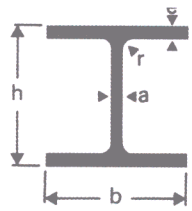
TRAVI HE

UNI 5397

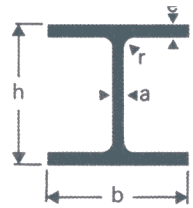


(*) A = serie leggera
B = serie normale
M = serie rinforzata

designazione abbreviata (*)	sezione cm^2	dimensioni						caratteristiche riferite asse neutro x - x		Y - Y	
		h mm	b mm	a mm	e mm	r mm	peso kg/m	Iy cm^4	Ix Vx cm^3	Iy cm^4	Iy Vy cm^3
HE 100 A	21,2	96	100	5	8	12	**16,7**	349	73	134	27
100 B	26,0	100	100	6	10	12	**20,4**	450	90	167	33
100 M	53,2	120	106	12	20	12	**41,8**	1143	190	399	75
HE 120 A	25,3	114	120	5	8	12	**19,9**	606	106	231	38
120 B	34,0	120	120	6,5	11	12	**26,7**	864	144	318	53
120 M	66,4	140	126	12,5	21	12	**52,1**	2018	288	703	112
HE 140 A	31,4	133	140	5,5	8,5	12	**24,7**	1033	155	389	56
140 B	43,0	140	140	7	12	12	**33,7**	1509	216	550	79
140 M	80,6	160	146	13	22	12	**63,2**	3291	411	1144	157
HE 160 A	38,8	152	160	6	9	15	**30,4**	1673	220	616	77
160 B	54,3	160	160	8	13	15	**42,6**	2492	311	889	111
160 M	97,1	180	166	14	23	15	**76,2**	5098	566	1759	212
HE 180 A	45,3	171	180	6	9,5	15	**35,5**	2510	294	925	103
180 B	65,3	180	180	8,5	14	15	**51,2**	3831	426	1363	151
180 M	113,3	200	186	14,5	24	15	**88,9**	7483	748	2580	277
HE 200 A	53,3	190	200	6,5	10	18	**42,3**	3692	389	1336	134
200 B	78,1	200	200	9	15	18	**61,3**	5696	570	2003	200
200 M	131,3	220	206	15	25	18	**103**	10642	967	3651	354
HE 220 A	64,3	210	220	7	11	18	**50,5**	5410	515	1955	178
220 B	91,0	220	220	9,5	16	18	**71,5**	8091	736	2843	258
220 M	149,4	240	226	15,5	26	18	**117**	14605	1220	5012	444
HE 240 A	76,8	230	240	7,5	12	21	**60,3**	7763	675	2769	231
240 B	106,0	240	240	10	17	21	**83,2**	11259	938	3923	327
240 M	199,6	270	248	18	32	21	**157**	24289	1800	8153	657
HE 260 A	86,8	250	260	7,5	12,5	24	**68,2**	10455	836	3668	282
260 B	118,4	260	260	10	17,5	24	**93,0**	14919	1150	5135	395
260 M	219,6	290	268	18	32,5	24	**172**	31307	2160	10449	780
HE 280 A	97,3	270	280	8	13	24	**76,4**	13673	1010	4763	340
280 B	131,4	280	280	10,5	18	24	**103**	19270	1380	6595	471
280 M	240,2	310	288	18,5	33	24	**189**	39547	2550	13163	914

