



Developing steel construction.

High strength rolled steel.

Case study

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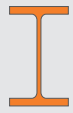
STEEL AND CONCRETE IN CONSTRUCTION

 **Empire State Building**
1931, USA

Steel Construction took:
1 year



New-York



Moscow State University

1952, USSR

Steel

Construction took:

4 years



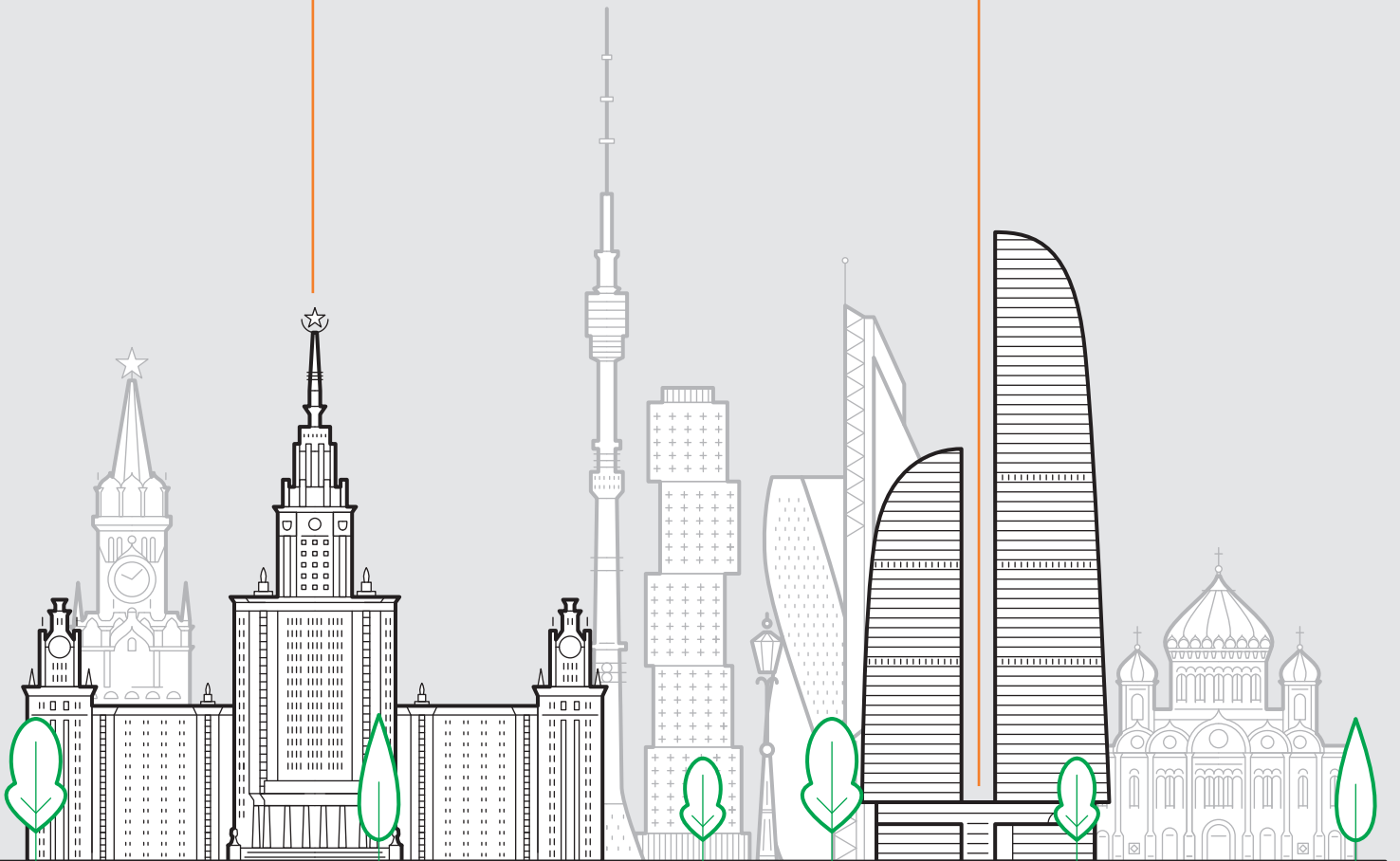
Federation Towers

2017, the Russian Federation

Concrete

Construction took:

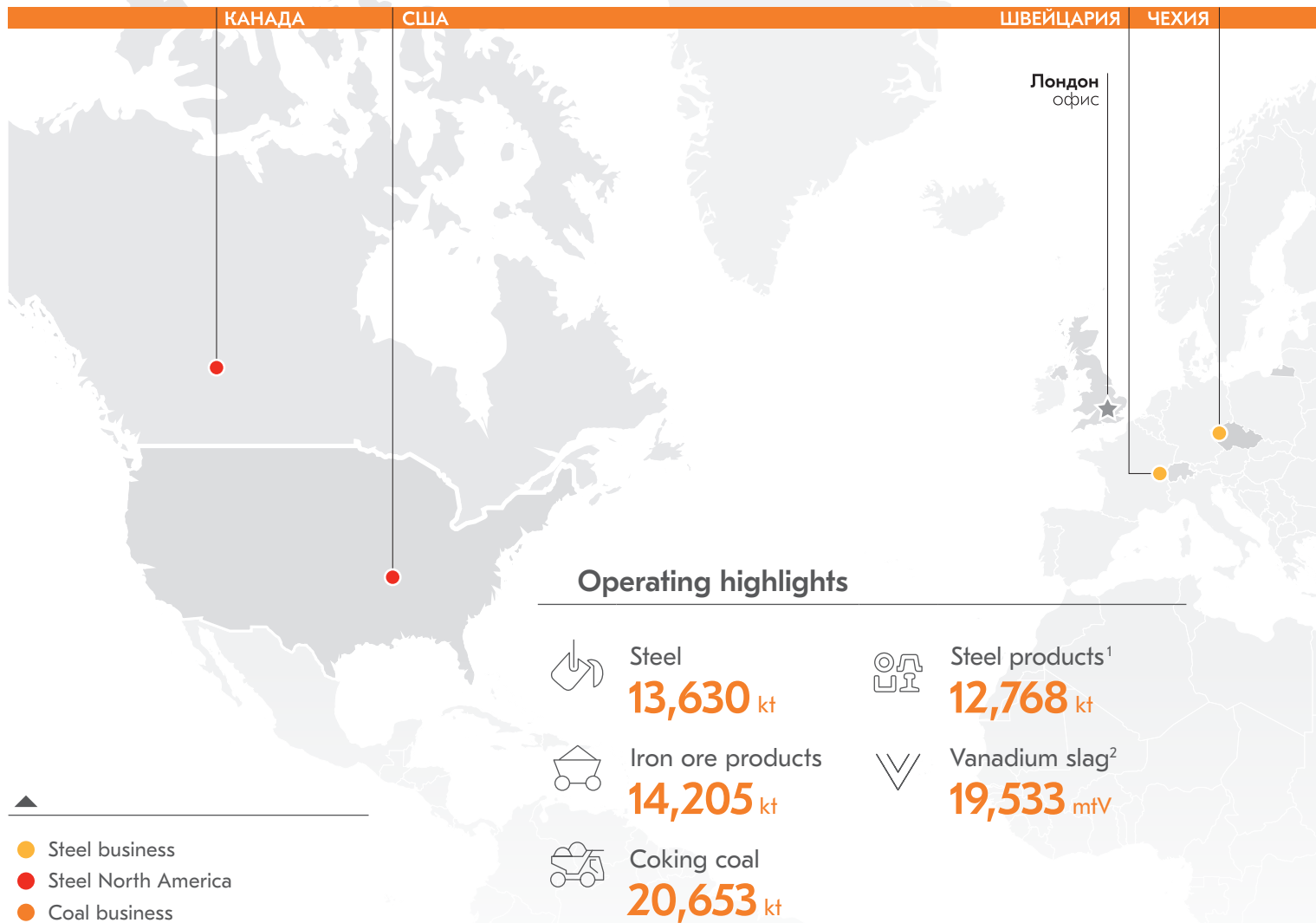
12 years



Moscow

ABOUT EVRAZ

EVRAZ is one of the largest vertically-integrated steel and mining companies with operations in the Russian Federation, the USA, Canada, the Czech Republic, Kazakhstan.





A global mining and steelmaking company

- Among the top-30 steel producers in the world
- The key assets are located in Russia and North America
- Constituent of FTSE-100
- Sales to more than 70 countries worldwide



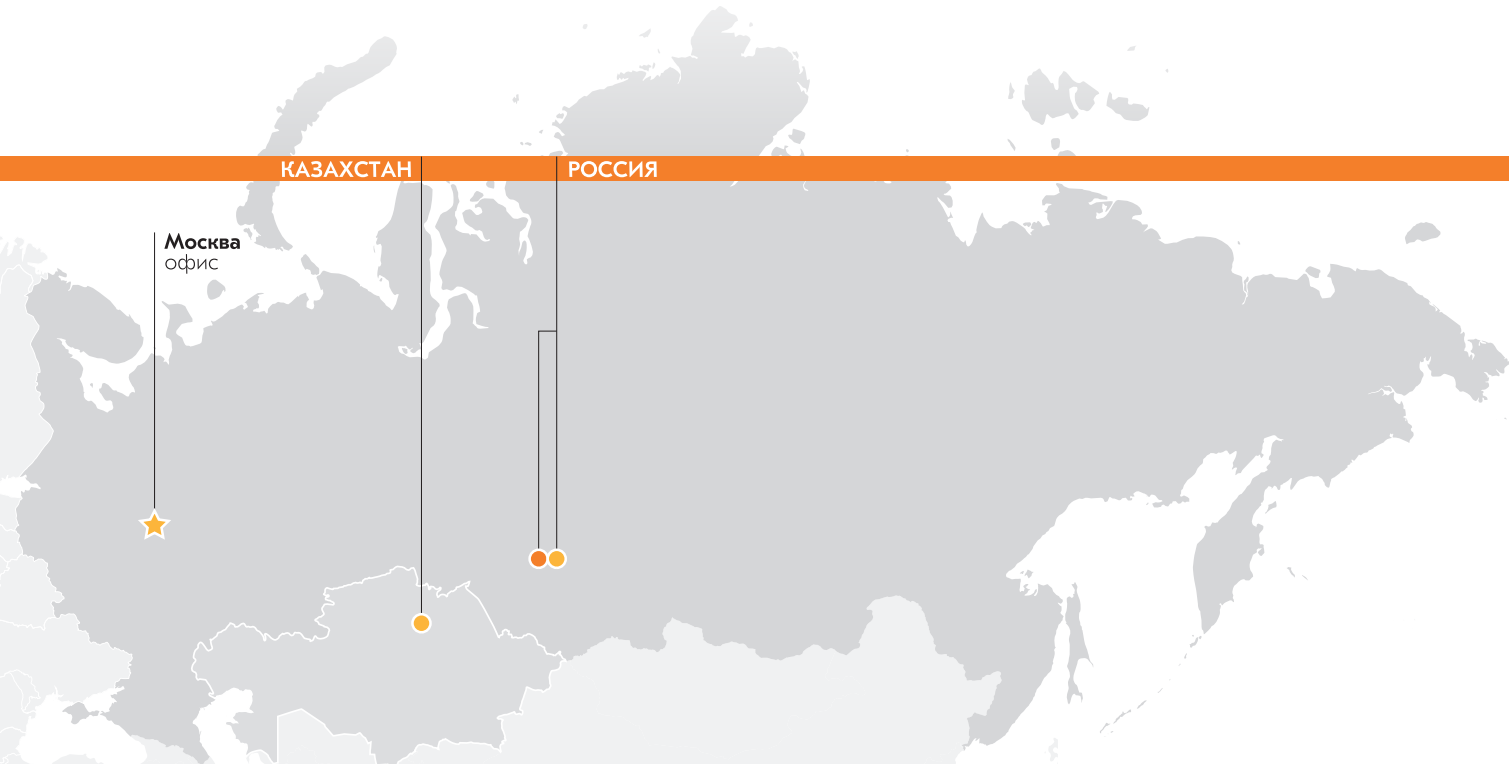
Leader in the market of steel products for infrastructural projects

- #1 in Russian and North American rail markets
- #1 in Russian steel product and beam markets
- #1 in North American LDP market



Low cost production along the value chain

- Self-sufficient in terms of iron ore — 70%, in terms of coal — 221%
- Leader among producers of coking coal in Russia, one of top-5 in the world



Financial highlights

Revenue
US\$ million

9,754

EBITDA
US\$ million

2,212

EBITDA margin
%

22.7

CAPEX³
US\$ million

657

Notes:

1. Net of re-rolled volumes;
2. In tonnes of pure vanadium;
3. Including payments on deferred terms recognised in financing activities.

All the data — as of 2020 Year-End.



10970
10970

10970
10970

10970
10970

10970
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10970
10970

10970
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SHAPES APPLIED IN CONSTRUCTION

Steel structures made with EVRAZ products are applied in all climate and seismic zones of our country and abroad.

Hot-rolled i-beams may be applied to produce frames for any type of buildings.



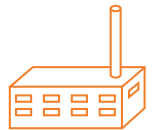
инфраструктура



уникальные
здания
и сооружения



жилье/
общественные
здания



промышленность

I-BEAMS

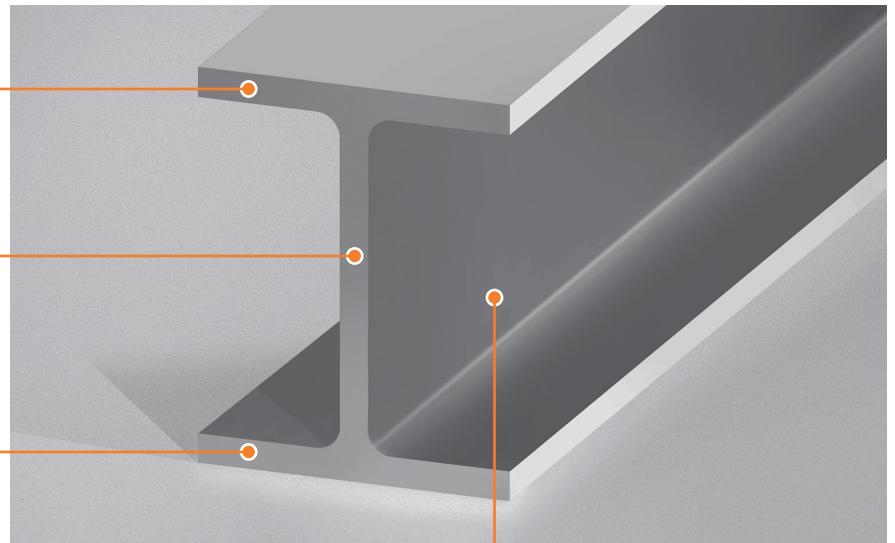
Hot-rolled construction i-beams demonstrate better strength vs welded beams.

Length of beams —
6 to 24 m

Predefined chemical composition and
high quality of micro structure

333

Size and profile of i-beams



EVRAZ's products are in the core of landmark Russian projects: Amursky gas plant, Plesetsk spaceport, Yamal SPG and Arctic SPG-2 compressed gas stations and more.

Long products are traditionally used in construction as pillars, beams, trusses and connections.

I-beams are used as floor beams and covering due to their bending behavior.

I-beams are also widely used in columns, which makes the joints of structures quite simple. In order to optimize steel consumption the engineers use several types of rolled products.

EVRAZ NTMK Wide beam mill produces a range of 324 profiles of H-beams, EVRAZ ZSMK mid-sections mill produces 9 profiles of H-beams.

