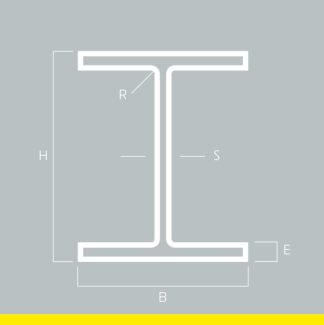


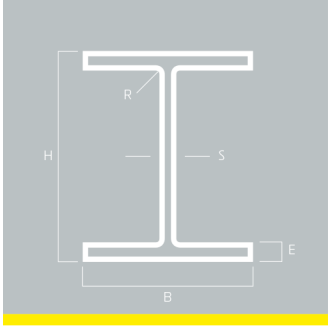


TRAVI HEA

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HEA beams

HE	H	B	S	E	R	kg/m	Sez. cm ²	Wx cm ³	Jx cm ⁴
100	96	100	5,0	8,0	12,0	16,7	21,2	73	349
120	114	120	5,0	8,0	12,0	19,9	25,3	106	606
140	133	140	5,5	8,5	12,0	24,7	31,4	155	1033
160	152	160	6,0	9,0	15,0	30,4	38,8	220	1673
180	171	180	6,0	9,5	15,0	35,5	45,3	294	2510
200	190	200	6,5	10,0	18,0	42,3	53,8	389	3692
220	210	220	7,0	11,0	18,0	50,5	64,3	515	5410
240	230	240	7,5	12,0	21,0	60,3	76,8	675	7763
260	250	260	7,5	12,5	24,0	68,2	86,8	836	10455
280	270	280	8,0	13,0	24,0	76,4	97,3	1010	13673
300	290	300	8,5	14,0	27,0	88,3	112	1260	18263
320	310	300	9,0	15,5	27,0	97,6	124	1480	22928
340	330	300	9,5	16,5	27,0	105	133	1680	27693
360	350	300	10,0	17,5	27,0	112	143	1890	33090
400	390	300	11,0	19,0	27,0	125	159	2310	45069
450	440	300	11,5	21,0	27,0	140	178	2900	63722
500	490	300	12,0	23,0	27,0	155	197	3550	86975
550	540	300	12,5	24,0	27,0	166	212	4150	111932
600	590	300	13,0	25,0	27,0	178	226	4790	141203
650	640	300	13,5	26,0	27,0	190	241	5470	175178
700	690	300	14,5	27,0	27,0	204	260	6240	215301
800	790	300	15,0	28,0	30,0	224	286	7680	303442
900	890	300	16,0	30,0	30,0	252	320	9480	422075
1000	990	300	16,5	31,0	30,0	272	347	11190	553846

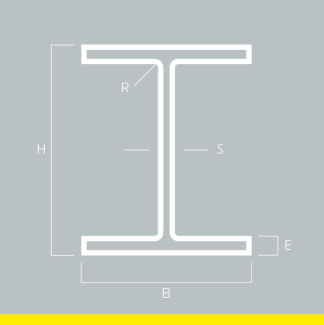


TRAVI HEA

tabella dei carichi netti uniformemente
ripartiti per $\sigma = 1600 \text{ kg/cm}^2$