TRAVI HE

UNI 5397



(*) A = serie leggera
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M = serie rinforzata

designazione abbreviata (*)	sezione	dimensioni						caratteristiche riferite asse neutro x - x		Y - Y	
	cm^2	h mm	b mm	a mm	e mm	r mm	peso kg/m	Iy cm^4	Ix Vx cm^3	Iy cm^4	Iy Vy cm^3
HE 300 A	112,5	290	300	8,5	14	27	**88,3**	18263	1260	6310	421
300 B	149,5	300	300	11	19	27	**117**	25166	1680	8563	571
300 M	303,1	340	310	21	39	27	**238**	59201	3480	19403	1250
HE 320 A	124,4	310	300	9	15,5	27	**97,6**	22928	1480	6985	466
320 B	161,3	320	300	11,5	20,5	27	**127**	30823	1930	9239	616
320 M	312,0	359	309	21	40	27	**245**	68135	3800	19709	1280
HE 340 A	133,5	330	300	9,5	16,5	27	**105**	27693	1680	7436	496
340 B	170,9	340	300	12	21,5	27	**134**	36656	2160	9690	646
340 M	315,8	377	309	21	40	27	**248**	76372	4050	19711	1280
HE 360 A	142,8	350	300	10	17,5	27	**112**	33090	1890	7887	526
360 B	180,6	360	300	12,5	22,5	27	**142**	43193	2400	10141	676
360 M	318,8	395	308	21	40	27	**250**	84867	4300	19522	1270
HE 400 A	159,0	390	300	11	19	27	**125**	45069	2310	8564	571
400 B	197,8	400	300	13,5	24	27	**155**	57680	2880	10819	721
400 M	325,8	432	307	21	40	27	**256**	104119	4820	19335	1260
HE 450 A	178,0	440	300	11,5	21	27	**140**	63722	2900	9465	631
450 B	218,0	450	300	14	26	27	**171**	79887	3550	11721	781
450 M	335,4	478	307	21	40	27	**263**	131484	5500	19339	1260
HE 500 A	197,5	490	300	12	23	27	**155**	86975	3550	10367	691
500 B	238,6	500	300	14,5	28	27	**187**	107176	4290	12624	842
500 M	344,3	524	306	21	40	27	**270**	161929	6180	19155	1250
HE 550 A	211,8	540	300	12,5	24	27	**166**	111932	4150	10819	721
550 B	254,1	550	300	15	29	27	**199**	136691	4970	13077	872
550 M	354,4	572	306	21	40	27	**278**	197984	6920	19158	1250
HE 600 A	226,5	590	300	13	25	27	**178**	141208	4790	11271	751
600 B	270,0	600	300	15,5	30	27	**212**	171041	5700	13530	902
600 M	363,7	620	305	21	40	27	**285**	237447	7660	18975	1240