Strength classes:

- normal strength **S245, S255**
- increased strength **S345, S355**
- high strength **S390, S440**

S390 STRENGTH I-BEAM

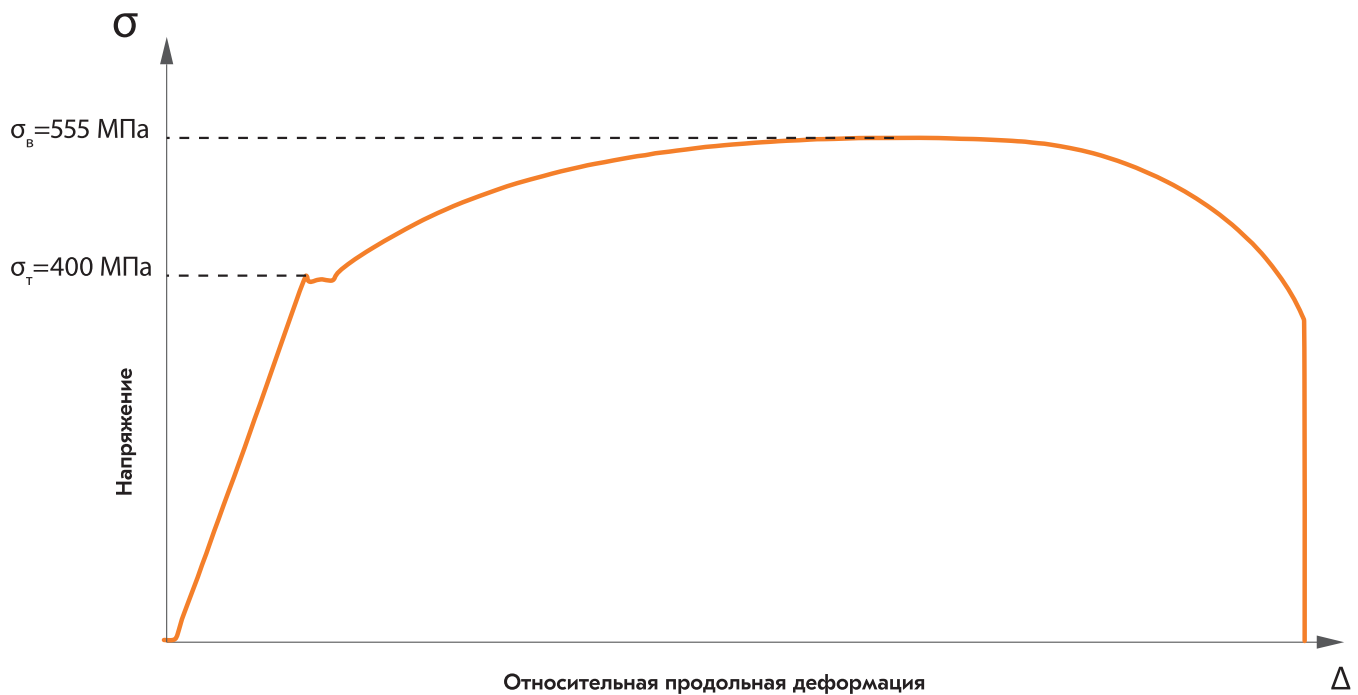
I-beams are manufactured in EVRAZ NTMK Wide beam mill.



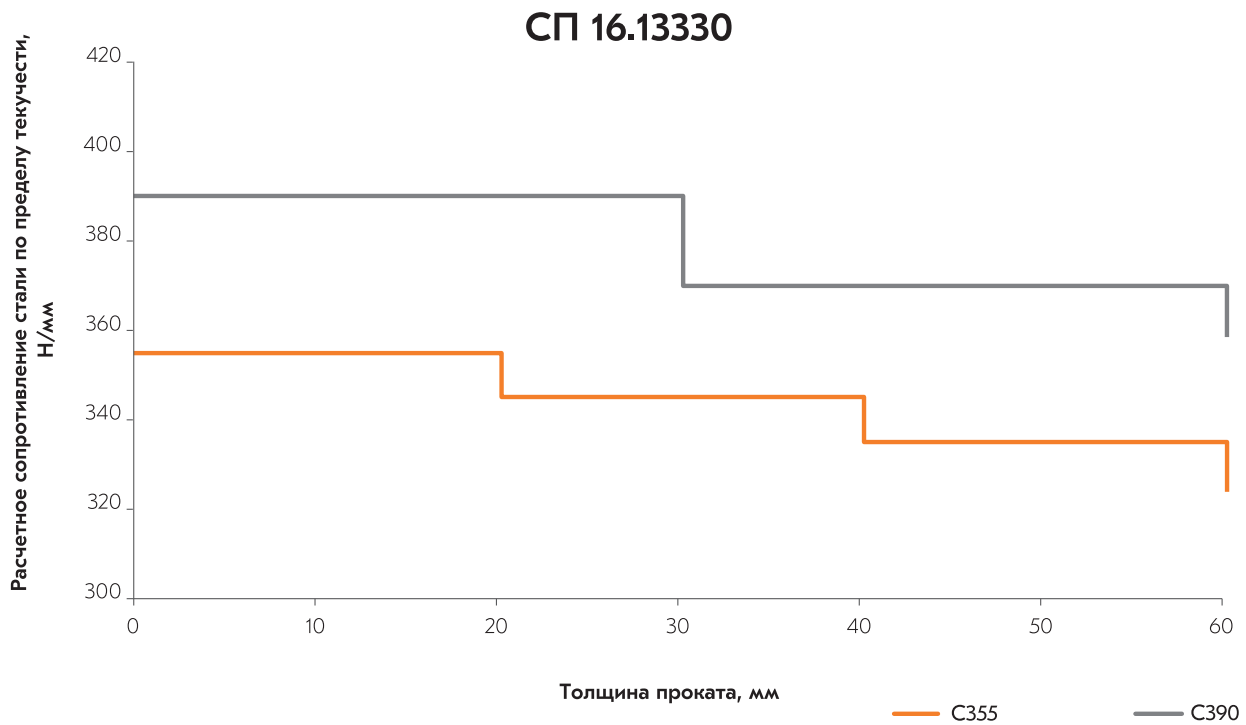
Product catalog

Strength class	Element mass fraction, %											Standard document
	C, max.	Mn	Si	Cr, max.	Ni, max.	Cu, max.	V, max.	Nb	Al	Ti, max.	C eq., max.	
S390	0.12	1.30-1.70	0.15-0.50	0.30	0.30	0.30	0.12	max. 0.09	0.02-0.06	0.035	0.46	GOST 27772
S390B	0.16	1.30-1.70	0.15-0.50	0.30	0.50	0.30	0.12	—	0.02-0.06	0.035	0.46	GOST 57837

DIAGRAM OF S390 STEEL PERFORMANCE



DEPENDENCE OF DESIGNED RESISTANCE ON ROLLED THICKNESS



It is allowed to not reduce the yield strength in estimations with thickness of rolled flanges up to 30 mm when assigning the steel elements strength class S390.


WELDABILITY OF HGH-STRENGTH STEEL

The steel belongs to the M03 group – low-alloy structural steel of the pearlitic class with a guaranteed minimum yield strength above 360 to 500 MPa.



STO 59127210-001 (rus)

$$C_{eq.} = C + \frac{Mn}{6} + \frac{Si}{24} + \frac{Cr}{5} + \frac{Ni}{40} + \frac{Cu}{13} + \frac{V}{14} + \frac{P}{2} \leq 0.46$$

The background of the entire page is a close-up, high-angle photograph of numerous parallel metal beams. The beams are arranged in a regular, repeating pattern, creating a strong sense of depth and perspective. The lighting is dramatic, with bright highlights on the top surfaces of the beams and deep shadows in the gaps between them, emphasizing their metallic texture and industrial nature.

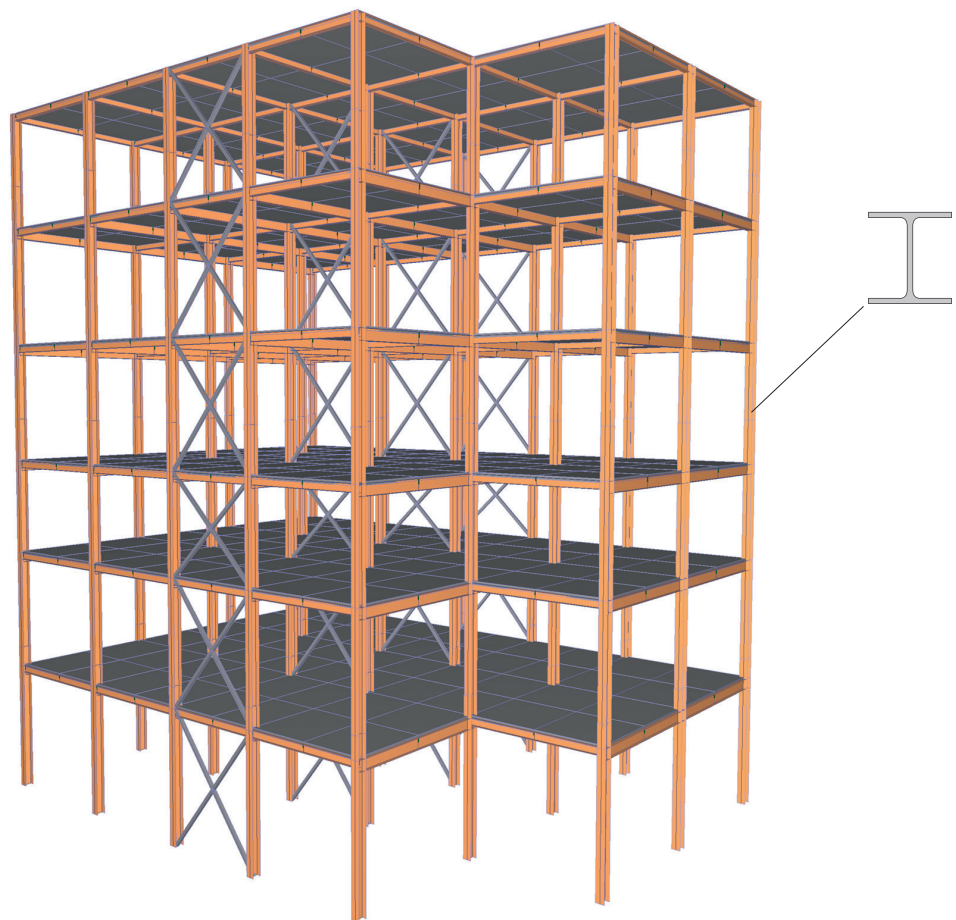
In general, in buildings with spans over 30 m (as well as for smaller spans with forces in the chord of more than 90 tons), trusses with chord made with i-beams demonstrate cost-savings vs connected angles or pipes.

PERFORMANCE IN STRUCTURAL ELEMENTS

CASE 1

S390 strength steel in pillars in multi-story buildings

The technical and economic analysis of the cross-sections of i-beam columns of strength class S345 shows a reduction in steel consumption for columns of about 83 tons when using the updated range GOST 57837 and steel S390.



I type 1 columns: 40K5 (S345) — 40K4.5 (S390)
type 2 columns: 40K5 (S345) — 40K3 (S390)
type 3 columns: 40K5 (S345) — 40K1 (S390)

Cost savings are around:

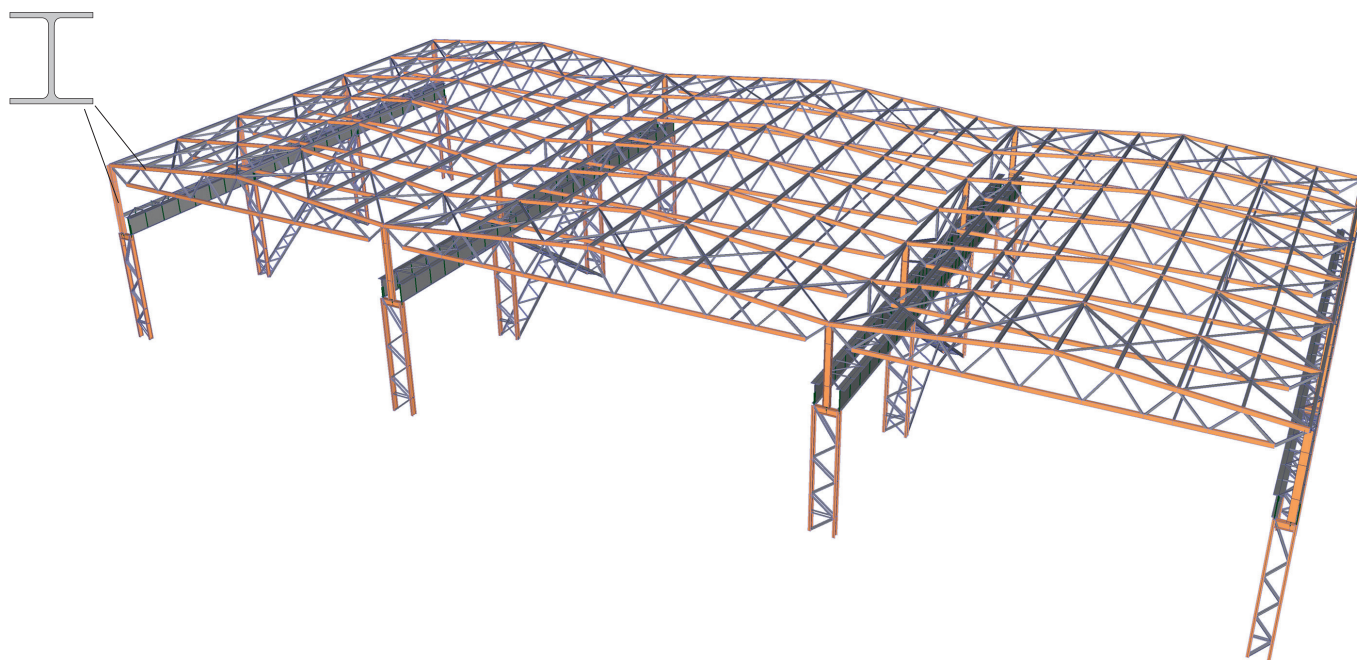
12 MILLION roubles


for production and assembly of steel elements

CASE 2

S390 strength steel in pillars in single – story buildings

The technical and economic analysis of the cross-sections of i-beam columns of strength class S345 shows a reduction in steel consumption for columns of about 21 tons when using the updated range GOST 57837 and steel S390.



 edge columns: 35B2 (S345) — 30B1 (S390)
interior columns: 40B1 (S345) — 35B1 (S390)
overcrane part: 50SH1 (S345) — 40SH1 (S390)

Cost savings are around:

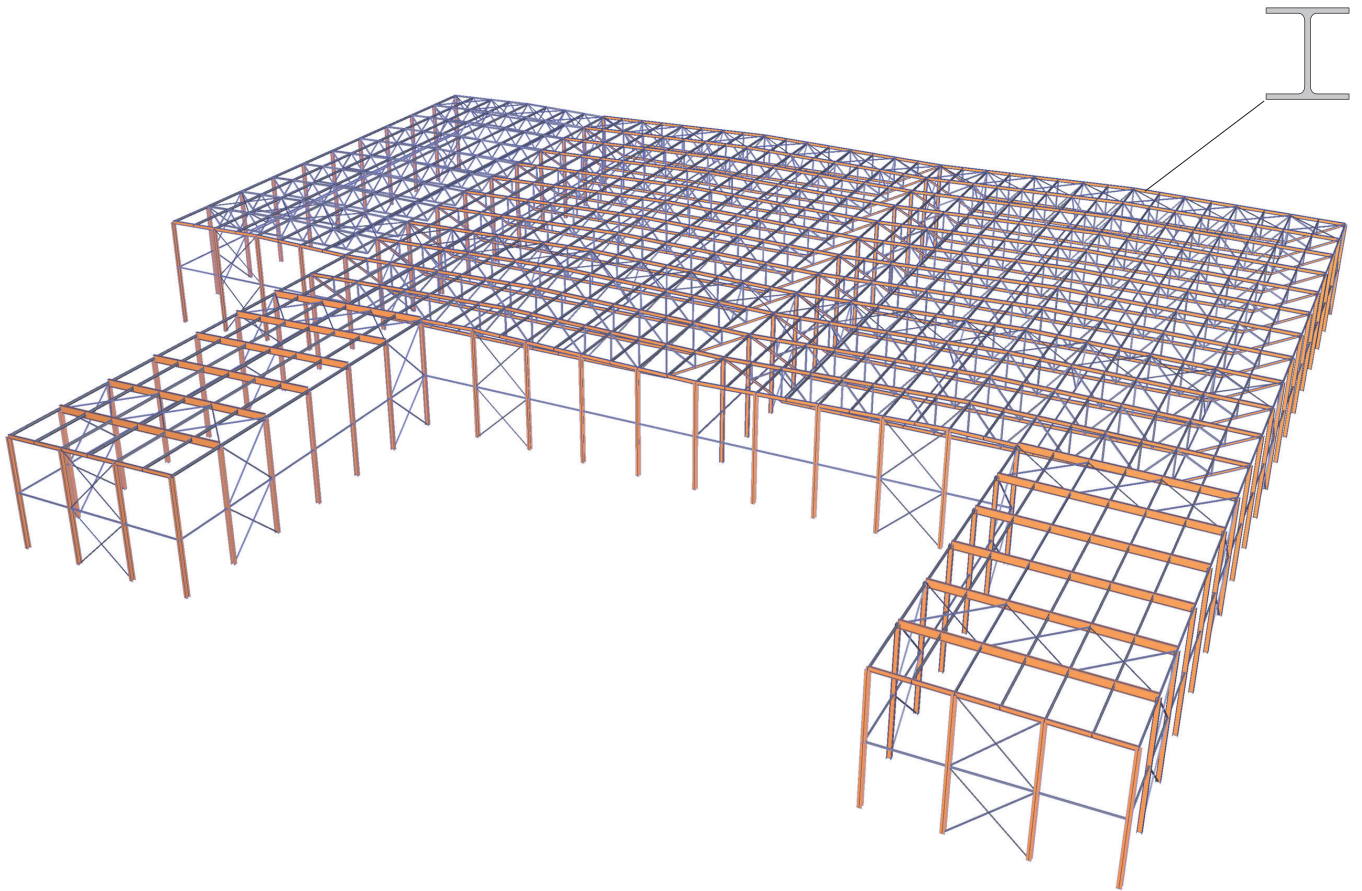
3 MILLION roubles

for production and assembly of steel elements

CASE 3

S390 strength steel in elements of trusses

The technical and economic analysis of trusses shows a reduction in steel consumption for truss elements of about 71 tons when using updated range GOST 57837 and steel S390.