HEA beams

H	DISTANZA TRA GLI APPOGGI IN METRI / DISTANCES BETWEEN SUPPORTS IN METERS											
	3	4	5	6	7	8	9	10	11	12	13	14
100	3064	2269	1785	1457	-	-	-	-	-	-	-	-
120	4463	3312	2614	2142	1800	-	-	-	-	-	-	-
140	6539	4861	3844	3158	2661	2282	-	-	-	-	-	-
160	9295	6918	5480	4511	3810	3276	2855	2512	-	-	-	-
180	12437	9265	7348	6059	5127	4419	3861	3408	3030	-	-	-
200	16470	12278	9746	8044	6816	5885	5151	4556	4061	3641	-	-
220	21821	16277	12931	10683	9063	7835	6869	6087	5437	4887	4414	-
240	28618	21358	16978	14037	11920	10317	9057	8036	7191	6476	5862	5327
260	35464	26478	21060	17425	14809	12830	11275	10018	8977	8098	7344	6688
280	42863	32013	25473	21087	17933	15548	13676	12163	10912	9856	8951	8164
300	53493	39965	31813	26349	22421	19453	17125	15244	13690	12380	11258	10283
320	62852	46368	37400	30987	26379	22898	20170	17967	16147	14615	13306	12164
340	71363	53338	42481	35209	29984	26039	22947	20453	18393	16659	15176	13889
360	80301	60034	47822	39646	33775	29343	25871	23071	20760	18815	17152	15711
400	98182	73418	58509	48528	41364	35959	31790	28317	25567	23139	21119	19369
450	123310	92237	73538	61025	52047	45278	39983	35719	32204	29252	26733	24553
500	150997	112977	90102	74801	63827	55558	49092	43888	39603	36005	32937	30286
550	176564	132132	105407	87535	74721	65070	57526	51458	46463	42273	38702	35618
600	203834	152564	121731	101116	86340	75214	66520	59530	53778	48956	45026	41301
650	232816	174280	139082	115553	98692	86000	76085	68116	61560	56066	51388	47351
700	265628	198864	158724	131896	112674	98200	86910	77832	70366	64112	58788	54195
800	327008	244864	195488	162496	138866	121088	107210	96064	86903	79232	72706	67081
900	403724	302352	241428	200728	171584	149664	132558	118824	107540	98096	90065	83146
1000	476624	356992	285104	237088	202713	176864	156698	140512	127218	116096	106642	98500

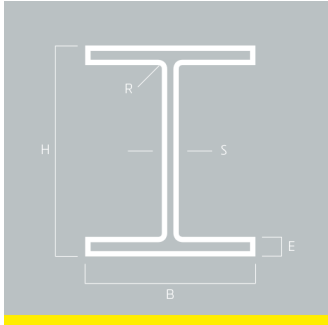


TRAVI HEB

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HEB beams

HE	H	B	S	E	R	kg/m	Sez. cm ²	Wx cm ³	Jx cm ⁴
100	100	100	6,0	10,0	12,0	20,4	26,0	90	450
120	120	120	6,5	11,0	12,0	26,7	34,0	144	864
140	140	140	7,0	12,0	12,0	33,7	43,0	216	1509
160	160	160	8,0	13,0	15,0	42,6	54,3	311	2492
180	180	180	8,5	14,0	15,0	51,2	65,3	426	3831
200	200	200	9,0	15,0	18,0	61,3	78,1	570	5696
220	220	220	9,5	16,0	18,0	71,5	91,0	736	8091
240	240	240	10,0	17,0	21,0	83,2	106	938	11259
260	260	260	10,0	17,5	24,0	93,0	118	1150	14919
280	280	280	10,5	18,0	24,0	103	131	1380	19270
300	300	300	11,0	19,0	27,0	117	149	1680	25166
320	320	300	11,5	20,5	27,0	127	161	1930	30823
340	340	300	12,0	21,5	27,0	134	171	2160	36656
360	360	300	12,5	22,5	27,0	142	181	2400	43193
400	400	300	13,5	24,0	27,0	155	198	2880	57680
450	450	300	14,0	26,0	27,0	171	218	3550	79887
500	500	300	14,5	28,0	27,0	187	239	4290	107176
550	550	300	15,0	29,0	27,0	199	254	4970	136691
600	600	300	15,5	30,0	27,0	212	270	5700	171041
650	650	300	16,0	31,0	27,0	225	286	6480	210616
700	700	300	17,0	32,0	27,0	241	306	7340	256888
800	800	300	17,5	33,0	30,0	262	334	8980	359083
900	900	300	18,5	35,0	30,0	291	371	10980	494065
1000	1000	300	19,0	36,0	30,0	314	400	12890	644748

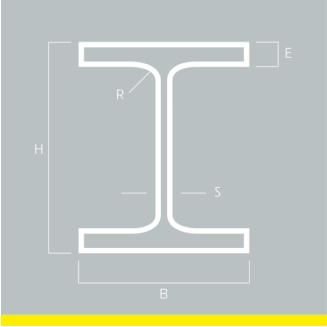


TRAVI HEB

tabella dei carichi netti uniformemente
ripartiti per $\sigma = 1600 \text{ kg/cm}^2$