TRAVI HE SOLLECITATE A FLESSIONE

mm		carichi massimi in kg riferiti a distanze degli appoggi di m:											
		2	2.5	3	3.5	4	4.5	5	6	7	8	9	10
100	A	4638	3695	3064	2611	2269	2001	1785	1457	1218	1034		
	B	5719	4557	3779	3220	2798	2469	2202	1798	1503	1277		
	M	12076	9623	7981	6802	5913	5216	4655	3803	3182	2706		
120	A	6744	5377	4463	3807	3324	2926	2614	2142	1799	1537	1328	
	B	9163	7306	6064	5173	4501	4083	3553	2912	2446	2090	1808	
	M	18328	14615	12132	10350	9007	7957	7112	5831	4802	4191	3627	
140	A	9881	7882	6546	5588	4866	4302	3848	3162	2664	2285	1984	1739
	B	13757	10974	9115	7781	6777	5992	5361	4406	3714	3186	2769	2428
	M	26178	20885	17346	14810	12899	11406	10206	8389	7073	6070	5276	4629
160	A	14019	11188	9295	7939	6918	6121	5480	4510	3810	3277	2855	2512
	B	19819	15817	13141	11225	9782	8655	7749	6379	5389	4635	4039	3555
	M	36592	28804	23934	20444	17817	15756	14117	11624	9822	8451	7368	6487
180	A	18745	14964	12438	10635	9266	8212	7295	6059	5128	4420	3862	3408
	B	27162	21683	18022	15387	13427	11887	10650	8781	7431	6406	5598	4941
	M	47694	38075	31648	27044	23580	20876	18704	15424	13055	11257	9838	8685
200	A	24811	19811	16470	14077	12278	10874	9746	8044	6815	5884	5150	4554
	B	36357	29031	24136	20625	17995	15929	14286	11792	9994	8630	7555	6683
	M	61677	49252	40950	35004	30532	27042	24240	20011	16961	14648	12826	11348
220	A	32859	26242	21822	18658	16278	14422	12932	10684	9064	7836	6870	6087
	B	46961	37504	31188	26666	23266	20613	18484	15272	12958	11204	9824	8706
	M	77846	62172	51702	44208	38572	34176	30647	25325	21490	18584	16298	14446
240	A	43079	34409	28619	24475	21359	18928	16979	14038	11921	10318	9057	8037
	B	59866	47818	39772	34013	29683	26306	23630	19511	16570	14342	12591	11174
	M	114886	91768	76329	65279	56972	50494	45295	37458	31815	27544	24187	21470
260	A	53578	42633	35465	30335	26479	23743	21061	17425	14809	12830	11276	10109
	B	73414	58648	48787	41732	36428	32293	28975	23975	20378	17656	15519	13790
	M	137896	110162	91644	78392	68432	60666	54436	45048	38293	33184	29172	25928
280	A	64487	51521	42864	36670	32014	28385	25474	21088	17933	15549	13677	12164
	B	88114	70398	58571	50108	43748	38790	34813	28822	24513	21256	18700	16634
	M	162822	130088	108233	92596	80844	71683	64335	53266	45306	39288	34566	30750
300	A	80463	64291	53495	45771	39967	35443	31815	26350	22422	19454	17125	15245
	B	107286	85724	71329	61031	53292	47260	42423	35138	29901	25944	22840	20334
	M	222244	177581	147766	126436	110398	97917	87898	72805	61968	53776	47351	42164
320	A	94525	75532	62854	53784	46969	41659	37400	30988	26380	22899	20170	17968
	B	123266	98498		70138	61252	54326	48773	40411	34402	29864	26306	23434
	M	242860	193948	81966	138114	120620	106986	96055	79596	67771	58840	51839	46190
340	A				61073	53340	47314	42483	35210	29985	26040	22948	20454
	B			161398	78525	68584	60387	54586	45276	38559	33488	29514	26308
	M			71365	147246	128608	114084	102440	84912	72321	62816	55368	49360
360	A			91758	68728	60032	53256	47824	39648	33770	29344	25872	23072
	B			172056	87275	76232	67628	60730	50348	42892	37264	32855	29300
	M			80304	156382	136600	121186	108830	90233	76879	66800	58906	52540
400	A			101974	84043	73420	65144	58511	48530	41365	35960	31728	28318
	B			182716	104783	91540	81222	72953	60510	51578	44840	39565	35314
	M			98185	175378	153216	135950	122112	101291	86345	75072	66247	59136
450	A			122415		92240	81859	73540	61027	52049	45280	39984	35720
	B			204885		112916	100208	90025	74707	63771	55432	48950	43730
	M					174949	155261	139485	115755	98730	85896	75855	67770
500	A					112980	100280	90105	74803	63829	55560	49094	43890
	B					136532	121141	108889	90398	77137	67144	59330	53042
	M					196680	174572	156858	130220	111116	96720	85463	76404
600	A					152568	135448	121734	101119	86343	75216	66522	59532
	B					181552	161179	144860	120328	102745	89504	79159	70840
	M					243980	216602	194671	161703	138074	120820	106577	95198

acciaio con carico di sicurezza σ = 16 kg/mm^2 — carico totale in kg uniformemente distribuito

