363	17,111	12,474	9,372	7,219	5,678	4,546	3,696	3,045	2,539	2,139	1,819	1,559	1,347	1,171	1,025	0,902	0,798	0,710
	300	38,500	24,245	16,242	11,407	8,316	6,248	4,812	3,785	3,031	2,464	2,030	1,693	1,426	1,212	1,039	0,898	0,781	0,683	0,602	0,532	0,473
	500	23,100	14,547	9,745	6,844	4,990	3,749	2,887	2,271	1,818	1,478	1,218	1,016	0,856	0,727	0,624	0,539	0,469	0,410	0,361	0,319	0,284
0,88	ULS	24,312	20,786	15,915	12,574	10,185	8,418	7,073	6,027	5,197	4,527	3,979	3,524	3,144	2,821	2,546	2,310	2,104	1,925	1,768	1,630	1,507
	SLS_PD	12,339	9,833	8,112	6,870	5,928	5,129	4,495	3,988	3,566	3,229	2,938	2,692	2,470	2,255	2,061	1,893	1,736	1,597	1,467	1,352	1,250
	200	66,379	41,801	28,004	19,668	14,338	10,772	8,297	6,526	5,225	4,248	3,500	2,918	2,458	2,090	1,792	1,548	1,347	1,178	1,037	0,918	0,816
	300	44,253	27,868	18,669	13,112	9,559	7,182	5,532	4,351	3,483	2,832	2,334	1,946	1,639	1,394	1,195	1,032	0,898	0,786	0,691	0,612	0,544
	500	26,552	16,721	11,201	7,867	5,735	4,309	3,319	2,610	2,090	1,699	1,400	1,167	0,983	0,836	0,717	0,619	0,539	0,471	0,415	0,367	0,326
1,00	ULS	28,359	24,308	18,933	14,960	12,117	10,014	8,415	7,170	6,182	5,385	4,733	4,193	3,740	3,357	3,029	2,748	2,504	2,291	2,104	1,939	1,792
	SLS_PD	15,193	12,286	10,261	8,782	7,650	6,437	5,498	4,761	4,159	3,783	3,457	3,179	2,929	2,658	2,416	2,207	2,014	1,853	1,702	1,569	1,450
	200	74,345	46,818	31,364	22,028	16,058	12,065	9,293	7,309	5,852	4,758	3,921	3,269	2,754	2,341	2,007	1,734	1,508	1,320	1,162	1,028	0,914
	300	49,563	31,212	20,909	14,685	10,706	8,043	6,195	4,873	3,901	3,172	2,614	2,179	1,836	1,561	1,338	1,156	1,005	0,880	0,774	0,685	0,609
	500	29,738	18,727	12,546	8,811	6,423	4,826	3,717	2,924	2,341	1,903	1,568	1,307	1,101	0,936	0,803	0,694	0,603	0,528	0,465	0,411	0,365
1,13	ULS	34,360	29,431	22,533	17,804	14,421	11,918	10,015	8,533	7,358	6,409	5,633	4,990	4,451	3,995	3,605	3,270	2,980	2,726	2,504	2,307	2,133
	SLS_PD	18,465	15,198	12,878	11,157	9,821	8,175	6,911	5,923	5,125	4,602	4,155	3,779	3,446	3,140	2,866	2,629	2,409	2,216	2,035	1,876	1,734
	200	84,910	53,471	35,822	25,159	18,341	13,780	10,614	8,348	6,684	5,434	4,478	3,733	3,145	2,674	2,293	1,980	1,722	1,507	1,327	1,174	1,044
	300	56,607	35,648	23,881	16,772	12,227	9,186	7,076	5,565	4,456	3,623	2,985	2,489	2,097	1,783	1,528	1,320	1,148	1,005	0,884	0,783	0,696
	500	33,964	21,389	14,329	10,063	7,336	5,512	4,246	3,339	2,674	2,174	1,791	1,493	1,258	1,070	0,917	0,792	0,689	0,603	0,531	0,470	0,417
1,25	ULS	39,898	33,771	25,856	20,429	16,548	13,676	11,492	9,792	8,443	7,355	6,464	5,726	5,107	4,584	4,137	3,752	3,419	3,128	2,873	2,648	2,448
	SLS_PD	21,486	17,886	15,295	13,350	11,825	9,780	8,215	6,997	6,017	5,357	4,799	4,332	3,922	3,584	3,281	3,018	2,774	2,551	2,343	2,159	1,996
	200	94,664	59,613	39,936	28,048	20,447	15,362	11,833	9,307	7,452	6,058	4,992	4,162	3,506	2,981	2,556	2,208	1,920	1,681	1,479	1,309	1,163
	300	63,109	39,742	26,624	18,699	13,632	10,242	7,889	6,205	4,968	4,039	3,328	2,775	2,337	1,987	1,704	1,472	1,280	1,120	0,986	0,872	0,776
	500	37,865	23,845	15,974	11,219	8,179	6,145	4,733	3,723	2,981	2,423	1,997	1,665	1,402	1,192	1,022	0,883	0,768	0,672	0,592	0,523	0,465
1,50	ULS	48,142	40,749	31,198	24,650	19,967	16,502	13,866	11,815	10,187	8,874	7,800	6,909	6,163	5,531	4,992	4,528	4,125	3,774	3,466	3,195	2,954
	SLS_PD	25,925	21,581	18,455	16,108	14,268	11,800	9,912	8,442	7,260	6,464	5,791	5,227	4,733	4,324	3,959	3,641	3,347	3,078	2,827	2,605	2,408
	200	114,222	71,930	48,188	33,844	24,672	18,536	14,278	11,230	8,991	7,310	6,023	5,022	4,230	3,597	3,084	2,664	2,317	2,028	1,785	1,579	1,404
	300	76,148	47,953	32,125	22,562	16,448	12,358	9,519	7,487	5,994	4,873	4,016	3,348	2,820	2,398	2,056	1,776	1,545	1,352	1,190	1,053	0,936
	500	45,689	28,772	19,275	13,537	9,869	7,415	5,711	4,492	3,597	2,924	2,409	2,009	1,692	1,439	1,234	1,066	0,927	0,811	0,714	0,632	0,561