HEB beams

H	DISTANZA TRA GLI APOGGI IN METRI / DISTANCES BETWEEN SUPPORTS IN METERS											
	3	4	5	6	7	8	9	10	11	12	13	14
100	3778	2798	2202	1797	1502	-	-	-	-	-	-	-
120	6063	4501	3553	2911	2446	2090	-	-	-	-	-	-
140	9114	6777	5361	4405	3713	3186	2768	-	-	-	-	-
160	13141	9781	7748	6379	5388	4635	4039	3554	-	-	-	-
180	18022	13427	10649	8780	7431	6406	5597	4940	4393	-	-	-
200	24135	17994	14285	11792	9993	8629	7554	6683	5958	5344	-	-
220	31187	23265	18483	15272	12957	11203	9823	8705	7777	6992	6317	-
240	39770	29682	23596	19511	16569	14342	12591	11174	10000	9006	8153	7411
260	48786	36427	28974	23974	20377	17655	15518	13789	12358	11150	10113	9212
280	58569	43747	34812	28821	24512	21255	18700	16633	14924	13483	12248	11174
300	71327	53290	42422	35137	29900	25943	22839	20333	18261	16515	15020	13721
320	81963	61250	48771	40410	34401	29863	26305	23433	21060	19062	17351	15867
340	91755	68582	54624	45274	38558	33487	29513	26307	23659	21431	19525	17872
360	101971	76130	60728	50346	42890	37263	32854	29300	26364	23895	21784	19954
400	122412	91568	72951	60508	51576	44838	39641	35313	31962	28859	26341	24160
450	150949	112913	90022	74705	63715	55430	49948	43728	39427	35813	32729	30062
500	182474	136528	108886	90395	77134	67142	59328	53040	47861	43514	42238	38149
550	211451	158240	126234	104830	89484	77926	68891	61624	55642	50624	46347	42653
600	242558	181547	144856	120325	102742	89501	79262	70838	63993	58254	53365	49145
650	275805	206460	164763	136890	116916	101880	90135	80694	72928	66420	60878	56095
700	312450	233916	186700	155140	132530	115512	102222	91542	82760	75401	69137	63734
800	382360	286312	228578	190000	162371	141584	125357	112324	101612	92642	85012	78434
900	467607	350196	279633	232494	198740	173352	153541	137634	124566	113628	104327	96314
1000	549031	411224	328414	273102	233504	203728	180498	161852	146538	133725	122834	113077

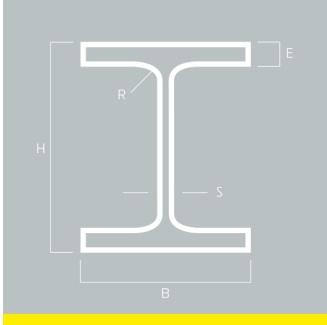


TRAVI HEM

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HEM beams

HE	H	B	S	E	R	kg/m	Sez. cm ²	Wx cm ³	Jx cm ⁴
100	120	106	12,0	20,0	12,0	41,8	53,2	190	1143
120	140	126	12,5	21,0	12,0	52,1	66,4	288	2018
140	160	146	13,0	22,0	12,0	63,2	80,6	411	3291
160	180	166	14,0	23,0	15,0	76,2	97,1	566	5098
180	200	186	14,5	24,0	15,0	88,9	113	748	7483
200	220	206	15,0	25,0	18,0	103	131	967	10642
220	240	226	15,5	26,0	18,0	117	149	1220	14605
240	270	248	18,0	32,0	21,0	157	200	1800	24289
260	290	268	18,0	32,5	24,0	172	220	2160	31307
280	310	288	18,5	33,0	24,0	189	240	2550	39547
300	340	310	21,0	39,0	27,0	238	303	3480	59201
320	359	309	21,0	40,0	27,0	245	312	3800	68135
340	377	309	21,0	40,0	27,0	248	316	4050	76372
360	395	308	21,0	40,0	27,0	250	319	4300	84867
400	432	307	21,0	40,0	27,0	256	326	4820	104119
450	478	307	21,0	40,0	27,0	263	335	5500	131484
500	524	306	21,0	40,0	27,0	270	344	6180	161929
550	572	306	21,0	40,0	27,0	278	354	6920	197984
600	620	305	21,0	40,0	27,0	285	364	7660	237447
650	668	305	21,0	40,0	27,0	293	374	8430	281667
700	716	304	21,0	40,0	27,0	301	383	9200	29278
800	814	303	21,0	40,0	30,0	317	404	10870	442598
900	910	302	21,0	40,0	30,0	333	424	12540	570434
1000	1008	302	21,0	40,0	30,0	349	444	14330	722299