I top chord: 35K2 (S345) — 35K15 (S390)
bottom chord: 35K2 (S345) — 35SH2 (S390)
support strut: 25K2 (S345) — 25SH2 (S390)

Cost savings are around:

8 MILLION roubles

for production and assembly of steel elements

CUMULATIVE COST-SAVINGS FOR PROJECTS

CASE 1

Optimization of industrial building with strength class S390 in the columns of industrial stacks (Omsk oil refinery)

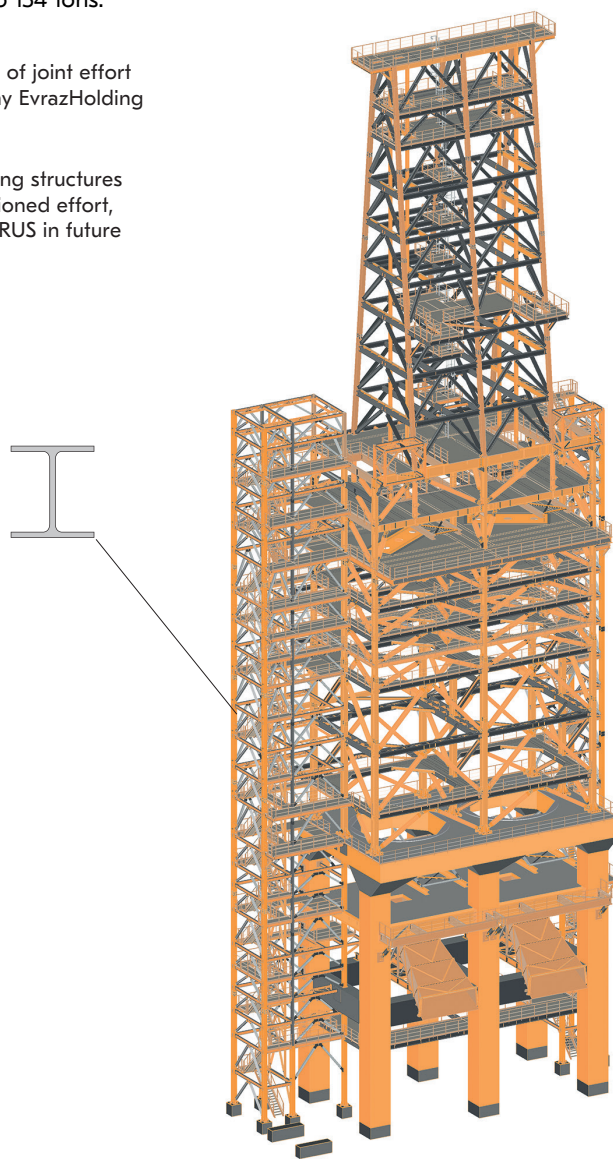


Full report

The technical and economic analysis and the optimization of technical solutions showed a 27% reduction in steel consumption for the supporting frame elements when using the updated range of GOST 57837 and steel S390: with the tonnage of column structures and vertical ties about 357 tons, the savings amounted to 134 tons.

The indexes above are the result of joint effort of engineers of Trading Company EvrazHolding and JSC TECHNIP RUS.

The principles of design of bearing structures implemented in the above mentioned effort, will be applied by JSC TECHNIP RUS in future projects.



Cost savings are around:

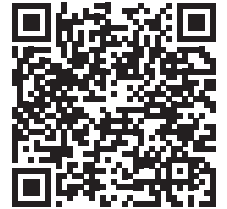
20 MILLION roubles

for production and assembly of steel elements

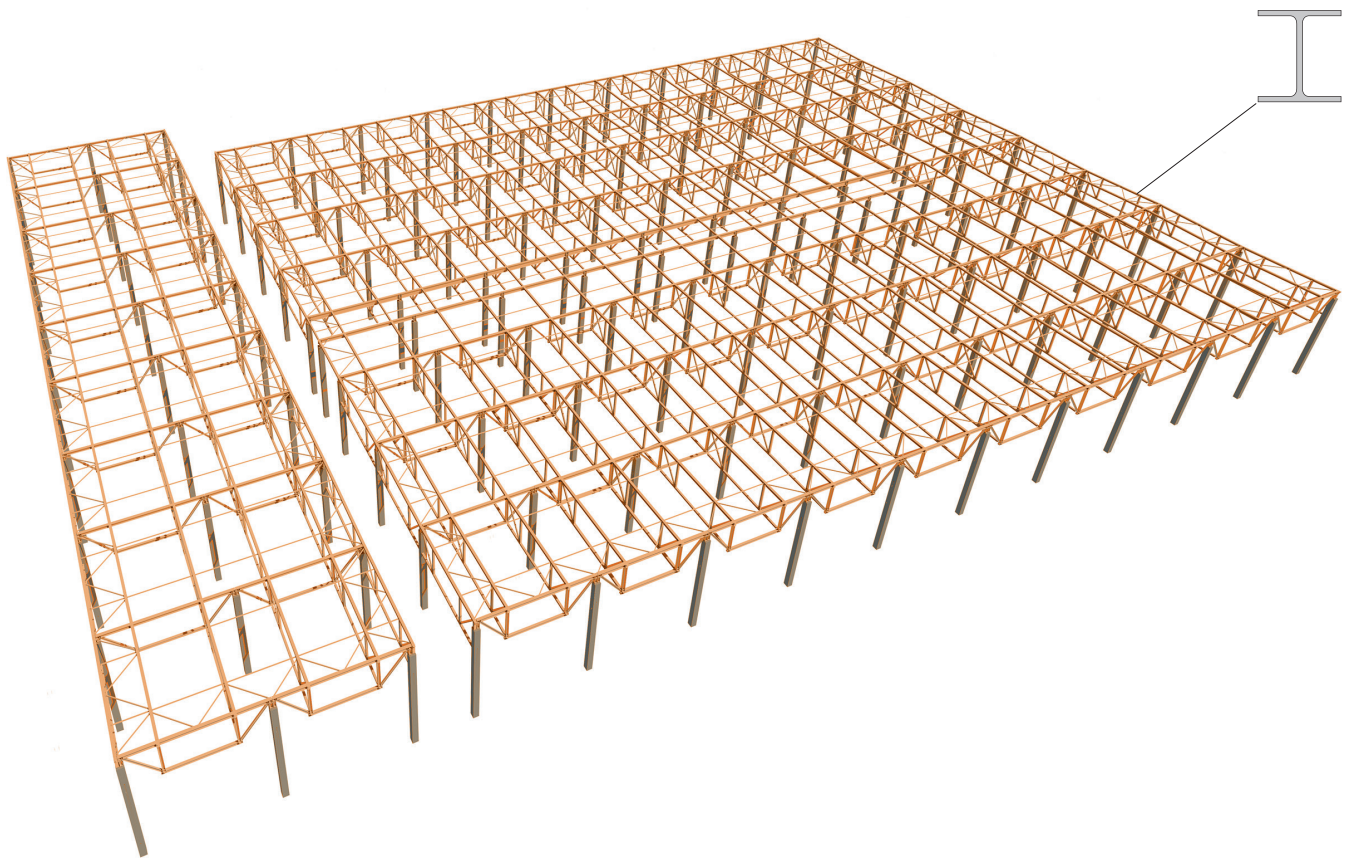
CASE 2

Optimization of industrial building with strength class S390 in trusses (Miratorg agricultural holding)

The technical and economic analysis of cross-sections of structures of trusses and the optimization of technical solutions showed a 12% reduction in weight of truss structures (from 580 to 512 tons) when using the updated range GOST 57837 and steel S390.



Full report (rus)



Cost savings are around:

8 MILLION roubles

for production and assembly of steel elements



BILFINGER

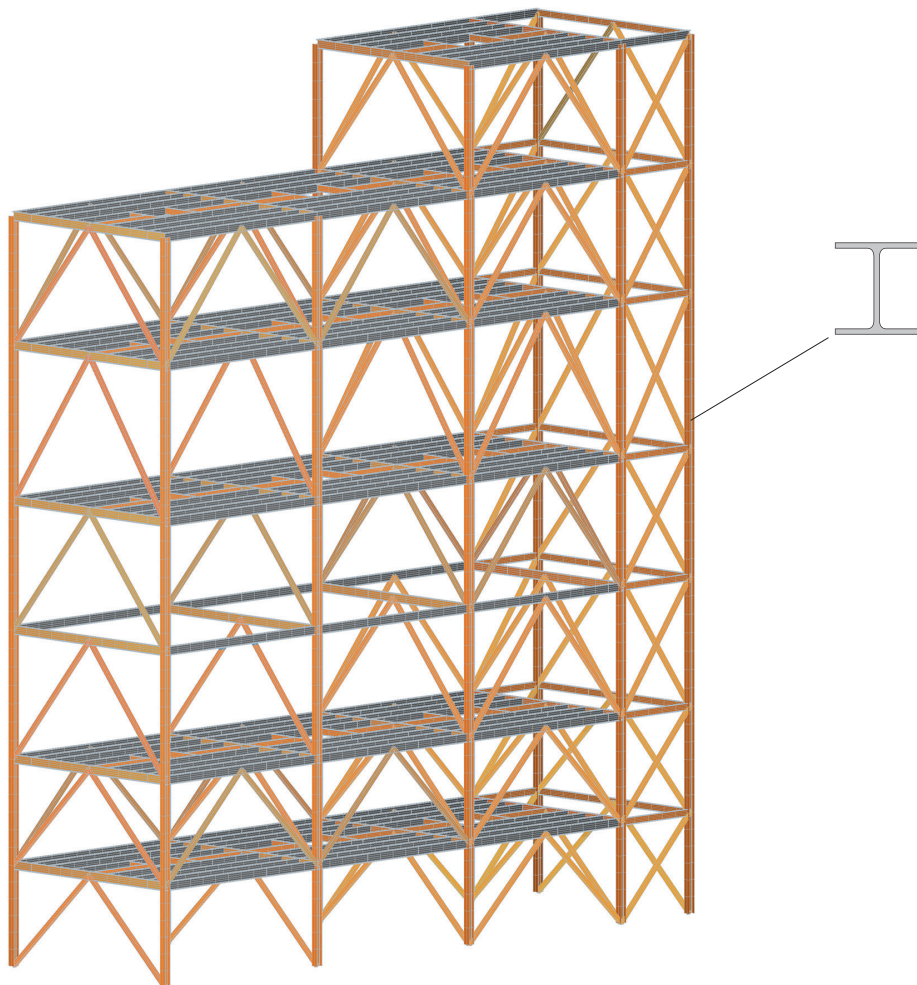
CASE 3

Optimization of industrial building with strength class S390 in the columns of industrial stacks (PAO Tatneft)

The technical and economic analysis of the sections of vertical structural elements and the optimization of technical solutions showed a 51% reduction in the weight of the columns when using the updated range of GOST 57837 and steel S390.



Full report (rus)



Cost savings are around:

8 MILLION roubles

for production and assembly of steel elements



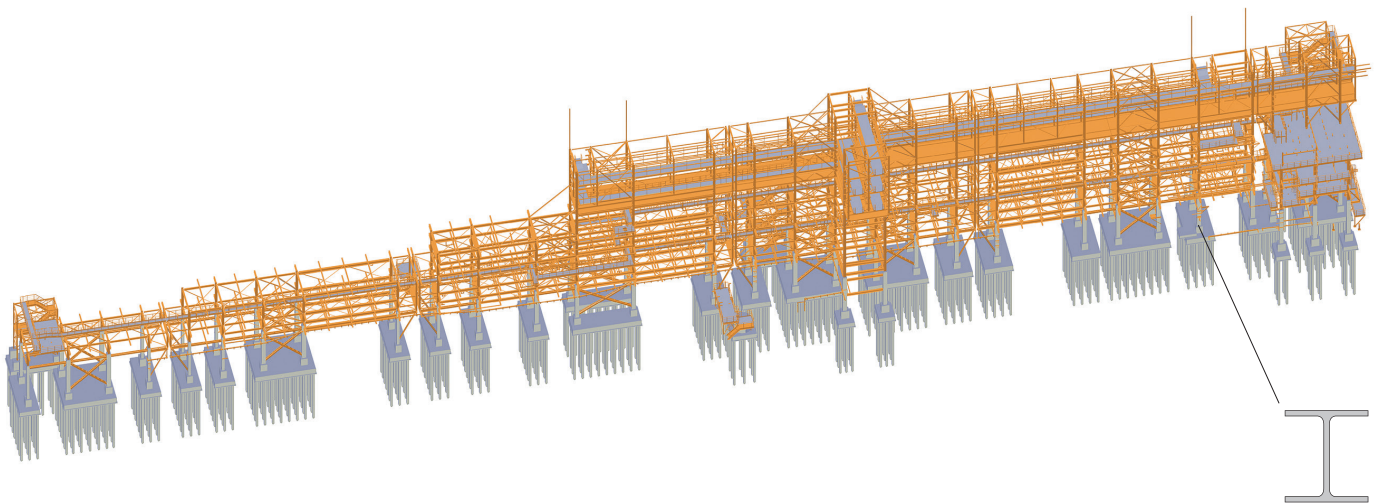
CASE 4

Optimization of combined process rack of the aromatics delivery complex (PAO Tatneft)

The technical and economic analysis and the optimization of technical solutions showed a 19% reduction in steel consumption for all structural elements when using the updated range of GOST 57837 and steel S390: with tonnage of frame of 647 tons the savings were 126 tons.



Full report (rus)



Cost savings are around:

7.8 MILLION roubles

for production and assembly of steel elements



EVRAZ'S ECOSYSTEM

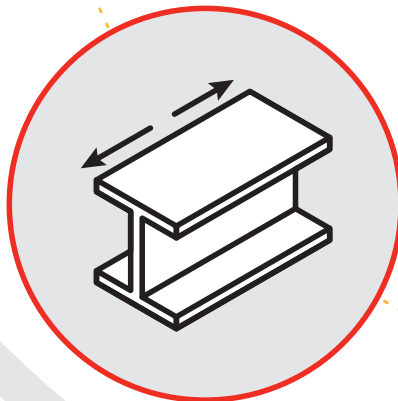
Fair and transparent
price – plate based formula



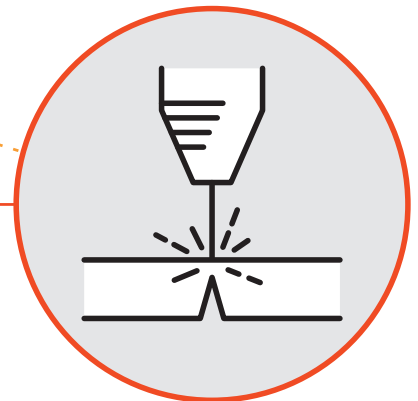
Orders taken on any day
of the going month



Cut sizes (6 to 24 meters)