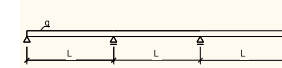


Design tables of profile **Hacierco® 85/280**

Steel grade: **S320GD**

Pressure

Three spans



Thickness	Limit states	Span (m) - Support width : 40mm / 60mm / 60mm / 40mm																				
		1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00	5,25	5,50	5,75	6,00	6,25	6,50
0,75	ULS	17,786	15,245	12,644	9,990	8,092	6,688	5,620	4,788	4,129	3,597	3,161	2,800	2,498	2,242	2,023	1,835	1,672	1,530	1,405	1,295	1,197
	SLS_PD	8,650	7,211	5,930	5,009	4,319	3,777	3,432	3,138	2,888	2,671	2,436	2,196	1,993	1,820	1,661	1,530	1,409	1,301	1,201	1,117	1,032
	200	42,704	26,893	18,016	12,653	9,224	6,930	5,338	4,199	3,362	2,733	2,252	1,878	1,582	1,345	1,153	0,996	0,866	0,758	0,667	0,590	0,525
	300	28,470	17,928	12,011	8,435	6,149	4,620	3,559	2,799	2,241	1,822	1,501	1,252	1,054	0,897	0,769	0,664	0,578	0,505	0,445	0,394	0,350
	500	17,082	10,757	7,206	5,061	3,690	2,772	2,135	1,679	1,345	1,093	0,901	0,751	0,633	0,538	0,461	0,398	0,347	0,303	0,267	0,236	0,210
0,88	ULS	20,826	17,851	15,620	12,574	10,185	8,418	7,073	6,027	5,197	4,527	3,979	3,524	3,144	2,821	2,546	2,310	2,104	1,925	1,768	1,630	1,507
	SLS_PD	11,065	9,295	7,775	6,664	5,819	5,148	4,542	4,046	3,641	3,305	3,008	2,749	2,527	2,335	2,155	1,992	1,843	1,710	1,587	1,474	1,363
	200	49,086	30,911	20,708	14,544	10,602	7,966	6,136	4,826	3,864	3,141	2,588	2,158	1,818	1,546	1,325	1,145	0,996	0,871	0,767	0,679	0,603
	300	32,724	20,607	13,805	9,696	7,068	5,311	4,090	3,217	2,576	2,094	1,726	1,439	1,212	1,031	0,884	0,763	0,664	0,581	0,511	0,452	0,402
	500	19,634	12,364	8,283	5,818	4,241	3,186	2,454	1,930	1,546	1,257	1,035	0,863	0,727	0,618	0,530	0,458	0,398	0,349	0,307	0,271	0,241
1,00	ULS	23,633	20,257	17,725	14,960	12,117	10,014	8,415	7,170	6,182	5,385	4,733	4,193	3,740	3,357	3,029	2,748	2,504	2,291	2,104	1,939	1,792
	SLS_PD	13,295	11,218	9,478	8,191	7,204	6,414	5,566	4,885	4,336	3,884	3,535	3,259	3,020	2,809	2,612	2,420	2,244	2,088	1,942	1,805	1,668
	200	54,976	34,620	23,193	16,289	11,875	8,922	6,872	5,405	4,328	3,518	2,899	2,417	2,036	1,731	1,484	1,282	1,115	0,976	0,859	0,760	0,676
	300	36,651	23,080	15,462	10,859	7,917	5,948	4,581	3,603	2,885	2,346	1,933	1,611	1,357	1,154	0,990	0,855	0,743	0,651	0,573	0,507	0,450