TRAVI HEM

tabella dei carichi netti uniformemente
ripartiti per $\sigma = 1600 \text{ kg/cm}^2$

HEM beams

H	DISTANZA TRA GLI APOGGI IN METRI / DISTANCES BETWEEN SUPPORTS IN METERS											
	3	4	5	6	7	8	9	10	11	12	13	14
100	7981	5912	4654	3802	3181	2705	-	-	-	-	-	-
120	12131	9007	7112	5771	4901	4191	3627	-	-	-	-	-
140	17346	12900	10205	8388	7072	6070	5276	4628	-	-	-	-
160	23920	17806	14108	11617	9816	8446	7363	6482	5747	-	-	-
180	31647	23580	18704	15423	13055	11256	9837	8685	7726	6911	-	-
200	40948	30531	24239	20011	16961	14647	12825	11347	10119	9078	8182	-
220	51701	38571	30646	25324	21489	18583	16297	14445	12909	11609	10491	9516
240	76327	56970	45294	37457	31814	27543	24186	21469	19217	17315	15681	14258
260	91641	68430	54434	45047	38292	33183	29171	25927	23242	20975	19031	17340
280	108230	80842	64333	53264	45304	39287	34564	30749	27593	24931	22650	20667
300	147762	110405	87895	72810	61966	53774	47350	42163	37875	34263	31169	28484
320	161394	120617	96052	79594	67769	58838	51838	46188	41522	37592	34229	31312
340	172451	128604	102437	84909	72319	62814	55366	49358	44398	40222	36651	33555
360	182712	136596	108827	90231	76876	66798	58904	52663	47285	42885	39087	35813
400	204880	153212	124748	101288	86342	75070	66245	59134	53269	48840	44129	40483
450	233871	174943	139481	115752	98727	85893	75853	67768	61105	55509	50733	46602
500	262863	196675	156854	130216	111112	96717	85461	76402	68940	62678	57337	52721
550	294467	220322	175757	145955	124588	108493	95913	85793	77463	70475	64519	59375
600	325963	243974	194666	161700	138070	120277	106374	95195	85997	78284	71714	66042
650	358801	268588	214343	178082	152097	132536	117256	104974	94871	86404	79194	72972
700	391630	293196	234015	194460	166121	144792	128135	114750	103743	94521	86671	79900
800	462835	346572	276687	229991	196546	171384	151742	135966	123000	112142	102906	94944
900	534041	399948	319359	265522	226971	197976	175349	157182	148857	129764	119141	109989
1000	610366	457164	365103	303612	259591	226488	200663	179934	162910	148865	136558	126131