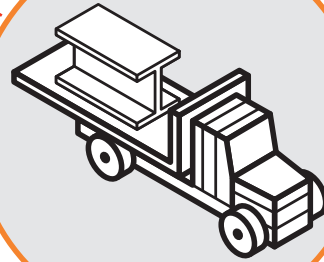
Additional treatment
in process centers





**IT-service – availability
of i-beams in warehouses**

**Order of minimum lots
of rolled products**



**Minimum difference
(500 rub/ton) between S355
and S390 i-beams**



**The actual stock
balance in hubs: any beams
available**



PROJECTS WITH HOT-ROLLED I-BEAMS BY EVRAZ MADE WITH STEEL GRADES S390, S440

Construction in progress



Housing complex River Park

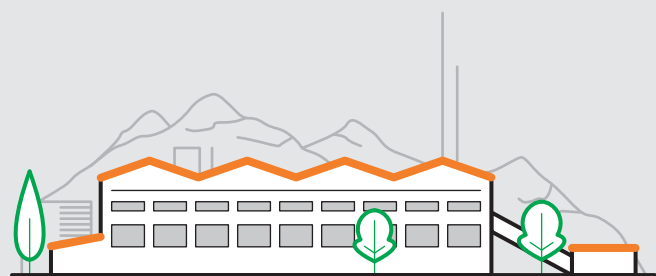
Moscow

Project completed in 2017

Designer Architecture bureau Ostozhenka

Customer Rechnikov Invest

Total tonnage of steel structures: **1200 tons**



Udokan mining and processing plant

Trans-Baikal Territory

Project completed in 2018

Designer Mechanobrinzhening TOMS Engineering

Customer The Baikal mining company

Total tonnage of steel structures: **30 000 tons**



Amursky gas plant

Amur region

Project completed in 2018

Designer Linde

Customer Gasprom

Total tonnage of steel structures: **180 000 tons**



High rack warehouse

Chelyabinsk region

Project completed in 2019

Designer ChelyabPSK

Customer Uvelka

Total tonnage of steel structures: **1100 tons**

State expertise



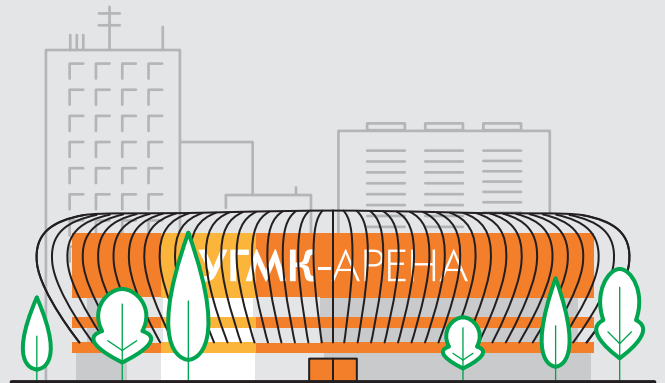
Transport hub «Zolotoy»
Ekaterinburg

Project completed in 2018

Designer Ural Project Dubrava

Customer Malusheva 73

Total tonnage of steel structures: **18 000 tons**



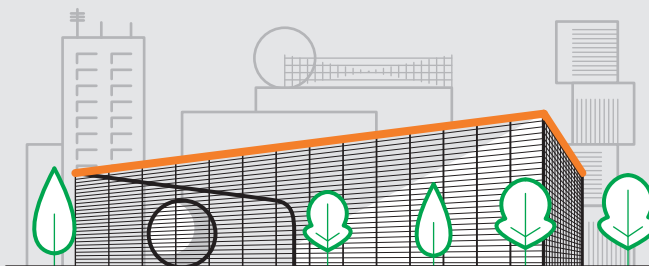
Ice arena
Ekaterinburg

Project completed in 2018

Designer Gorproekt

Customer UGMK

Total tonnage of steel structures: **8 000 tons**



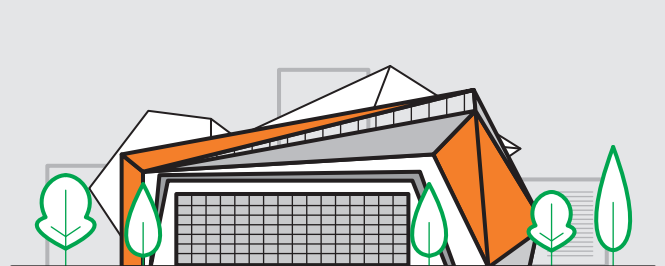
Atomic Industry Pavillion, VDNKh
Moscow

Project completed in 2019

Designer Stal Proekt

Customer Atomkomplekt

Total tonnage of steel structures: **380 tons**



CPC Sirius
Sochi

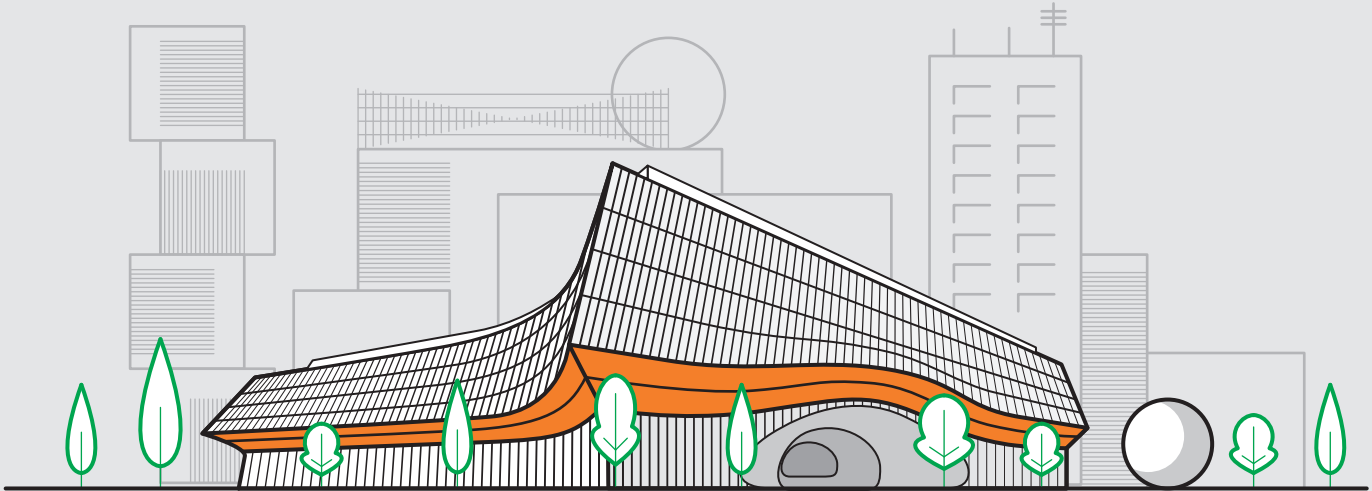
Project completed in 2019

Designer Stal Proekt

Customer Fund Talent and success/UralHim

Total tonnage of steel structures: **800 tons**

Project design stage



Sberbank IT-center (Technopark)

Moscow, Skolkovo

Project completed in 2018

Designer Gorproekt

Customer SB Development

Total tonnage of steel structures: **40 000 tons**



Reconstruction of football stadium SSHOR «Moskvich»

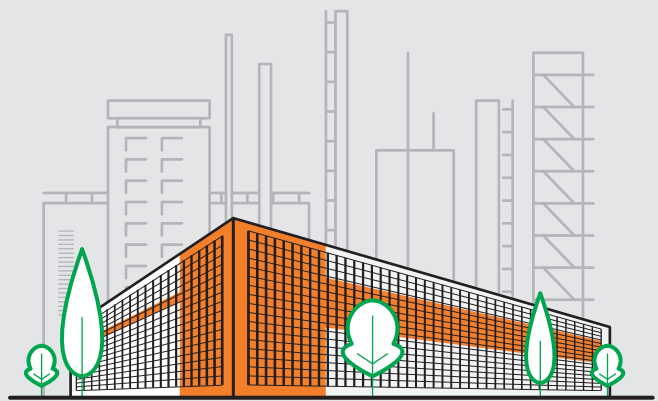
Moscow

Project completed in 2018

Designer Stal Proekt

Customer Moscomsport

Total tonnage of steel structures: **688 tons**



Warehouse complex «Radumlya»

Moscow region

Project completed in 2019

Designer Stal Proekt

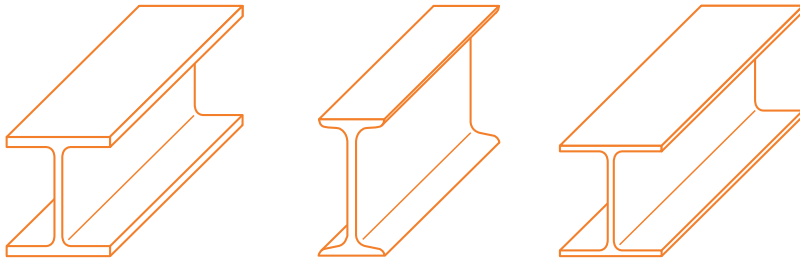
Customer ORC Radumlya

Total tonnage of steel structures: **1600 tons**



RANGE OF I-BEAMS

The products are manufactured on EVRAZ NTMK and EVRAZ ZSMK.



Color code

Section code
20B2
20B3

New products are marked yellow

Parallel flange I-beams (GOST R 57837)

The products are manufactured at the H-beam plant of EVRAZ NTMK and at the medium section mill 450 of EVRAZ ZSMK.

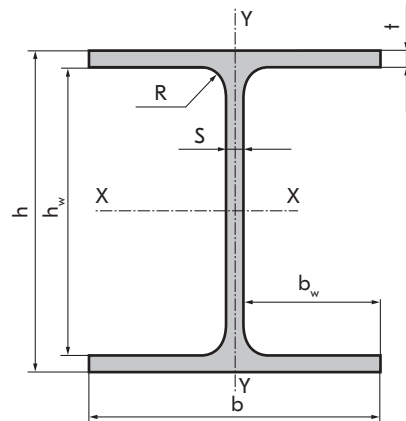
X-Y references:

I: moment of inertia;

W: section modulus;

S: static moment (half section);

i: radius of gyration/inertia.



ZSMK section mix

Section code	Profile dimensions, mm							Cross sectional area, F , cm^2	Weight 1 m, kg	X-Y references							
	h	b	s	t	h_w	b_w	R			I_x , cm^4	W_x , cm^3	S_x , cm^3	i_x , cm	I_y , cm^4	W_y , cm^3	S_y , cm^3	i_y , cm
Type B: Normal I-beams																	
10B1	100	55	4.1	5.7	88.6	25.45	7	10.32	8.1	171.01	34.2	19.7	4.07	15.92	5.79	4.57	1.24
12B1	117.6	64	3.8	5.1	107.4	30.1	7	11.03	8.7	257.36	43.8	24.94	4.83	22.39	7	5.49	1.42
12B2	120	64	4.4	6.3	107.4	29.8	7	13.21	10.4	317.75	53	30.36	4.90	27.67	8.65	6.79	1.45
14B1	137.4	73	3.8	5.6	126.2	34.6	7	13.39	10.5	434.86	63.3	35.8	5.70	36.42	9.98	7.76	1.65
14B2	140	73	4.7	6.9	126.2	34.15	7	16.43	12.9	541.22	77.3	44.17	5.74	44.92	12.31	9.62	1.65
16B1	157	82	4	5.9	145.2	39	9	16.18	12.7	689.28	87.8	49.55	6.53	54.43	13.27	10.35	1.83
16B2	160	82	5	7.4	145.2	38.5	9	20.09	15.8	869.29	108.7	61.93	6.58	68.31	16.66	13.05	1.84
14B0 ¹	139.4	73	3.8	6.6	126.2	34.6	7	14.85	11.66	504.8	72.40	40.85	5.83	42.9	11.80	9.10	1.70
16B0 ¹	158.8	82	4.2	6.8	145.2	38.9	9	17.94	14.09	786.4	99.04	55.90	6.62	62.7	15.30	11.90	1.87
18B1	177	91	4.3	6.5	164	43.35	9	19.58	15.4	1062.74	120.1	67.66	7.37	81.89	18	13.98	2.05
18B2	180	91	5.3	8	164	42.85	9	23.95	18.8	1316.96	146.3	83.21	7.42	100.85	22.16	17.3	2.05

Note:

1. I-beams 14B0 and 16B0 — TU 0925-259-05757676.

NTMK section mix

Section code	Profile dimensions, mm							Cross sectional area, F, cm ²	Weight 1 m, kg	X-Y references							
	h	b	s	t	h _w	b _w	R			I _x , cm ⁴	W _x , cm ³	S _x , cm ³	i _x , mm	i _y , cm ⁴	W _y , cm ³	S _y , cm ³	i _y , mm
Type B: Normal I-beams																	
20B1	200	100	5.5	8	184	47.25	11	2716	21.30	1844.26	184.40	104.73	82.41	133.91	26.78	20.97	22.21
20B2	203	101	6.5	9.5	184	47.25	11	32.19	25.30	2218.49	218.60	124.99	83.02	163.93	32.46	25.50	22.57
20B3	208	102	8	12	184	47	11	40.24	31.60	2852.62	274.30	158.46	84.20	213.50	41.86	33.02	23.03
25B1	248	124	5	8	232	59.50	12	32.68	25.70	3537.11	285.30	159.68	104.04	254.85	41.11	31.80	27.93
25B2	250	125	6	9	232	59.50	12	37.66	29.60	4051.73	324.10	182.93	103.73	293.85	47.02	36.55	27.93
25B3	255	126	7.5	11.5	232	59.25	12	47.62	37.40	5238.16	410.80	233.88	104.88	384.79	61.08	47.67	28.43
25B4	260	127	9	14	232	59	12	57.68	45.30	6481.01	498.50	286.25	106	480.06	75.60	59.24	28.85
30B1	298	149	5.5	8	282	71.75	13	40.80	32	6318.22	424	237.53	124.44	442	59.33	45.88	32.91
30B2	300	150	6.5	9	282	71.75	13	46.78	36.70	7209.26	480.60	271.06	124.14	507.53	67.67	52.56	32.94
30B3	305	151	8	11.5	282	71.50	13	58.74	46.10	9254.92	606.90	344.37	125.52	661.88	87.67	68.31	33.57
30B4	310	152	9.5	14	282	71.25	13	70.80	55.60	11381.41	734.30	419.40	126.79	822.37	108.21	84.60	34.08
35B1	346	174	6	9	328	84	14	52.68	41.40	11094.49	641.30	358.09	145.12	791.54	90.98	70.11	38.76
35B2	350	175	7	11	328	84	14	63.14	49.60	13559.01	774.80	433.96	146.54	984.34	112.50	86.79	39.48
35B3	355	176	8.5	13.5	328	83.75	14	77.08	60.50	16797.02	946.30	533.54	147.62	1229.36	139.70	108.13	39.94
35B4	361	177	10	16.5	328	83.50	14	92.89	72.90	20719.71	1147.90	651.07	149.35	1528.90	172.76	134.02	40.57
40B1	396	199	7	11	374	96	16	72.16	56.60	20018.83	1011.10	563.93	166.56	1447.14	145.44	111.97	44.78
40B2	400	200	8	13	374	96	16	84.12	66	23704.43	1185.20	663.13	167.87	1736.39	173.64	133.82	45.43
40B3	406	201	9.5	16	374	95.75	16	102.05	80.10	29352.45	1445.90	813.38	169.60	2169.89	215.91	166.74	46.11
40B4	412	202	11	19	374	95.50	16	120.10	94.30	35196.83	1708.60	966.65	171.19	2616.25	259.03	200.47	46.67
45B1	446	199	8	12	422	95.50	18	84.30	66.20	28697.35	1286.90	725.06	184.50	1580.02	158.80	123.29	43.29
45B2	450	200	9	14	422	95.50	18	96.76	76	33450.76	1486.70	839.53	185.93	1871.57	187.16	145.46	43.98
45B3	456	201	10.5	17	422	95.25	18	115.43	90.60	40710.41	1785.50	1012.55	187.80	2307.62	229.61	178.81	44.71
45B4	462	202	12	20	422	95	18	134.22	105.40	48197.42	2086.50	1188.75	189.50	2756.66	272.94	213.01	45.32
50B1	492	199	8.8	12	468	95.10	20	92.38	72.50	36841.89	1497.60	853.45	199.70	1581.96	158.99	124.86	41.38
50B2	496	199	9	14	468	95	20	101.27	79.50	41869.08	1688.30	957.23	203.33	1844.89	185.42	144.88	42.68
50B3	500	200	10	16	468	95	20	114.23	89.70	47846.06	1913.80	1087.59	204.66	2140.79	214.08	167.48	43.29
50B4	508	201	12	20	468	94.50	20	139.99	109.90	59953.57	2360.40	1348.82	206.94	2717.85	270.43	212.23	44.06
50B5	516	202	15	24	468	93.50	20	170.59	133.90	73345.26	2842.80	1642.68	207.35	3315.53	328.27	260.04	44.09
55B1	543	220	9.5	13.5	516	105.25	24	113.36	89	55677.42	2050.70	1164.94	221.62	2405.54	218.69	171.67	46.06
55B2	547	220	10	15.5	516	105	24	124.74	97.90	62784.45	2295.60	1301.49	224.34	2761.34	251.03	196.56	47.05
55B3	553	221	12	18.5	516	104.50	24	148.63	116.70	75321.22	2724.10	1554.49	225.11	3342.92	302.53	237.99	47.42
55B4	560	222	14	22	516	104	24	174.86	137.30	89907.11	3211	1842.20	226.75	4032.05	363.25	286.76	48.02
60B1	596	199	10	15	566	94.50	22	120.45	94.60	68715.90	2305.90	1325.36	238.85	1979.66	198.96	157.64	40.54
60B2	600	200	11	17	566	94.50	22	134.41	105.50	77632.25	2587.70	1489.36	240.32	2278.16	227.82	180.72	41.17
60B3	604	201	12.5	19	566	94.25	22	151.28	118.80	87472.10	2896.40	1675.38	240.46	2586.62	257.38	205.28	41.35
60B4	612	202	15	23	566	93.50	22	181.97	142.90	106509.50	3480.70	2026.68	241.93	3182.62	315.11	253.12	41.82
70B1	691	260	12	15.5	660	124	24	164.74	129.30	125922.20	3644.60	2094.79	276.47	4557.35	350.57	276.64	52.60
70B2	697	260	13	18.5	660	123.5	24	183.64	146.7	147101.94	4186.63	2392.68	281.87	5437.68	418.28	328.41	54.41
70B3	702	261	14.5	21	660	123.25	24	210.26	165.10	167085.07	4760.30	2736.06	281.89	6248.49	478.81	378.10	54.51
70B4	710	262	17	25	660	122.50	24	248.14	194.80	199679.98	5624.80	3249.28	283.67	7531.16	574.90	456.29	55.09