	500	21,990	13,848	9,277	6,516	4,750	3,569	2,749	2,162	1,731	1,407	1,160	0,967	0,814	0,693	0,594	0,513	0,446	0,390	0,344	0,304	0,270
1,13	ULS	27,910	23,923	20,933	17,804	14,421	11,918	10,015	8,533	7,358	6,409	5,633	4,990	4,451	3,995	3,605	3,270	2,980	2,726	2,504	2,307	2,133
	SLS_PD	16,971	14,143	11,629	9,821	8,468	7,410	6,457	5,690	5,068	4,556	4,154	3,830	3,549	3,302	3,071	2,847	2,642	2,461	2,291	2,128	1,968
	200	62,789	39,541	26,489	18,604	13,562	10,190	7,849	6,173	4,943	4,018	3,311	2,761	2,326	1,977	1,695	1,464	1,274	1,115	0,981	0,868	0,772
	300	41,859	26,360	17,659	12,403	9,042	6,793	5,232	4,115	3,295	2,679	2,207	1,840	1,550	1,318	1,130	0,976	0,849	0,743	0,654	0,579	0,514
	500	25,116	15,816	10,596	7,442	5,425	4,076	3,139	2,469	1,977	1,607	1,324	1,104	0,930	0,791	0,678	0,586	0,509	0,446	0,392	0,347	0,309
1,25	ULS	31,858	27,307	23,894	20,429	16,548	13,676	11,492	9,792	8,443	7,355	6,464	5,726	5,107	4,584	4,137	3,752	3,419	3,128	2,873	2,648	2,448
	SLS_PD	20,364	16,843	13,615	11,325	9,634	8,329	7,280	6,433	5,745	5,177	4,725	4,357	4,038	3,758	3,496	3,242	3,010	2,805	2,613	2,427	2,244
	200	70,001	44,082	29,532	20,741	15,120	11,360	8,750	6,882	5,510	4,480	3,691	3,078	2,593	2,204	1,890	1,633	1,420	1,243	1,094	0,968	0,860
	300	46,668	29,388	19,688	13,827	10,080	7,573	5,833	4,588	3,674	2,987	2,461	2,052	1,728	1,470	1,260	1,088	0,947	0,828	0,729	0,645	0,574
	500	28,001	17,633	11,813	8,296	6,048	4,544	3,500	2,753	2,204	1,792	1,477	1,231	1,037	0,882	0,756	0,653	0,568	0,497	0,438	0,387	0,344
1,50	ULS	38,440	32,949	28,830	24,650	19,967	16,502	13,866	11,815	10,187	8,874	7,800	6,909	6,163	5,531	4,992	4,528	4,125	3,774	3,466	3,195	2,954
	SLS_PD	24,571	20,323	16,428	13,665	11,624	10,050	8,784	7,762	6,932	6,247	5,701	5,257	4,872	4,534	4,218	3,912	3,632	3,384	3,153	2,929	2,708
	200	84,464	53,190	35,633	25,026	18,244	13,707	10,558	8,304	6,649	5,406	4,454	3,713	3,128	2,660	2,281	1,970	1,713	1,499	1,320	1,168	1,038
	300	56,310	35,460	23,756	16,684	12,163	9,138	7,039	5,536	4,433	3,604	2,969	2,476	2,086	1,773	1,520	1,313	1,142	1,000	0,880	0,778	0,692
	500	33,786	21,276	14,253	10,011	7,298	5,483	4,223	3,322	2,660	2,162	1,782	1,485	1,251	1,064	0,912	0,788	0,685	0,600	0,528	0,467	0,415