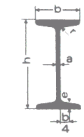
TRAVI HE SOLLECITATE A COMPRESSIONE

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	26874	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	257310	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
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	205119
	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

pilastri acciaio con carico di sicurezza σ = 16 kg/mm^2

TRAVE I NP SERIE NORMALE

UNI 5679-73 - UNI 7210-73

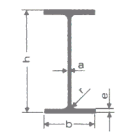


su richiesta le travi IPN si forniscono tagliate a misura

h	b	a	e	r	sezione	peso	momenti di inerzia		moduli di resistenza		raggi di inerzia	
							Jx	Jy	Wx	Wy	i_x	i_y
mm	mm	mm	mm	mm	cm^2	kg/m	cm^4	cm^4	cm^3	cm^3	cm	cm
80	42	3.9	5.9	3.9	7.57	**5.94**	77.7	6.28	19.4	2.99	3.20	0.91
100	50	4.5	6.8	4.5	10.6	**8.34**	170	12.1	34.1	4.86	4.00	1.07
120	58	5.1	7.7	5.1	14.2	**11.1**	327	21.4	54.5	7.38	4.80	1.23
140	66	5.7	8.6	5.7	18.2	**14.3**	572	35.1	81.8	10.6	5.60	1.39
160	74	6.3	9.5	6.3	22.8	**17.9**	934	54.6	117	14.8	6.40	1.55
180	82	6.9	10.4	6.9	27.9	**21.9**	1444	81.2	161	19.8	7.20	1.71
200	90	7.5	11.3	7.5	33.4	**26.2**	2138	116	214	25.9	8.00	1.87
220	98	81	12.2	8.1	39.5	**31.0**	3055	162	278	33.1	8.79	2.03
240	106	8.7	13.1	8.7	46.1	**36.2**	4239	220	353	41.5	9.59	2.19
260	113	9.4	14.1	9.4	53.3	**41.9**	5735	287	441	50.9	10.4	2.32
280	119	10.1	15.2	10.1	61.0	**47.9**	7575	363	541	61.0	11.1	2.44
300	125	10.8	16.2	10.8	69.0	**54.2**	9785	450	652	71.9	11.9	2.55
320	131	11.5	17.3	11.5	77.7	**61.0**	12490	554	781	84.6	12.7	2.67
340	137	12.2	18.3	12.2	86.7	**68.4**	15670	674	923	98.4	13.5	2.8
360	143	13	19.5	13	97.0	**76.1**	19580	816	1087	114	14.2	2.90
400	155	14.4	21.6	14.4	118	**92.5**	29210	1158	1461	149	15.7	3.13
450	170	16.2	24.3	16.2	147	**115**	45790	1722	2035	203	17.7	3.42
500	185	18	27	18	179	**141**	68650	2474	2746	268	19.6	3.71
600	215	21.6	32.4	21.6	254	**199**	138800	4679	4626	435	23.4	4.29

TRAVE I PE

UNI 5398



su richiesta le travi IPE si forniscono tagliate a misura

h	b	a	e	r	sezione	peso	momenti di inerzia		moduli di resistenza		raggi di inerzia	
							Jx	Jy	Wx	Wy	i_x	i_y
mm	mm	mm	mm	mm	cm^2	kg/m	cm^4	cm^4	cm^3	cm^3	cm	cm
80	46	3.8	5.2	5	7.5	**6.0**	80.1	8.49	20.0	3.69	3.24	1.05
100	55	4.1	5.7	7	10.3	**8.1**	171	15.9	34.2	5.79	4.07	1.24
120	64	4.4	6.3	7	13.2	**10.4**	318	27.7	53	8.65	4.90	1.45
140	73	4.7	6.9	7	16.4	**12.9**	541	44.9	77.3	12.3	5.74	1.65
160	82	5.0	7.4	9	20.1	**15.8**	869	68.3	109	16.7	6.58	1.84
180	91	5.3	8.0	9	23.9	**18.8**	1320	101	146	22.2	7.42	2.05
200	100	5.6	8.5	12	28.5	**22.4**	1940	142	194	28.5	8.26	2.24
220	110	5.9	9.2	12	33.4	**26.2**	2770	205	252	37.3	9.11	2.48
240	120	6.2	9.8	15	39.1	**30.7**	3890	284	324	47.3	9.97	2.69
270	135	6.6	10.2	15	45.9	**36.1**	5790	420	429	62.2	11.2	3.02
300	150	7.1	10.7	15	53.8	**42.2**	8360	604	557	80.5	12.5	3.35
330	160	7.5	11.5	18	62.6	**49.1**	11770	788	713	98.5	13.7	3.55
360	170	8.0	12.7	18	72.7	**57.1**	16270	1040	904	123	15.0	3.79
400	180	8.6	13.5	21	84.5	**66.3**	23130	1320	1160	146	16.5	3.95
450	190	9.4	14.6	21	98.8	**77.6**	33740	1680	1500	176	18.5	4.12
500	200	10.2	16.0	21	116	**90.7**	48200	2140	1930	214	20.4	4.31
550	210	11.1	17.2	24	134	**106**	67120	2670	2440	254	22.3	4.45
600	220	12.0	19.0	24	156	**122**	92080	3390	3070	308	24.3	4.66