Section code	Profile dimensions, mm							Cross sectional area, F, cm ²	Weight 1 m, kg	X-Y references							
	h	b	s	f	h _w	b _w	R			I _x , cm ⁴	W _x , cm ³	S _x , cm ³	i _x , mm	i _y , cm ⁴	W _y , cm ³	S _y , cm ³	i _y , mm
Type SH: H-beams																	
20SH0	190	149	5	7	176	72	13	31.11	24.42	2079.60	218.90	120.97	81.76	386.62	51.90	39.79	35.25
20SH1	194	150	6	9	176	72	13	39.01	30.60	2689.74	277.30	154.28	83.04	507.16	67.62	51.85	36.06
20SH2	199	151	7.5	11.5	176	71.75	13	49.38	38.80	3502.14	352	198.01	84.21	661.25	87.58	67.27	36.59
20SH3	204	152	9	14	176	71.50	13	59.85	47	4362.01	427.70	243.18	85.37	821.37	108.08	83.18	37.05
25SH0	240	174	6	9	222	84	16	46.84	36.80	4981.13	415.10	229.64	103.13	791.75	91.01	69.84	41.11
25SH1	244	175	7	11	222	84	16	56.24	44.20	6121.23	501.70	279.19	104.33	984.48	112.51	86.36	41.84
25SH2	249	176	8.5	13.5	222	83.75	16	68.59	53.80	7624.69	612.40	343.94	105.44	1229.33	139.70	107.41	42.34
25SH3	256	177	10.5	17	222	83.25	16	85.69	67.30	9819.49	767.20	436.06	107.05	1575.20	177.99	137.18	42.88
25SH4	264	182	13	21	222	84.50	16	107.50	84.40	12751.44	966	556.26	108.91	2116.49	232.58	179.70	44.37
25SH5	274	184	16	26	222	84	16	133.40	104.70	16478.26	1202.80	703.59	111.14	2710.17	294.58	228.44	45.07
25SH6	286	186	19	32	222	83.50	16	163.42	128.30	21287.68	1488.70	884.76	114.13	3448.57	370.81	288.22	45.94
30SH0	290	199	7	10	270	96	18	61.48	48.30	9429.75	650.30	360.60	123.85	1316.09	132.27	101.70	46.27
30SH1	294	200	8	12	270	96	18	72.38	56.80	11338.30	771.30	429.51	125.16	1603.26	160.33	123.28	47.06
30SH2	300	201	9	15	270	96	18	87.38	68.60	14209.66	947.30	529.86	127.52	2034.13	202.40	155.42	48.25
30SH3	306	203	11	18	270	96	18	105.56	82.90	17455.33	1140.90	644.63	128.59	2515.46	247.83	190.85	48.82
35SH1	334	249	8	11	312	120.50	20	83.17	65.30	17107.05	1024.40	565.71	143.42	2834.62	227.68	174.45	58.38
35SH2	340	250	9	14	312	120.50	20	101.51	79.70	21676.50	1275.10	706.03	146.13	3650.97	292.08	223.45	59.97
35SH3	347	252	11	17.5	312	120.50	20	125.95	98.90	27535.21	1587	886.41	147.86	4674.90	371.02	284.26	60.92
35SH4	354	254	13	21	312	120.50	20	150.67	118.30	33692.45	1903.50	1072.31	149.54	5745.80	452.43	347.18	61.75
40SH1	383	299	9.5	12.5	358	144.75	22	112.91	88.60	30554.32	1595.50	880.73	164.50	5576.07	372.98	285.42	70.27
40SH2	390	300	10	16	358	145	22	135.95	106.70	38674.10	1983.30	1093.97	168.66	7207.77	480.52	366.53	72.81
40SH3	397	302	12	19.5	358	145	22	164.89	129.40	47846.38	2410.40	1339.96	170.34	8962.48	593.54	453.33	73.72
40SH4	406	304	14.5	24	358	144.75	22	201.98	158.60	60107.10	2960.90	1662	172.51	11253.74	740.38	566.43	74.64
40SH5	418	309	17.5	30	358	145.75	22	252.2	198	77867.25	3725.7	2114.9	175.71	14776.27	956.39	732.65	76.54
40SH6	430	311	21	36	358	145	22	303.25	238.1	96432.24	4485.2	2578.21	178.32	18086.35	1163.11	893.43	77.23
40SH7	446	313	25	44	358	144	22	369.09	289.7	122543.61	5495.2	3204.85	182.21	22547.07	1440.71	1109.25	78.16
45SH0	434	299	10	15	404	144.50	24	135.04	106	46794.17	2156.40	1192.24	186.15	6692.40	447.65	342.87	70.40
45SH1	440	300	11	18	404	144.50	24	157.38	123.60	56069.13	2548.60	1412.44	188.75	8111.31	540.75	413.80	71.79
45SH2	446	302	13	21	404	144.50	24	184.30	144.70	66379.08	2976.60	1661.51	189.78	9655.62	639.44	490.29	72.38
45SH3	452	304	15	24	404	144.50	24	211.46	166	77050.83	3409.30	1915.99	190.88	11258.33	740.68	569.04	72.97
50SH1	482	300	11	15	452	144.50	26	145.52	114.20	60366.76	2504.80	1395.56	203.67	6763.81	450.92	347.62	68.18
50SH2	487	300	14.5	17.5	452	142.75	26	176.34	138.40	71863.01	2951.30	1666.63	201.87	7897.76	526.52	409.42	66.92
50SH3	493	300	15.5	20.5	452	142.25	26	198.86	156.10	83437.19	3384.90	1912.66	204.83	9251.05	616.74	478.76	68.21
50SH4	499	300	16.5	23.5	452	141.75	26	221.38	173.80	95277.59	3818.70	2161.40	207.45	10604.77	706.98	548.21	69.21
50SH5	508	302	19	28	452	141.50	26	260.80	204.70	114959.83	4526	2578.55	209.95	12894.50	853.94	663.27	70.31
60SH1	582	300	12	17	548	144	28	174.49	137	102709.98	3529.60	1981.30	242.62	7669.85	511.32	396.49	66.30
60SH2	589	300	16	20.5	548	142	28	217.41	170.70	126193.28	4285	2438.84	240.92	9259.23	617.28	483.58	65.26
60SH3	597	300	18	24.5	548	141	28	252.37	198.10	150035.32	5026.30	2869.72	243.82	11069.15	737.94	578.58	66.23
60SH4	605	300	20	28.5	548	140	28	287.33	225.60	174450.48	5767	3305.39	246.40	12881.17	858.74	674.12	66.96
60SH5	616	302	23	34	548	139.50	28	338.13	265.40	210467.04	6833.40	3941.46	249.49	15686.68	1038.85	817.44	68.11

Section code	Profile dimensions, mm							Cross sectional area, F, cm ²	Weight 1 m, kg	X-Y references							
	h	b	s	t	h _w	b _w	R			I _x , cm ⁴	W _x , cm ³	S _x , cm ³	i _x , mm	i _y , cm ⁴	W _y , cm ³	S _y , cm ³	i _y , mm
70SH1	692	300	13	20	652	143.50	28	211.49	166	172424.05	4983.40	2814.39	285.53	9024.74	601.65	468.06	65.32
70SH2	698	300	15	23	652	142.50	28	242.53	190.40	198779.77	5695.70	3233.41	286.29	10382.92	692.19	540.47	65.43
70SH3	707	300	18	27.5	652	141	28	289.09	226.90	239021.10	6761.60	3867.02	287.54	12424.20	828.28	650.29	65.56
70SH4	715	300	20.5	31.5	652	139.75	28	329.39	258.60	275127.01	7695.90	4426.46	289.01	14095.21	949.47	748.55	65.76
70SH5	725	300	23	36.5	652	138.50	28	375.69	294.90	319781.96	8821.60	5099.30	291.75	16514.18	1100.95	870.34	66.30

Type K: Column beams (UC)

15K1	147	149	6	8.5	130	71.50	11	34.17	26.80	1366.76	186	103.63	63.25	469.21	62.98	48.05	37.06
15K2	150	150	7	10	130	71.50	11	40.14	31.50	1641.33	218.80	123.04	63.95	563.28	75.10	57.36	37.46
15K3	155	151	8.5	12.5	130	71.25	11	49.84	39.10	2117.61	273.20	155.69	65.18	718.46	95.16	72.78	37.97
15K4	160	152	10	15	130	71	11	59.64	46.80	2629.16	328.60	189.67	66.40	879.66	115.74	88.65	38.41
15K5	166	153	12	18	130	70.50	11	71.72	56.30	3291.43	396.60	232.39	67.74	1077.13	140.80	108.12	38.75
20K1	196	199	6.5	10	176	96.25	13	52.69	41.40	3846.06	392.50	216.41	85.44	1314.47	132.11	100.38	49.95
20K2	200	200	8	12	176	96	13	63.53	49.90	4715.63	471.60	262.75	86.15	1601.53	160.15	121.91	50.21
20K3	204	201	9	14	176	96	13	73.57	57.80	5602.48	549.30	308.35	87.26	1896.76	188.73	143.72	50.78
20K4	210	201	10.5	17	176	95.25	13	88.27	69.30	6962.62	663.10	376.57	88.81	2303.59	229.21	174.72	51.09
20K5	214	202	12	19	176	95	13	99.33	78	7970.40	744.90	426.84	89.58	2613.87	258.80	197.63	51.30
20K6	220	202	14	22	176	94	13	114.97	90.30	9488.15	862.60	500.34	90.84	3027.75	299.78	229.45	51.32
20K7	226	203	16	25	176	93.50	13	131.11	102.90	11136.66	985.60	578.16	92.16	3493.41	344.18	263.98	51.62
20K8	234	203	18	29	176	92.50	13	150.87	118.40	13375.48	1143.20	679.29	94.16	4053.99	399.41	306.76	51.84
25K1	246	249	8	12	222	120.50	16	79.72	62.60	9170.92	745.60	410.68	107.26	3090.05	248.20	188.61	62.26
25K2	250	250	9	14	222	120.50	16	92.18	72.40	10832.61	866.60	480.25	108.41	3648.81	291.90	221.88	62.92
25K3	253	251	10	15.5	222	120.50	16	102.21	80.20	12153.56	960.80	535.41	109.05	4088.75	325.80	247.85	63.25
25K4	257	252	11	17.5	222	120.50	16	114.82	90.10	13927.17	1083.80	607.67	110.14	4672.01	370.79	282.18	63.79
25K5	262	253	12.5	20	222	120.25	16	131.15	103	16243.92	1240	701.07	111.29	5404.02	427.20	325.46	64.19
25K6	267	253	14	22.5	222	119.50	16	147.13	115.50	18593.24	1392.80	793.96	112.42	6080.59	480.68	366.65	64.29
25K7	274	258	16	26	222	121	16	171.88	134.90	22416.62	1636.30	942.16	114.20	7452.57	577.72	441.04	65.85
25K8	281	259	18	29.5	222	120.50	16	194.97	153.10	26169.72	1862.60	1083.49	115.86	8556.67	660.75	505.09	66.25
25K9	288	260	20	33	222	120	16	218.20	171.30	30128.76	2092.30	1228.96	117.51	9685.85	745.06	570.29	66.63
25K10	298	261	23	38	222	119	16	251.62	197.50	36112.37	2423.70	1442.84	119.80	11288.10	864.99	663.49	66.98
30K1	298	299	9	14	270	145	18	110.80	87	18848.66	1265	694.64	130.43	6241.19	417.47	316.82	75.05
30K2	300	300	10	15	270	145	18	119.78	94	20410.21	1360.70	750.59	130.54	6754.83	450.32	342.13	75.10
30K3	300	305	15	15	270	145	18	134.78	105.80	21535.21	1435.70	806.84	126.40	7104.76	465.89	358.04	72.60
30K4	304	301	11	17	270	145	18	134.82	105.80	23380.49	1538.20	852.74	131.69	7732.59	513.79	390.46	75.73
30K5	308	301	12	19	270	144.50	18	149.56	117.40	26362.99	1711.90	953.96	132.77	8642.78	574.27	436.61	76.06
30K6	312	302	13	21	270	144.50	18	164.72	129.30	29508.74	1891.60	1059.44	133.84	9648.60	638.98	485.99	76.53
30K7	316	302	14.5	23	270	143.75	18	180.85	142	32732.42	2071.70	1167.93	134.53	10569.09	699.94	533.09	76.45
30K8	316	357	14.5	23	270	171.25	18	206.15	161.80	38173.52	2416.10	1353.26	136.08	17452.10	977.71	741.50	92.01
30K9	322	358	16	26	270	171	18	232.14	182.20	43983.21	2731.90	1541.60	137.65	19896.05	1111.51	843.38	92.58
30K10	328	359	18	29	270	170.50	18	259.60	203.80	50113.52	3055.70	1738.68	138.94	22381.16	1246.86	947.13	92.85
30K11	334	360	20	32	270	170	18	287.18	225.40	56488.07	3382.50	1939.98	140.25	24906.98	1383.72	1052.25	93.13
30K12	341	361	22	35.5	270	169.50	18	318.49	250	64158.87	3763	2176.26	141.93	27866.02	1543.82	1175.02	93.54

Section code	Profile dimensions, mm							Cross sectional area, F, cm ²	Weight 1 m, kg	X-Y references							
	h	b	s	t	h _w	b _w	R			I _x , cm ⁴	W _x , cm ³	S _x , cm ³	i _x , mm	i _y , cm ⁴	W _y , cm ³	S _y , cm ³	i _y , mm
30K13	350	362	24	40	270	169	18	357.18	280.40	74376.59	4250.10	2481.31	144.30	31663.84	1749.38	1332.11	94.15
35K1	342	348	10	15	312	169	20	139.03	109.10	31247.91	1827.40	1001.17	149.92	10542.21	605.87	459.67	87.08
35K1.5	346	349	11	17	312	169	20	156.41	122.80	35711.23	2064.20	1135.84	151.10	12051.44	690.63	524.08	87.78
35K2	350	350	12	19	312	169	20	173.87	136.50	40295.10	2302.60	1272.61	152.23	13585.82	776.33	589.29	88.39
35K3	355	351	13.5	21.5	312	168.75	20	196.48	154.20	46230.77	2604.60	1448.66	153.39	15506.81	883.58	671.24	88.84
35K4	360	352	15	24	312	168.50	20	219.19	172.10	52353.70	2908.50	1627.80	154.55	17459.86	992.04	754.25	89.25
35K5	365	353	16.5	26.5	312	168.25	20	242	190	58667.44	3214.70	1810.04	155.70	19445.30	1101.72	838.34	89.64
40K1	394	398	11	18	358	193.50	22	186.81	146.70	56145.31	2850	1559.22	173.36	18922.62	950.89	720.40	100.64
40K2	400	400	13	21	358	193.50	22	218.69	171.70	66621.41	3331.10	1836.23	174.54	22412.67	1120.63	849.93	101.23
40K3	406	403	16	24	358	193.50	22	254.87	200.10	78039.22	3844.30	2139.84	174.98	26200.19	1300.26	988.59	101.39
40K4	414	405	18	28	358	193.50	22	295.39	231.90	92771.14	4481.70	2513.15	177.22	31026.87	1532.19	1165.56	102.49
40K4.5	420	403	20	31	358	191.50	22	325.61	255.60	103629.70	4934.80	2786.46	178.40	33850.06	1679.90	1279.67	101.96
40K5	429	400	23	35.5	358	188.50	22	370.49	290.80	120290.27	5607.90	3198.49	180.19	37914.87	1895.74	1447.08	101.16

Type S: Bearing piles

13S1	126.5	114	9	9	108.5	52.50	12	31.52	24.74	838.38	132.55	76.71	51.57	223.59	39.23	30.78	26.63
20S1	200	204	12	12	176	96	13	71.53	56.20	4982.30	498.20	282.75	83.46	1701.70	166.83	128.66	48.77
25S1	244	252	11	11	222	120.50	16	82.06	64.40	8786.78	720.20	402.51	103.48	2938.35	233.20	178.99	59.84
25S2	250	255	14	14	222	120.50	16	104.68	82.20	11483.65	918.70	519.31	104.74	3876.72	304.06	234.19	60.86
30S1	294	302	12	12	270	145	18	107.66	84.50	16864.20	1147.20	638.55	125.16	5515.72	365.28	279.87	71.58
30S2	300	305	15	15	270	145	18	134.78	105.80	21535.21	1435.70	806.84	126.40	7104.76	465.89	358.04	72.60
32S1	326.7	319.7	24.8	24.8	277.1	147.45	15.2	229.28	180	40972.83	2508.30	1448.25	133.68	13546.38	847.44	656.56	76.87
32S2	337.9	325.7	30.3	30.4	277.1	147.70	15.2	283.97	222.90	52698.77	3119.20	1826.55	136.23	17576.76	1079.32	839.85	78.67
35S1	338	351	13	13	312	169	20	135.25	106.20	28190.34	1668.10	925.69	144.37	9379.76	534.46	408.88	83.28
35S2	344	354	16	16	312	169	20	166.63	130.80	35330.38	2054.10	1149.60	145.61	11846.30	669.28	513.39	84.32
35S3	350	357	19	19	312	169	20	198.37	155.70	42796.14	2445.50	1379.79	146.88	14433.12	808.58	621.86	85.30
40S1	388	402	15	15	358	193.50	22	178.45	140.10	48965.17	2524	1401.07	165.65	16258.38	808.87	618.66	95.45
40S2	394	405	18	18	358	193.50	22	214.39	168.30	59713.15	3031.10	1695.05	166.89	19955.19	985.44	755.50	96.48
40S3	400	408	21	21	358	193.50	22	250.69	196.80	70888.09	3544.40	1996.23	168.16	23809.27	1167.12	896.87	97.45