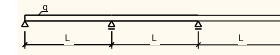


Design tables of profile **Hacierco® 85/280**

Steel grade: **S320GD**

Pressure

Three spans



Thickness	Limit states	Span (m) - Support width : 90mm / 160mm / 160mm / 90mm																				
		1,50	1,75	2,00	2,25	2,50	2,75	3,00	3,25	3,50	3,75	4,00	4,25	4,50	4,75	5,00	5,25	5,50	5,75	6,00	6,25	6,50
0,75	ULS	19,929	16,515	12,644	9,990	8,092	6,688	5,620	4,788	4,129	3,597	3,161	2,800	2,498	2,242	2,023	1,835	1,672	1,530	1,405	1,295	1,197
	SLS_PD	11,568	8,670	6,967	5,765	4,880	4,207	3,865	3,574	3,324	3,107	2,850	2,591	2,371	2,181	2,015	1,864	1,731	1,614	1,510	1,397	1,292
	200	42,704	26,893	18,016	12,653	9,224	6,930	5,338	4,199	3,362	2,733	2,252	1,878	1,582	1,345	1,153	0,996	0,866	0,758	0,667	0,590	0,525
	300	28,470	17,928	12,011	8,435	6,149	4,620	3,559	2,799	2,241	1,822	1,501	1,252	1,054	0,897	0,769	0,664	0,578	0,505	0,445	0,394	0,350
0,88	500	17,082	10,757	7,206	5,061	3,690	2,772	2,135	1,679	1,345	1,093	0,901	0,751	0,633	0,538	0,461	0,398	0,347	0,303	0,267	0,236	0,210
	ULS	24,312	20,786	15,915	12,574	10,185	8,418	7,073	6,027	5,197	4,527	3,979	3,524	3,144	2,821	2,546	2,310	2,104	1,925	1,768	1,630	1,507
	SLS_PD	15,435	11,685	9,609	8,116	6,998	6,134	5,365	4,752	4,252	3,839	3,490	3,193	2,938	2,718	2,517	2,310	2,129	1,970	1,830	1,690	1,563
	200	49,086	30,911	20,708	14,544	10,602	7,966	6,136	4,826	3,864	3,141	2,588	2,158	1,818	1,546	1,325	1,145	0,996	0,871	0,767	0,679	0,603
1,00	300	32,724	20,607	13,805	9,696	7,068	5,311	4,090	3,217	2,576	2,094	1,726	1,439	1,212	1,031	0,884	0,763	0,664	0,581	0,511	0,452	0,402
	500	19,634	12,364	8,283	5,818	4,241	3,186	2,454	1,930	1,546	1,257	1,035	0,863	0,727	0,618	0,530	0,458	0,398	0,349	0,307	0,271	0,241
	ULS	28,359	24,308	18,933	14,960	12,117	10,014	8,415	7,170	6,182	5,385	4,733	4,193	3,740	3,357	3,029	2,748	2,504	2,291	2,104	1,939	1,792
	SLS_PD	19,004	14,468	12,048	10,287	8,953	7,913	6,751	5,838	5,109	4,515	4,081	3,748	3,462	3,213	2,981	2,722	2,496	2,299	2,125	1,961	1,813
1,13	200	54,976	34,620	23,193	16,289	11,875	8,922	6,872	5,405	4,328	3,518	2,899	2,417	2,036	1,731	1,484	1,282	1,115	0,976	0,859	0,760	0,676
	300	36,651	23,080	15,462	10,859	7,917	5,948	4,581	3,603	2,885	2,346	1,933	1,611	1,357	1,154	0,990	0,855	0,743	0,651	0,573	0,507	0,450