TRAVI IPE SOLLECITATE A FLESSIONE

carico totale in kg uniformamente distribuito
acciaio con carico di sicurezza σ = 16 kg/mm^2

mm	carichi massimi in kg riferiti a distanze degli appoggi di m:											
	2	2.5	3	3.5	4	4.5	5	6	7	8	9	10
80	1268	1009	835	710	620	560	450	350				
100	2173	1731	1435	1222	1062	936	835	750	670	580		
120	3371	2688	2230	1902	1654	1461	1305	1068	896	750		
140	4921	3925	3259	2782	2482	2141	1914	1572	1323	1134	983	
160	6944	5541	4603	3931	3425	3029	2711	2230	1882	1618	1408	1237
180	9306	7428	6173	5274	4597	4068	3644	3002	2538	2186	1907	1681
200	12371	9877	8210	7016	6118	5417	4854	4004	3391	2925	2557	2259
220		12837	10673	9124	7959	7050	6320	5219	4425	3822	3348	2964
240		16518	13732	11742	10265	9078	8141	6728	5710	4938	4332	3840
270		21274	18196	15563	13584	12040	10802	8935	7592	6575	5776	5130
300			23630	20222	17555	15654	14048	11629	9890	8574	7542	6708
330			30214	25903	22620	20060	18007	14916	12694	11015	9698	8635
360				32861	28700	25457	22857	18943	16130	14007	12343	11000
400					36855	32697	29364	24349	20747	18030	15091	14185
450						42317	38012	31534	26885	23379	20635	18424
500							48954	40629	34656	30154	26632	23797
550								51417	43875	38192	33748	30172
600								64761	55283	48144	42564	38076

TRAVI IPE SOLLECITATE A COMPRESSIONE

pilastri
acciaio con carico di sicurezza σ = 16 kg/mm^2

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
80	3574	2272	1583	1166								
100	6618	4291	2953	2177	1671							
120	10057	7489	5201	3784	2937	2323	1884					
140	14183	11359	8437	6116	4702	3727	3023	2503				
160	18917	15611	12711	9403	7210	5695	4614	3810	3203	2732		
180	24050	20670	17225	13755	10563	8367	6768	5607	4709	4021	3466	
200	30000	26205	22463	19079	15099	11875	9702	7985	6745	5728	4924	3781
220		32987	28886	24855	21461	17183	13916	11517	9698	8259	7059	5419
240		40623	35954	31595	27681	23696	19190	15878	13310	11353	9790	7483
270		50301	45614	41258	36537	32495	28355	23167	19689	16690	14513	11110
300		61049	56631	51855	46782	42403	38088	33756	28503	24454	20944	16000
330			68136	62600	57234	51896	46586	41907	36688	31596	27217	20780
360			81342	75532	69652	63912	58452	52396	47477	41841	36236	27498
400			95886	89536	83456	76384	70051	63474	58528	53019	45581	34666
450				106093	99421	92444	85448	78646	71207	65593	57904	44280
500				128000	120519	111807	104269	96165	88380	80346	73359	56932
550					141052	132345	122514	112842	105615	96576	88962	70065
600					167516	156981	147692	137142	128000	117183	108995	89784