Type DB: Additional I-beams

20DB1	207	133	5.8	8.4	190.2	63.60	7.6	33.87	26.60	2580.37	249.30	139.48	87.28	329.79	49.59	38.06	31.20
20DB2	210	134	6.4	10.2	189.6	63.80	7.6	39.97	31.40	3137	298.80	167.61	88.60	409.58	61.13	46.88	31.20
25DB1	251	146	6	8.6	233.8	70	7.6	39.64	31.10	4395.18	350.20	196.03	105.30	446.61	61.18	47	33.10
25DB2	256	146	6.3	10.9	234.2	69.85	7.6	47.08	37	5523.69	431.50	241.08	108.32	565.99	77.53	59.37	33.10
25DB3	260	147	7.2	12.7	234.6	69.90	7.6	54.73	43	6554.72	504.20	283.24	109.44	673.24	91.60	70.26	34.07
25DB4	258	146	6.1	9.1	239.8	69.95	7.6	41.70	32.70	4887.50	378.90	212.12	108.27	472.58	64.74	49.73	33.67
25DB5	262	147	6.6	11.2	239.6	70.20	7.6	49.24	38.70	6007.11	458.60	256.75	110.45	593.66	80.77	61.93	34.72
25DB6	266	148	7.6	13	240	70.20	7.6	57.22	44.90	7108.01	534.40	301.04	111.46	703.43	95.06	73.06	35.06
30DB1	309	102	6	8.9	291.2	48	7.6	36.12	28.40	5426.36	351.20	203.38	122.56	158.06	30.99	24.58	20.92
30DB2	313	102	6.6	10.8	291.4	47.70	7.6	41.76	32.80	6496.06	415.10	240.08	124.72	191.85	37.62	29.80	21.43
30DB3	310	165	5.8	9.7	290.6	79.60	8.9	49.54	38.90	8544.97	551.30	306.41	131.33	726.88	88.11	67.41	38.30
30DB4	313	166	6.6	11.2	290.6	79.70	8.9	57.04	44.80	9960.39	636.50	355.10	132.14	854.77	102.98	78.92	38.71

Section code	Profile dimensions, mm							Cross sectional area, F, cm ²	Weight 1 m, kg	X-Y references							
	h	b	s	t	h _w	b _w	R			I _x , cm ⁴	W _x , cm ³	S _x , cm ³	i _x , mm	i _y , cm ⁴	W _y , cm ³	S _y , cm ³	i _y , mm
30DB5	317	167	7.6	13.2	290.6	79.70	8.9	66.85	52.50	11873.01	749.10	419.95	133.27	1025.95	122.87	94.33	39.17
30DB6	303	165	6	10.2	282.6	79.50	8.9	51.30	40.30	8477.69	559.60	311.02	128.56	764.36	92.65	70.87	38.60
30DB7	307	166	6.7	11.8	283.4	79.65	8.9	58.84	46.20	9942.92	647.80	361.13	129.99	900.53	108.50	83.06	39.12
30DB8	310	167	7.9	13.7	282.6	79.55	8.9	68.76	54	11668.10	752.80	422.55	130.26	1064.87	127.53	97.93	39.35
35DB1	349	127	5.8	8.5	332	60.60	10.2	41.74	32.80	8267.33	473.80	271.01	140.74	291	45.83	35.90	26.40
35DB2	353	128	6.5	10.7	331.6	60.75	10.2	49.84	39.10	10240.24	580.20	331.05	143.34	375.06	58.60	45.83	27.43
35DB3	352	171	6.9	9.8	332.4	82.05	10.2	57.34	45	12166.36	691.30	389.35	145.66	817.94	95.67	73.87	37.77
35DB4	355	171	7.2	11.6	331.8	81.90	10.2	64.45	50.60	14130.93	796.10	446.97	148.07	968.08	113.23	87.21	38.76
35DB5	358	172	7.9	13.1	331.8	82.05	10.2	72.17	56.70	16051.94	896.80	504.59	149.14	1112.72	129.39	99.75	39.27
35DB6	363	173.2	9.1	15.7	331.6	825	10.2	85.45	67.10	19414.43	1069.70	604.58	150.73	1362.07	157.28	121.48	39.92
35DB7	353	254	9.5	16.4	320.2	122.25	16	115.93	91	26754.31	1515.80	840.04	151.92	4483.14	353	269.04	62.19
35DB8	357	255	10.5	18.3	320.4	122.25	16	129.17	101.40	30209.80	1692.40	942.22	152.93	5062.32	397.04	302.87	62.60
35DB9	360	256	11.4	19.9	320.2	122.30	16	140.59	110.40	33153.98	1841.90	1029.60	153.57	5570.48	435.19	332.26	62.95
35DB10	363	257	13	21.7	319.6	122	16	155.28	121.90	36598.33	2016.40	1134.85	153.52	6147.42	478.40	366.17	62.92
40DB1	399	140	6.4	8.8	381.4	66.80	10.2	49.94	39.20	12656.64	634.40	365.15	159.19	403.59	57.66	45.32	28.43
40DB2	403	140	7	11.2	380.6	66.50	10.2	58.90	46.20	15570.06	772.70	442.32	162.59	513.63	73.38	57.47	29.53
40DB3	403	177	7.5	10.9	381.2	84.75	10.2	68.07	53.40	18613.44	923.70	522.88	165.36	1009.08	114.02	88.32	38.50
40DB4	407	178	7.7	12.8	381.4	85.15	10.2	75.83	59.50	21585.78	1060.70	597.50	168.72	1204.97	135.39	104.49	39.86
40DB5	410	179	8.8	14.4	381.2	85.10	10.2	85.99	67.50	24557.50	1197.90	678.10	168.99	1379.08	154.09	119.34	40.05
40DB6	413	180	9.7	16	381	85.15	10.2	95.45	74.90	27495.01	1331.50	756.09	169.72	1558.58	173.18	134.40	40.41
40DB7	417	181	10.9	18.2	380.6	85.05	10.2	108.26	85	31537.51	1512.60	862.63	170.68	1803.36	199.27	155.06	40.81
45DB1	450	152	7.6	10.8	428.4	72.20	10.2	66.28	52	21216.72	943	544.31	178.91	634.05	83.43	65.75	30.93
45DB2	455	153	8	13.3	428.4	72.50	10.2	75.86	59.60	25498.98	1120.80	642.40	183.34	796.13	104.07	81.54	32.39
45DB3	459	154	9.1	15.4	428.2	72.45	10.2	87.29	68.50	29698.29	1294	744.05	184.45	940.55	122.15	96.04	32.83
45DB4	462	154.4	9.6	17	428	72.40	10.2	94.48	74.20	32674.03	1414.50	813.29	185.97	1046.53	135.56	106.56	33.28
45DB5	466	155.3	10.5	18.9	428.2	72.40	10.2	104.56	82.10	36624.87	1571.90	906.27	187.16	1184.51	152.55	120.20	33.66
45DB6	453	189.9	8.5	12.7	427.6	90.70	10.2	85.47	67.10	29321.46	1294.60	734.66	185.22	1452.13	152.94	118.65	41.22
45DB7	457	190	9	14.5	428	90.50	10.2	94.51	74.20	33262.54	1455.70	825.08	187.60	1660.63	174.80	135.50	41.92
45DB8	460	191	9.9	16	428	90.55	10.2	104.39	81.90	37004.02	1608.90	914.58	188.28	1862.06	194.98	151.49	42.24
45DB9	463	192	10.5	17.7	427.6	90.75	10.2	113.76	89.30	40952.17	1769	1006.08	189.73	2092.64	217.98	169.35	42.89
45DB10	466	193	11.4	19	428	90.80	10.2	1233	96.60	44505.67	1910.10	1090.07	190.20	2282.42	236.52	184.24	43.07
45DB11	469	194	12.6	20.6	427.8	90.70	10.2	134.72	105.80	48825.33	2082.10	1193.69	190.37	2514.63	259.24	202.70	43.20
53DB3	533	209	10.2	15.6	501.8	99.40	12.7	117.78	92.50	55246.34	2073	1181.69	216.58	2378.94	227.66	177.43	44.94
53DB4	537	210	10.9	17.4	502.2	99.55	12.7	129.20	101.40	61702.67	2298.10	1310.12	218.53	2692.14	256.39	199.87	45.65
53DB5	539	211	11.6	18.8	501.4	99.70	12.7	138.88	109	66731.56	2476.10	1413.46	219.20	2950.99	279.72	218.28	46.10
53DB6	544	212	13.1	21.2	501.6	99.45	12.7	156.98	123.20	76082.72	2797.20	1604	220.15	3377.30	318.61	249.61	46.38
53DB7	549	214	14.7	23.6	501.8	99.65	12.7	176.16	138.30	86084.33	3136	1806.60	221.06	3869.60	361.64	284.46	46.87
60DB1	599	178	10	12.8	573.4	84	12.7	104.29	81.90	55978.87	1869.10	1098.43	231.68	1208.85	135.83	109.10	34.05
60DB2	603	179	10.9	15	573	845	12.7	117.54	92.30	64629.04	2143.60	1256.38	234.49	1441.05	161.01	129.24	35.01
60DB3	603	228	10.5	14.9	573.2	108.75	12.7	129.51	101.70	76354.38	2532.50	1449.82	242.81	2949.85	258.76	202.10	47.72
60DB4	608	228	11.2	17.3	573.4	108.40	12.7	144.49	113.40	87546.50	2879.80	1644.93	246.15	3425.21	300.46	234.41	48.69

Section code	Profile dimensions, mm							Cross sectional area, F, cm ²	Weight 1 m, kg	X-Y references							
	h	b	s	f	h _w	b _w	R			I _x , cm ⁴	W _x , cm ³	S _x , cm ³	i _x , mm	i _y , cm ⁴	W _y , cm ³	S _y , cm ³	i _y , mm
60DB5	612	229	11.9	19.6	572.8	108.55	12.7	159.32	125.10	98536.48	3220.20	1837.14	248.70	3932.13	343.42	267.71	49.68
60DB6	617	230	13.1	22.2	572.6	108.45	12.7	178.52	140.10	111971.15	3629.50	2075.04	250.45	4513.82	392.51	306.53	50.28

Type DK: Additional Column beams (UC)

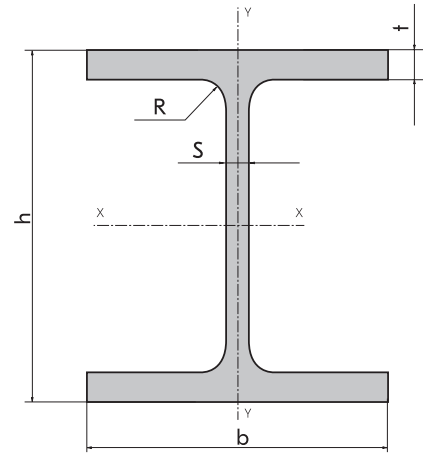
15DK1	152	152	5.8	6.6	138.8	73.10	7.6	28.61	22.50	1213.15	159.60	88.58	65.12	386.64	50.87	38.82	36.76
15DK2	157	153	6.6	9.3	138.4	73.20	7.6	38.09	29.90	1722.51	219.40	122.56	67.25	555.61	72.63	55.30	38.19
15DK3	162	154	8.1	11.6	138.8	72.95	7.6	47.47	37.30	2227.67	275	155.52	68.51	706.89	91.80	70.06	38.59
20DK1	203	203	7.2	11	181	97.90	10.2	58.59	46	4545.70	447.90	247.79	88.09	1534.57	151.19	114.76	51.18
20DK2	206	204	7.9	12.6	180.8	98.05	10.2	66.58	52.30	5272.37	511.90	284.77	88.99	1783.95	174.90	132.78	51.76
20DK3	210	205	9.1	14.2	181.6	97.95	10.2	75.64	59.40	6114	582.30	326.45	89.91	2040.50	199.07	151.37	51.94
20DK4	216	206	10.2	17.4	181.2	97.90	10.2	91.06	71.50	7662.28	709.50	401.74	91.73	2537.25	246.33	187.28	52.78
20DK5	222	209	13	20.6	180.8	98	10.2	110.51	86.80	9471.87	853.30	490.61	92.58	3138.43	300.33	229.17	53.29
20DK6	229	210	14.5	23.7	181.6	97.75	10.2	126.77	99.50	11328.82	989.40	574.62	94.53	3663.55	348.91	266.49	53.76
25DK1	253	254	8.6	14.2	224.6	122.70	12.7	92.84	72.90	11274.05	891.20	492.46	110.20	3880.25	305.53	231.60	64.65
25DK2	256	255	9.4	15.6	224.8	122.80	12.7	102.08	80.10	12567.16	981.80	545.12	110.96	4313.58	338.32	256.60	65.01
25DK3	260	256	10.7	17.3	225.4	122.65	12.7	114.08	89.60	14253.92	1096.50	612.99	111.78	4840.74	378.18	287.24	65.14
25DK4	264.0	257.0	11.9	19.6	224.8	122.55	12.7	128.88	101.20	16369.03	1240.10	698.30	112.70	5549.34	431.86	328.23	65.62

Material and shape specification

Section reference document	Melt code		Chemistry reference document	Techspecs reference document	Supplied lengths, product length, m	Manufacturer
	Class	Grade				
GOST R 57837	—	St3sp	GOST 380	GOST R 5783	Fixed lengths: 6.0 to 24.0, increments of 0.1 m; non-fixed lengths	EVRAZ NTMK
	—	S255, S345, S355, S390	GOST 27772			
	345, 355, 375, 390, 440	—	GOST 19281			
	S255B, S345B, S355B, S390B, S440B	—	GOST R 57837			
	390	10HSND	GOST 19281			
	345	15HSND	GOST 55374			
	—	14HGND	By agreement	By agreement		
	—	St3ps, St3sp	GOST 380	GOST R 57837	Fixed lengths: 6.0 to 12.0	EVRAZ ZSMK
	345	09G2S	GOST 19281			
	—	S235, S245, S255, S345	GOST 27772			
	S245B, S255B, S255B-1, S345B	—	GOST R 57837			
	345, S345	15HSND	GOST 6713 GOST 19281 GOST R 55374			
S345	14HGND	GOST R 55374 TU 24.10.73-303-05757676	GOST R 55374 TU 24.10.73-303-05757676			

Parallel flange I-beams (ASTM A6/A6M, TU 24107-016-00186269)

The products are manufactured at the H-beam plant of EVRAZ NTMK.



Section mix

Section code			Profile dimensions, mm				Section area, A _y , mm	Weight of 1 m length, kg	I _x , cm ⁴	W _x , cm ³	S _x , cm ³	i _x , cm	I _y , cm ⁴	W _y , cm ³	i _y , cm
as per ASTM A6/A6M in:		Code	Profile depth h	Flange width b	Web thickness s	Flange thickness t									
inch/foot	millimeter/kilogram														
W6x15	W150x22.5	15K1A	152	152	5.8	6.6	28.6	22.5	1213	160	89	7	387	51	3.7
W6x20	W150x29.8	15K2A	157	153	6.6	9.3	37.9	29.8	1723	219	123	7	556	73	3.8
W6x25	W150x37.1	15K3A	162	154	8.1	11.6	47.4	37.1	2228	275	156	7	707	92	3.9
W8x18	W200x26.6	20D1A	207	133	5.8	8.4	33.9	26.6	2580	249	139	9	330	50	3.1
W8x21	W200x31.3	20D2A	210	134	6.4	10.2	39.7	31.3	3137	299	168	9	410	61	3.2
W8x31	W200x46.1	20K2A	203	203	7.2	11.0	58.9	46.1	4546	448	248	9	1535	151	5.1
W8x35	W200x52	20K3A	206	204	7.9	12.6	66.5	52	5272	512	285	9	1784	175	5.2
W8x40	W200x59	20K4A	210	205	9.1	14.2	75.5	59	6114	582	326	9	2040	199	5.2
W8x48	W200x71	20K5A	216	206	10.2	17.4	91.0	71	7662	709	402	9	2537	246	5.3
W8x58	W200x86	20K6A	222	209	13.0	20.6	110.0	86	9472	853	491	9	3138	300	5.3
W8x67	W200x100	20K7A	229	210	14.5	23.7	127.0	100	11329	989	575	9	3664	349	5.4
W10x22	W250x32.7	25D2A	258	146	6.1	9.1	41.9	32.7	4888	379	212	11	473	65	3.4
W10x26	W250x38.5	25D3A	262	147	6.6	11.2	49.1	38.5	6007	459	257	11	594	81	3.5
W10x30	W250x44.8	25D4A	266	148	7.6	13.0	57.0	44.8	7108	534	301	11	703	95	3.5
W10x49	W250x73	25K1A	253	254	8.6	14.2	92.9	73	11274	891	492	11	3880	306	6.5
W10x54	W250x80	25K2A	256	255	9.4	15.6	102.0	80	12567	982	545	11	4314	338	6.5
W10x60	W250x89	25K3A	260	256	10.7	17.3	114.0	89	14254	1096	613	11	4841	378	6.5
W10x68	W250x101	25K4A	264	257	11.9	19.6	129.0	101	16369	1240	698	11	5549	432	6.6
W10x77	W250x115	25K5A	269	259	13.5	22.1	146.0	115	18937	1408	799	11	6405	495	6.6
W10x88	W250x131	25K6A	275	261	15.4	25.1	167.0	131	22149	1611	923	12	7446	571	6.7
W10x100	W250x149	25K7A	282	263	17.3	28.4	190.0	149	25932	1839	1064	12	8622	656	6.7
W10x112	W250x167	25K8A	289	265	19.2	31.8	212.0	167	30015	2077	1213	12	9879	746	6.8
W12x19	W310x28.3	31U3A	309	102	6.0	8.9	35.9	28.3	5427	351	203	12	158	31	2.1
W12x22	W310x32.7	31U4A	313	102	6.6	10.8	41.8	32.7	6496	415	240	12	192	38	2.1
W12x26	W310x38.7	31B1A	310	165	5.8	9.7	49.4	38.7	8545	551	306	13	727	88	3.8
W12x30	W310x44.5	31B2A	313	166	6.6	11.2	56.7	44.5	9961	636	355	13	855	103	3.9
W12x35	W310x52	31B3A	317	167	7.6	13.2	66.5	52	11873	749	420	13	1026	123	3.9
W14x22	W360x32.9	36U1A	349	127	5.8	8.5	41.9	32.9	8268	474	271	14	291	46	2.6