	500	21,990	13,848	9,277	6,516	4,750	3,569	2,749	2,162	1,731	1,407	1,160	0,967	0,814	0,693	0,594	0,513	0,446	0,390	0,344	0,304	0,270
	ULS	34,360	29,431	22,533	17,804	14,421	11,918	10,015	8,533	7,358	6,409	5,633	4,990	4,451	3,995	3,605	3,270	2,980	2,726	2,504	2,307	2,133
1,25	SLS_PD	23,096	17,705	14,967	12,941	11,386	10,157	8,582	7,352	6,374	5,582	4,992	4,534	4,143	3,808	3,509	3,216	2,960	2,736	2,539	2,344	2,168
	200	62,789	39,541	26,489	18,604	13,562	10,190	7,849	6,173	4,943	4,018	3,311	2,761	2,326	1,977	1,695	1,464	1,274	1,115	0,981	0,868	0,772
	300	41,859	26,360	17,659	12,403	9,042	6,793	5,232	4,115	3,295	2,679	2,207	1,840	1,550	1,318	1,130	0,976	0,849	0,743	0,654	0,579	0,514
	500	25,116	15,816	10,596	7,442	5,425	4,076	3,139	2,469	1,977	1,607	1,324	1,104	0,930	0,791	0,678	0,586	0,509	0,446	0,392	0,347	0,309
1,50	ULS	39,898	33,771	25,856	20,429	16,548	13,676	11,492	9,792	8,443	7,355	6,464	5,726	5,107	4,584	4,137	3,752	3,419	3,128	2,873	2,648	2,448
	SLS_PD	26,873	20,692	17,661	15,392	13,632	12,228	10,272	8,750	7,542	6,568	5,833	5,259	4,773	4,357	3,996	3,672	3,389	3,141	2,921	2,699	2,495
	200	70,001	44,082	29,532	20,741	15,120	11,360	8,750	6,882	5,510	4,480	3,691	3,078	2,593	2,204	1,890	1,633	1,420	1,243	1,094	0,968	0,860
	300	46,668	29,388	19,688	13,827	10,080	7,573	5,833	4,588	3,674	2,987	2,461	2,052	1,728	1,470	1,260	1,088	0,947	0,828	0,729	0,645	0,574
1,50	500	28,001	17,633	11,813	8,296	6,048	4,544	3,500	2,753	2,204	1,792	1,477	1,231	1,037	0,882	0,756	0,653	0,568	0,497	0,438	0,387	0,344
	ULS	48,142	40,749	31,198	24,650	19,967	16,502	13,866	11,815	10,187	8,874	7,800	6,909	6,163	5,531	4,992	4,528	4,125	3,774	3,466	3,195	2,954
	SLS_PD	32,425	24,967	21,311	18,572	16,448	14,755	12,395	10,558	9,100	7,925	7,039	6,346	5,759	5,257	4,821	4,430	4,089	3,789	3,524	3,256	3,011
	200	84,464	53,190	35,633	25,026	18,244	13,707	10,558	8,304	6,649	5,406	4,454	3,713	3,128	2,660	2,281	1,970	1,713	1,499	1,320	1,168	1,038
1,50	300	56,310	35,460	23,756	16,684	12,163	9,138	7,039	5,536	4,433	3,604	2,969	2,476	2,086	1,773	1,520	1,313	1,142	1,000	0,880	0,778	0,692
	500	33,786	21,276	14,253	10,011	7,298	5,483	4,223	3,322	2,660	2,162	1,782	1,485	1,251	1,064	0,912	0,788	0,685	0,600	0,528	0,467	0,415