Pilastri acciaio con carico di sicurezza = 16 kg/m^2



TRAVI HE

sollecitata a compressione

HE beams

mm		carichi massimi in kg riferiti alle lunghezze dei pilastri in m:											
		2	2,5	3	3,5	4	4,5	5	5,5	6	6,5	7	8
100	A	23555	21068	18434	15924	13732	11084	9093	7521	6304			
	B	29090	26000	22857	19809	16979	13774	11304	9327	7834			
	M	61237	55633	49777	44109	38342	33380	26851	22166	18873			
120	A	29985	27726	25142	22741	20139	17911	15629	12769	10852	9200		
	B	40296	37517	34000	30734	27336	24285	21501	17770	15027	12680		
	M	79879	74816	68987	62863	56812	50590	44827	39494	33096	28105		
140	A	38646	36405	33718	31304	28384	26031	23367	21020	18402	15651	13469	
	B	53333	50218	46802	43270	39540	35833	32300	29029	26060	22122	19005	
	M	100750	95525	89555	83740	77221	70086	64159	58090	52636	45730	39558	
160	A	49269	46676	44028	41112	38559	35474	32333	29561	266874	24537	21333	-
	B	68952	65323	61617	57920	54300	49931	46459	42174	38442	35170	30808	
	M	124288	119507	113401	106410	100232	93029	85834	79671	72260	66393	60925	
180	A	58926	56186	53688	51042	48000	45019	42385	39178	36059	33095	30582	24404
	B	84943	81625	77392	73577	69653	65300	61099	56782	52502	48147	44649	35903
	M	148590	141625	136300	130417	123319	116954	109204	101842	94416	88000	80928	68666
200	A	71140	68317	65709	62832	59777	56631	53465	50339	46782	43474	40413	34850
	B	103272	99174	96123	91882	87384	82754	78100	73505	68659	64082	59504	51850
	M	175066	168064	161600	154470	148990	140990	135585	126554	118689	112342	104517	90943
220	A	86453	82967	80375	76776	74014	70951	67241	63900	60517	56522	53305	46342
	B	122352	118378	113750	109473	105507	101111	95789	91000	86153	81796	75883	67096
	M	202576	195934	180220	182473	175764	168338	160429	152254	144000	136599	129210	113828
240	A	105025	100721	97523	94523	90352	87148	84164	80313	76322	72282	67889	61134
	B	144957	139016	134603	130461	124629	120283	116164	111578	106000	100353	95280	85226
	M	275310	266133	255488	249500	240120	233109	223328	214335	206038	197135	186760	166333
260	A	119724	115733	112000	108500	104421	102117	97802	94476	90181	86260	82177	74267
	B	163310	157866	152774	148000	142436	139294	134354	128870	123816	118400	112094	102400
	M	305530	295260	288000	276661	270276	260266	252776	244000	234240	226683	216888	197393

mm		carichi massimi in kg riferiti alle lunghezze dei pilastri in m:											
		2	2,5	3	3,5	4	4,5	5	5,5	6	6,5	7	8
280	A	135373	130823	127606	123555	119753	116179	112811	108867	104483	101090	96695	87954
	B	182817	176670	172327	166857	161723	158075	152459	148056	143020	137411	131400	120137
	M	384320	325694	317619	307456	300250	288962	282589	272567	265048	254516	247948	226070
300	A		153846	148760	144000	140625	157404	132352	129496	125000	120000	116883	106508
	B		203897	197157	192387	186375	182106	176711	171625	166825	160107	154909	142850
	M		418068	407529	394276	384888	375937	364631	356588	343943	334455	323306	301217
320	A			164495	159232	155500	151938	146352	143194	138222	132683	129246	117775
	B			213289	208129	201625	197007	191170	185669	179272	173208	167584	154538
	M			419495	405835	396190	384000	375438	367058	354042	344275	330596	310062
340	A			176528	170880	166875	163053	157058	151489	148333	142400	137806	126390
	B			225983	218752	213625	208732	201058	196719	187287	183516	177558	163736
	M			421066	410796	401015	288676	379909	368817	358354	346082	334622	311901
360	A				182784	178500	174412	168000	162042	157572	152320	147406	135195
	B				231168	225750	220580	212470	207884	200666	192640	187636	170982
	M				414699	401637	392369	380656	372321	359211	349369	335578	303139
400	A				203520	198750	191278	187058	180425	175448	168476	162038	149647
	B				253184	247250	237954	232705	224453	218262	209589	204180	186164
	M				420387	410456	400984	389014	377739	364531	354612	340705	314024
450	A					222500	214135	209411	201985	195068	188609	181401	166549
	B					272500	262255	256470	247375	240551	230993	222165	205116
	M					419250	409648	397511	386071	375272	360161	348467	321341
500	A					244961	237593	232352	224113	216438	207894	198742	184795
	B					295937	287037	280705	270751	261479	251157	243159	223251
	M					430575	420519	405058	390695	382255	367253	355406	325964
600	A					278769	270447	262608	253426	243221	235324	225093	207085
	B					392384	322388	315328	304225	243877	282352	270000	246857
	M					451100	437533	424759	412709	398575	382842	365987	334436