Section code		Profile dimensions, mm					Section area, A _y , mm	Weight of 1 m length, kg	I _x , cm ⁴	W _x , cm ³	S _x , cm ³	i _x , cm	I _y , cm ⁴	W _y , cm ³	i _y , cm
as per ASTM A6/A6M in:		Code	Profile depth h	Flange width b	Web thickness s	Flange thickness t									
inch/foot	millimeter/kilogram														
W14x26	W360x39	36U2A	353	128	6.5	10.7	49.6	39	10241	580	331	14	375	59	2.7
W14x30	W360x44.6	36B1A	352	171	6.9	9.8	57.1	44.6	12167	691	389	15	818	96	3.8
W14x34	W360x51	36B2A	355	171	7.2	11.6	64.5	51	14131	796	447	15	968	113	3.9
W14x38	W360x58	36B3A	358	172	7.9	13.1	72.3	58	16052	897	505	15	1113	129	3.9
W14x61	W360x91	36SH1A	353	254	9.5	16.4	115.0	91	26755	1516	840	15	4483	353	6.2
W14x68	W360x101	36SH2A	357	255	10.5	18.3	129.0	101	30211	1692	942	15	5062	397	6.3
W14x74	W360x110	36SH3A	360	256	11.4	19.9	141.0	110	33155	1842	1030	15	5570	435	6.3
W14x82	W360x122	36SH4A	363	257	13.0	21.7	155.0	122	36599	2016	1135	15	6147	478	6.3
W16x26	W410x38.8	41U1A	399	140	6.4	8.8	49.5	38.8	12657	634	365	16	404	58	2.9
W16x31	W410x46.1	41U2A	403	140	7.0	11.2	58.8	46.1	15571	773	442	16	514	73	3
W16x36	W410x53	41B1A	403	177	7.5	10.9	68.4	53	18614	924	523	16	1009	114	3.8
W16x40	W410x60	41B2A	407	178	7.7	12.8	76.1	60	21586	1061	598	17	1205	135	4
W16x45	W410x67	41B3A	410	179	8.8	14.4	85.8	67	24558	1198	678	17	1379	154	4
W16x50	W410x75	41B4A	413	180	9.7	16.0	94.8	75	27496	1332	756	17	1559	173	4.1
W16x57	W410x85	41B5A	417	181	10.9	18.2	108.0	85	31538	1513	863	17	1803	199	4.1
W18x35	W460x52	46U1A	450	152	7.6	10.8	66.5	52	21217	943	544	18	634	83	3.1
W18x40	W460x60	46U2A	455	153	8.0	13.3	76.1	60	25500	1121	642	18	796	104	3.2
W18x46	W460x68	46U3A	459	154	9.1	15.4	87.1	68	29699	1294	744	18	941	122	3.3
W18x50	W460x74	46B1A	457	190	9.0	14.5	94.8	74	33263	1456	825	19	1661	175	4.2
W18x55	W460x82	46B2A	460	191	9.9	16.0	105.0	82	37005	1609	915	19	1862	195	4.2
W18x60	W460x89	46B3A	463	192	10.5	17.7	114.0	89	40953	1769	1006	19	2093	218	4.3
W18x65	W460x97	46B4A	466	193	11.4	19.0	123.0	97	44506	1910	1090	19	2282	237	4.3
W18x71	W460x106	46B5A	469	194	12.6	20.6	134.0	106	48826	2082	1194	19	2515	259	4.3
W21x48	W530x72	53B1A	524	207	9.0	10.9	91.8	72	40060	1529	880	21	1615	156	4.2
W21x55	W530x82	53B2A	528	209	9.5	13.3	105.0	82	47659	1805	1031	21	2028	194	4.4
W21x62	W530x92	53B3A	533	209	10.2	15.6	118.0	92	55248	2073	1182	22	2379	228	4.5
W21x68	W530x101	53B4A	537	210	10.9	17.4	129.0	101	61704	2298	1310	22	2692	256	4.6
W21x73	W530x109	53B5A	539	211	11.6	18.8	139.0	109	66733	2476	1413	22	2951	280	4.6
W21x83	W530x123	53B6A	544	212	13.1	21.2	157.0	123	76084	2797	1604	22	3377	319	4.6
W21x93	W530x138	53B7A	549	214	14.7	23.6	176.0	138	86086	3136	1807	22	3870	362	4.7
W24x55	W610x82	61U1A	599	178	10.0	12.8	105.0	82	55981	1869	1098	23	1209	136	3.4
W24x62	W610x92	61U2A	603	179	10.9	15.0	117.0	92	64631	2144	1256	24	1441	161	3.5
W24x68	W610x101	61B1A	603	228	10.5	14.9	130.0	101	76575	2540	1454	24	2950	259	4.8
W24x76	W610x113	61B2A	608	228	11.2	17.3	145.0	113	87767	2887	1649	25	3425	300	4.9
W24x84	W610x125	61B3A	612	229	11.9	19.6	159.0	125	98757	3227	1841	25	3932	343	5
W24x94	W610x140	61B4A	617	230	13.1	22.2	179.0	140	112191	3637	2079	25	4514	393	5
W24x103	W610x153	61B5A	623	229	14.0	24.9	196.0	153	125355	4024	2304	25	4999	437	5.1
HP10x42	HP250x62	25K1AS	246	256	10.5	10.7	80.0	62	8775	713	397	10	2995	234	6.1
HP12x53	HP310x79	31K1AS	299	306	11.0	11.0	100.0	79	16320	1092	605	13	5258	344	7.3
HP12x74	HP310x110	31K3AS	308	310	15.4	15.5	141.0	110	23707	1539	865	13	7707	497	7.4

Note:
Tolerances of shape, dimensions and weight: as per ASTM A6/A6M.

Product length

PO specified lengths		Fixed lengths															
Product length	foot	20	25	30	32	35	38	40	43	45	48	50	53	55	58	60	65
	m	6.1	7.6	9.2	9.8	10.7	11.6	12.2	13.1	13.7	14.6	15.2	16.2	16.8	17.7	18.3	19.8

Note:

The I-beams can be ordered in lengths 6 to 24 m with the increments of 0.1 m.

Grade mix

Melt code	Chemistry reference document	Techspecs reference document
(A36)	ASTM A36/A36M	ASTM A36/A36M, ASTM A6/A6M
50	ASTM A572/A572M	ASTM A572/A572M, ASTM A6/A6M
(A992)	ASTM A992/A992M	ASTM A992/A992M, ASTM A6/A6M
44W, 50W	CSA G40.21	CSA G40.21, ASTM A6/A6M
50	ASTM A572/A572M ₁ /ASTM A992/A992M	ASTM A572/A572M ₁ /ASTM A992/A992M, ASTM A6/A6M
50/50W	ASTM A572/A572M ₁ /ASTM A992/A992M ₁ /CSA G40.21	ASTM A572/A572M ₁ /ASTM A992/A992M ₁ /CSA G40.21, ASTM A6/A6M

List of ASTM and CSA standards regulating the I-beam supplies

Designation of a reference document	Name of a reference
ASTM A6/A6M	Technical specification on the rolled rods, sheets, sections, sheet piles of structural steel
ASTM A36/A36M	Technical specification on the structural carbon steel
ASTM A572/A572M	Technical specification on the sections of HSLA Nb- and V-alloyed structural steel
ASTM A992/A992M	Technical specification on the rolled sections from structural steel
CSA G40.21	High quality structural steel

Note:

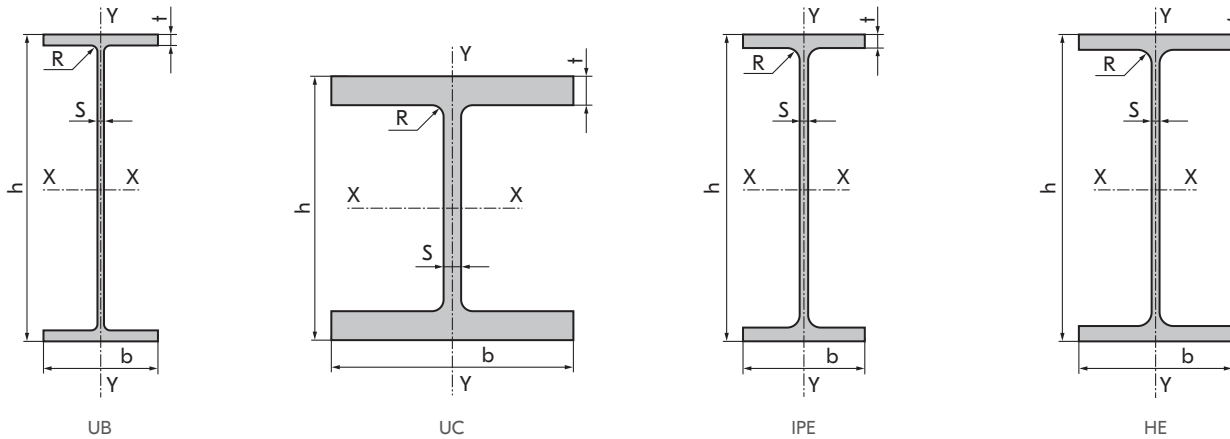
Codes of the corresponding reference documents together with the latest edition year are to be specified in PO.

Parallel flange I-beams (BS EN 10365, TU 24107-016-00186269)

Manufactured at the H-beam plant of EVRAZ NTMK.



Tech codes
EVRAZ NTMK (rus)



Section code		Profile dimensions, mm					Weight of 1 m of product length, kg	$I_{x,r}$ cm ⁴	$W_{x,r}$ cm ³	$S_{x,r}$ cm ³	$i_{x,r}$ cm	$I_{y,r}$ cm ⁴	$W_{y,r}$ cm ³	$i_{y,r}$ cm
as per BS EN 10365	Code	section depth h	flange width b	web thickness s	flange thickness t	Radius R								

Universal beams UB

UB 254x146x31	25D1V	251.4	146.1	6.0	8.6	7.6	31.1	4414	351	197	11	448	61	3.4
UB 254x146x37	25D2V	256	146.4	6.3	10.9	7.6	37	5537	433	242	11	571	78	3.5
UB 254x146x43	25D3V	259.6	147.3	7.2	12.7	7.6	43	6544	504	283	11	677	92	3.5
UB 305x102x28	31U2V	308.7	101.8	6.0	8.8	7.6	28.2	5366	348	201	12	155	31	2.1
UB 305x102x33	31U3V	312.7	102.4	6.6	10.8	7.6	32.8	6502	416	240	12	194	38	2.2
UB 305x165x40	31B1V	303.4	165	6.0	10.2	8.9	40.3	8503	561	312	13	764	93	3.9
UB 305x165x46	31B2V	306.6	165.7	6.7	11.8	8.9	46.1	9899	646	360	13	896	108	3.9
UB 305x165x54	31B3V	310.4	166.9	7.9	13.7	8.9	54	11696	754	423	13	1063	127	3.9
UB 356x127x33	36U1V	349	125.4	6.0	8.5	10.2	33.1	8250	473	271	14	280	45	2.6
UB 356x127x39	36U2V	353.4	126	6.6	10.7	10.2	39.1	10172	576	329	14	358	57	2.7
UB 356x171x45	36B1V	351.4	171.1	7.0	9.7	10.2	45	12066	687	387	15	811	95	3.8
UB 356x171x51	36B2V	355	171.5	7.4	11.5	10.2	51	14136	796	448	15	968	113	3.9
UB 356x171x57	36B3V	358	172.2	8.1	13.0	10.2	57	16039	896	505	15	1108	129	3.9
UB 356x171x67	36B4V	363.4	173.2	9.1	15.7	10.2	67.1	19463	1071	605	15	1362	157	4
UB 406x140x39	41U1V	398	141.8	6.4	8.6	10.2	39	12509	629	362	16	410	58	2.9
UB 406x140x46	41U2V	403.2	142.2	6.8	11.2	10.2	46	15686	778	444	16	538	76	3
UB 406x178x54	41B1V	402.6	177.7	7.7	10.9	10.2	54.1	18723	930	527	16	1021	115	3.8
UB 406x178x60	41B2V	406.4	177.9	7.9	12.8	10.2	60.1	21597	1063	600	17	1203	135	4
UB 406x178x67	41B3V	409.4	178.8	8.8	14.3	10.2	67.1	24331	1189	673	17	1365	153	4

Section code		Profile dimensions, mm					Weight of 1 m of product length, kg	I_x, cm^4	W_x, cm^3	S_x, cm^3	i_x, cm	I_y, cm^4	W_y, cm^3	i_y, cm
as per BS EN 10365	Code	section depth h	flange width b	web thickness s	flange thickness t	Radius R								
UB 406x178x74	41B4V	412.8	179.5	9.5	16.0	10.2	74.2	27310	1323	750	17	1545	172	4
UB 457x152x52	46U1V	449.8	152.4	7.6	10.9	10.2	52.3	21370	950	548	18	645	85	3.1
UB 457x152x60	46U2V	454.6	152.9	8.1	13.3	10.2	59.8	25501	1122	644	18	795	104	3.2
UB 457x152x67	46U3V	458	153.8	9.0	15.0	10.2	67.2	28927	1263	727	18	913	119	3.3
UB 457x152x74	46U4V	462	154.4	9.6	17.0	10.2	74.2	32675	1414	813	19	1046	136	3.3
UB 457x152x82	46U5V	465.8	155.3	10.5	18.9	10.2	82.1	36589	1571	906	19	1184	153	3.4
UB 457x191x67	46B1V	453.4	189.9	8.5	12.7	10.2	67.1	29381	1296	736	19	1452	153	4.1
UB 457x191x74	46B2V	457	190.4	9.0	14.5	10.2	74.3	33320	1458	826	19	1671	176	4.2
UB 457x191x82	46B3V	460	191.3	9.9	16.0	10.2	82	37052	1611	916	19	1871	196	4.2
UB 457x191x89	46B4V	463.4	191.9	10.5	17.7	10.2	89.3	41016	1770	1007	19	2089	218	4.3
UB 457x191x98	46B5V	467.2	192.8	11.4	19.6	10.2	98.3	45728	1958	1116	19	2347	243	4.3
UB 533x210x82	53B2V	528.3	208.8	9.6	13.2	12.7	82.2	47541	1800	1029	21	2007	192	4.4
UB 533x210x92	53B3V	533.1	209.3	10.1	15.6	12.7	92.1	55229	2072	1180	22	2389	228	4.5
UB 533x210x101	53B4V	536.7	210	10.8	17.4	12.7	101	61520	2293	1306	22	2692	256	4.6
UB 533x210x109	53B5V	539.5	210.8	11.6	18.8	12.7	109	66824	2477	1414	22	2943	279	4.6
UB 533x210x122	53B6V	544.5	211.9	12.7	21.3	12.7	122	76044	2793	1598	22	3387	320	4.7
UB 610x229x101	61B1V	602.6	227.6	10.5	14.8	12.7	101.2	75782	2515	1441	24	2915	256	4.8
UB 610x229x113	61B2V	607.6	228.2	11.1	17.3	12.7	113	87321	2874	1640	25	3434	301	4.9
UB 610x229x125	61B3V	612.2	229	11.9	19.6	12.7	125.1	98612	3222	1838	25	3932	343	5
UB 610x229x140	61B4V	617.2	230.2	13.1	22.1	12.7	139.9	111779	3622	2071	25	4505	391	5

Universal beams UC

UC 152x152x23	15K1V	152.4	152.2	5.8	6.8	7.6	23	1250	164	91	7	400	53	3.7
UC 152x152x30	15K2V	157.6	152.9	6.5	9.4	7.6	30	1748	222	124	7	560	73	3.8
UC 152x152x37	15K3V	161.8	154.4	8	11.5	7.6	37	2211	273	154	7	706	91	3.9
UC 203x203x46	20K1V	203.2	203.6	7.2	11	10.2	46.1	4568	450	249	9	1548	152	5.1
UC 203x203x52	20K2V	206.2	204.3	7.9	12.5	10.2	52	5259	510	284	9	1778	174	5.2
UC 203x203x60	20K3V	209.6	205.8	9.4	14.2	10.2	60	6125	584	328	9	2065	201	5.2
UC 203x203x71	20K4V	215.8	206.4	10	17.3	10.2	71	7618	706	399	9	2537	246	5.3
UC 203x203x86	20K5V	222.2	209.1	12.7	20.5	10.2	86.1	9449	850	488	9	3127	299	5.3
UC 254x254x73	25K1V	254.1	254.6	8.6	14.2	12.7	73.1	11407	898	496	11	3908	307	6.5
UC 254x254x89	25K3V	260.3	256.3	10.3	17.3	12.7	88.9	14268	1096	612	11	4857	379	6.5
UC 254x254x107	25K4V	266.7	258.8	12.8	20.5	12.7	107.1	17511	1313	742	11	5927	458	6.6
UC 254x254x132	25K6V	276.3	261.3	15.3	25.3	12.7	132	22529	1631	935	12	7531	576	6.7
UC 254x254x167	25K8V	289.1	265.2	19.2	31.7	12.7	167.1	29998	2075	1212	12	9870	744	6.8

Type IPE

IPE 200	20B3V	200	100	5.6	8.5	12	22.4	1943	194	110	8	142	28	2.2
IPE 200 O	20B4V	202	102	6.2	9.5	12	25.1	2211	219	125	8	169	33	2.3
IPE 300 A	30B1V	297	150	6.1	9.2	15	36.5	7174	483	271	12	519	69	3.3

Section code		Profile dimensions, mm					Weight of 1 m of product length, kg	$I_{x'} \text{ cm}^4$	$W_{x'} \text{ cm}^3$	$S_{x'} \text{ cm}^3$	$i_{x'} \text{ cm}$	$I_{y'} \text{ cm}^4$	$W_{y'} \text{ cm}^3$	$i_{y'} \text{ cm}$
as per BS EN 10365	Code	section depth h	flange width b	web thickness s	flange thickness t	Radius R								
IPE 300	30B2V	300	150	7.1	10.7	15	42.2	8357	557	314	12	604	80	3.3
IPE 300 O	30B3V	304	152	8	12.7	15	49.3	9995	658	372	13	746	98	3.4
IPE 450 A	45B1V	447	190	7.6	13.1	21	67.2	29761	1332	747	19	1502	158	4.2
IPE 450	45B2V	450	190	9.4	14.6	21	77.6	33745	1500	851	18	1675	176	4.1
IPE 450 O	45B3V	456	192	11	17.6	21	92.4	40926	1795	1023	19	2085	217	4.2
IPE 450 V	45B4V	460	194	12.4	19.6	21	103.6	46203	2009	1151	19	2396	247	4.3
IPE 500 A	50B1V	497	200	8.4	14.5	21	79.4	42937	1728	973	21	1939	194	4.4
IPE 500	50B2V	500	200	10.2	16	21	90.7	48202	1928	1097	20	2141	214	4.3
IPE 500 O	50B3V	506	202	12	19	21	107	57781	2284	1307	21	2621	260	4.4
IPE 500 V	50B4V	514	204	14.2	23	21	129	70723	2752	1584	21	3271	321	4.5
IPE 550 A	55B1V	547	210	9	15.7	24	92.1	59984	2193	1237	23	2431	232	4.6
IPE 550	55B2V	550	210	11.1	17.2	24	106	67122	2441	1394	22	2667	254	4.5
IPE 550 O	55B3V	556	212	12.7	20.2	24	123	79162	2848	1632	23	3223	304	4.5
IPE 550 V	55B4V	566	216	17.1	25.2	24	159	102344	3616	2103	23	4264	395	4.6

Type HE

HE 180 AA	18K1V	167	180	5	7.5	15	28.7	1967	236	129	7	730	81	4.5
HE 180 A	18K2V	171	180	6	9.5	15	35.5	2510	294	162	7	924	103	4.5
HE 180 B	18K3V	180	180	8.5	14	15	51.2	3831	426	241	8	1363	151	4.6
HE 180 C	18K4V	190	183	11.5	19	15	69.8	5543	583	338	8	1944	212	4.7
HE 180 M	18K5V	200	186	14.5	24	15	88.9	7483	748	442	8	2580	277	4.8
HE 200 AA	21K1V	186	200	5.5	8	18	34.6	2944	317	174	8	1068	107	4.9
HE 200 A	21K2V	190	200	6.5	10	18	42.3	3692	389	215	8	1335	134	5
HE 200 B	21K3V	200	200	9	15	18	61.3	5696	570	321	9	2003	200	5.1
HE 200 C	21K4V	210	203	12	20	18	81.9	8029	765	440	9	2794	275	5.2
HE 200 M	21K5V	220	206	15	25	18	103	10642	967	568	9	3651	354	5.3
HE 260 AA	26K1V	244	260	6.5	9.5	24	54.1	7981	654	357	11	2787	214	6.4
HE 260 A	26K2V	250	260	7.5	12.5	24	68.2	10455	836	460	11	3667	282	6.5
HE 260 B	26K3V	260	260	10	17.5	24	93	14920	1148	642	11	5134	395	6.6
HE 300 AA	30K1V	283	300	7.5	10.5	27	69.8	13804	976	533	12	4732	315	7.3
HE 300 A	30K2V	290	300	8.5	14	27	88.3	18264	1260	692	13	6308	421	7.5
HE 300 B	30K3V	300	300	11	19	27	117	25166	1678	934	13	8561	571	7.6
HE 300 C	30K4V	320	305	16	29	27	177	40951	2559	1463	13	13735	901	7.8
HE 320 AA	32K1V	301	300	8	11	27	74.2	16448	1093	598	13	4957	330	7.2
HE 320 A	32K2V	310	300	9	15.5	27	97.6	22929	1479	814	14	6984	466	7.5
HE 320 B	32K3V	320	300	11.5	20.5	27	127	30824	1927	1075	14	9237	616	7.6
HE 320 C	32K4V	340	305	16	30.5	27	186	48711	2865	1637	14	14445	947	7.8
HE 400 AA	40SH1V	378	300	9.5	13	27	92.4	31254	1654	912	16	5860	391	7.1
HE 400 A	40SH2V	390	300	11	19	27	125	45071	2311	1281	17	8562	571	7.3

Section code		Profile dimensions, mm					Weight of 1 m of product length, kg	I_x, cm^4	W_x, cm^3	S_x, cm^3	i_x, cm	I_y, cm^4	W_y, cm^3	i_y, cm
as per BS EN 10365	Code	section depth h	flange width b	web thickness s	flange thickness t	Radius R								
HE 400 V	40SH3V	400	300	13.5	24	27	155	57682	2884	1616	17	10817	721	7.4
HE 450 AA	45SH1V	425	300	10	13.5	27	99.7	41891	1971	1092	18	6086	406	6.9
HE 450 A	45SH2V	440	300	11.5	21	27	140	63725	2897	1608	19	9464	631	7.3
HE 450 V	45SH3V	450	300	14	26	27	171	79891	3551	1991	19	11720	781	7.3
HE 500 AA	50SH1V	472	300	10.5	14	27	107	54647	2316	1288	20	6312	421	6.8
HE 500 A	50SH2V	490	300	12	23	27	155	86979	3550	1975	21	10365	691	7.2
HE 500 V	50SH3V	500	300	14.5	28	27	187	107180	4287	2407	21	12622	841	7.3
HE 600 AA	60SH1V	571	300	12	15.5	27	129	91879	3218	1812	24	6992	466	6.5
HE 600 A	60SH2V	590	300	13	25	27	178	141215	4787	2675	25	11270	751	7.1
HE 600 V	60SH3V	600	300	15.5	30	27	212	171048	5702	3213	25	13529	902	7.1

Note:

Tolerances of shape, dimensions and Weight: as per BS EN 10034.

Grade mix

Melt code	Chemistry reference document	Techspecs reference document
S235JR, S235JO, S235J2	DIN EN 10025-2	DIN EN 10025-1
S275JR, S275JO, S275J2		
S355JR, S355JO, S355J2		

Hot-rolled products made of structural steel grades	DIN EN 10025-1	General specifications of delivery
Hot-rolled products made of structural steel grades	DIN EN 10025-2	Delivery specifications on non-alloyed structural steel grades

Product length

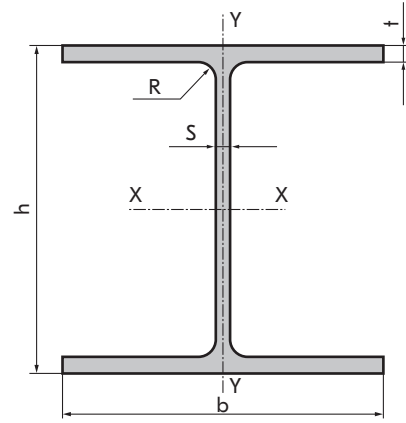
PO specified lengths	Fixed lengths
Product lengths	6 to 24 m with the increments of 0.1 m

Parallel flange I-beams (JIS G 3192, TU 24107-051-00186269, TU 24107-016-00186269)

The products are manufactured at the H-beam plant of EVRAZ NTMK.



Tech codes
EVRAZ NTMK (rus)



Section mix

Designation as per JIS G 3192		Section identification	Profile dimensions, mm					Weight of 1 m of product length, kg	$I_{x,r}$ cm ⁴	$W_{x,r}$ cm ³	$S_{x,r}$ cm ³	$i_{x,r}$ cm	$I_{y,r}$ cm ⁴	$W_{y,r}$ cm ³	$i_{y,r}$ cm
Series of sections	Cross section		section depth h	flange width b	web thickness s	flange thickness t	Radius R								
200x100	200x100	20B1S	200	100	5.5	8	11	21.3	1844	184	105	8	134	27	2.2
250x125	248x124	25B1S	248	124	5	8	12	25.7	3537	285	160	10	255	41	2.8
	250x125	25B2S	250	125	6	9	12	29.6	4052	324	183	10	294	47	2.8
300x150	298x149	30B1S	298	149	5.5	8	13	32	6319	424	238	12	442	59	3.3
	300x150	30B2S	300	150	6.5	9	13	36.7	7210	481	271	12	507	68	3.3
350x175	346x174	35B1S	346	174	6	9	14	41.4	11095	641	358	15	791	91	3.9
	350x175	35B2S	350	175	7	11	14	49.6	13560	775	434	15	984	112	3.9
400x200	396x199	40B1S	396	199	7	11	16	56.6	20020	1011	564	17	1447	145	4.5
	400x200	40B2S	400	200	8	13	16	66	23706	1185	663	17	1736	174	4.5
450x200	446x199	45B1S	446	199	8	12	18	66.2	28699	1287	725	18	1580	159	4.3
	450x200	45B2S	450	200	9	14	18	76	33453	1487	840	19	1871	187	4.4
500x200	496x199	50B2S	496	199	9	14	20	79.5	41872	1688	957	20	1844	185	4.3
	500x200	50B3S	500	200	10	16	20	89.7	47849	1914	1088	20	2140	214	4.3
600x200	596x199	60B1S	596	199	10	15	22	94.6	68721	2306	1325	24	1979	199	4.1
	600x200	60B2S	600	200	11	17	22	105.5	77638	2588	1489	24	2277	228	4.1
200x150	194x150	20SH1S	194	150	6	9	13	30.6	2690	277	154	8	507	68	3.6
250x175	244x175	25SH1S	244	175	7	11	16	44.1	6122	502	279	10	984	112	4.2
300x200	294x200	30SH1S	294	200	8	12	18	56.8	11339	771	430	13	1603	160	4.7
350x250	340x250	35SH2S	340	250	9	14	20	79.7	21678	1275	706	15	3650	292	6
400x300	390x300	40SH2S	390	300	10	16	22	106.7	38676	1983	1094	17	7207	480	7.3
450x300	440x300	45SH1S	440	300	11	18	24	123.5	56072	2549	1413	19	8110	541	7.2
500x300	482x300	50SH1S	482	300	11	15	26	114.2	60371	2505	1396	20	6762	451	6.8
	488x300	50SH2S	488	300	11	18	26	128.4	70956	2908	1614	21	8112	541	7
600x300	582x300	60SH1S	582	300	12	17	28	137	102717	3530	1981	24	7668	511	6.6
	588x300	60SH5S	588	300	12	20	28	151.1	118118	4018	2245	25	9018	601	6.8
	594x302	60SH6S	594	302	14	23	28	174.6	137329	4624	2599	25	10583	701	6.9
700x300	692x300	70SH1S	692	300	13	20	28	166	172435	4984	2815	29	9023	602	6.5
	700x300	70SH6S	700	300	13	24	28	184.9	201501	5757	3232	29	10823	722	6.8
150x150	150x150	15K1S	150	150	7	10	11	31.5	1641	219	123	6	563	75	3.7
200x200	200x200	20K2S	200	200	8	12	13	49.9	4716	472	263	9	1601	160	5
250x250	250x250	25K2S	250	250	9	14	16	72.4	10833	867	480	11	3649	292	6.3
300x300	300x300	30K2S	300	300	10	15	18	94	20411	1361	751	13	6755	450	7.5
350x350	350x350	35K2S	350	350	12	19	20	136.5	40296	2303	1273	15	13585	776	8.8

Designation as per JIS G 3192		Section identification	Profile dimensions, mm					Weight of 1 m of product length, kg	$I_{x'}$, cm ⁴	$W_{x'}$, cm ³	$S_{x'}$, cm ³	$i_{x'}$, cm	$I_{y'}$, cm ⁴	$W_{y'}$, cm ³	$i_{y'}$, cm
Series of sections	Cross section		section depth h	flange width b	web thickness s	flange thickness t	Radius R								
400x400	400x400	40K2S	400	400	13	21	22	171.7	66623	3331	1836	17	22412	1121	10.1
400x400	414x405	40K4S	414	405	18	28	22	231.9	92773	4482	2513	18	31026	1532	10.2

Grade mix

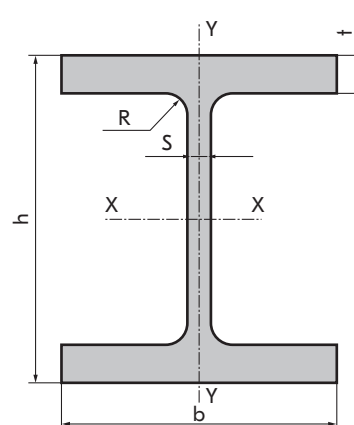
Melt code	Chemistry reference document	Techspecs reference document
S400	JIS G 3101	TU 24107-051-00186269
Rolled steel for general construction		JIS G 3101
Dimensions, weights and tolerable variations of hot-rolled steel sections		JIS G 3192
I-beams as per JIS G 3192:2014. Tech codes		TU 24107-051-00186269

Product length

PO specified lengths	Fixed lengths
Product lengths	6 to 12 m with the increments of 0.1 m

Column I-beams for tower cranes

Manufactured at the H-beam plant of EVRAZ NTMK.



Section mix

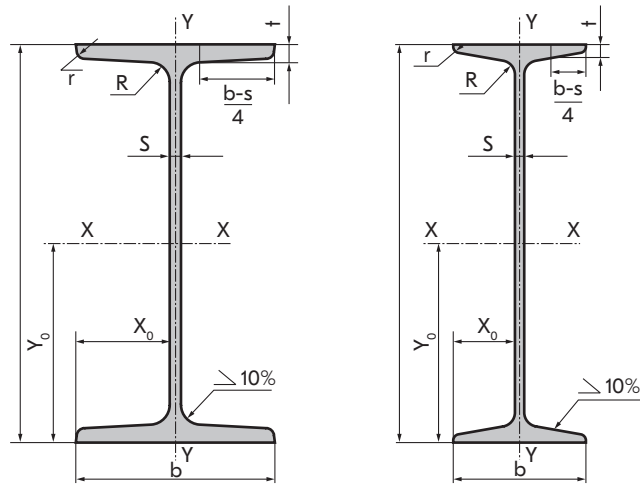
Section code	Profile dimensions, mm					Cross-sectional area, F , cm ²	Weight of 1 m of product length, kg	X-Y references						
	h	b	s	t	R			$I_{x'}$, cm ⁴	$W_{x'}$, cm ³	$S_{x'}$, cm ³	$i_{x'}$, cm	$i_{y'}$, cm ⁴	$W_{y'}$, cm ³	$i_{y'}$, cm
15KR	180.8	152	13.0	21.0	12	83.1	65.2	4444	492	290.5	7.3	1233	162	3.85

Material and shape specification

Section reference document	Melt code		Chemistry reference document	Techspecs reference document	Supplied lengths, product length, m
	Class	Grade			
TS 00186269-217	345 355 375 390	09G2S 09G2SD 12G2F 12G2FD	GOST 19281	GOST 19281 TS 00186269-217	Fixed lengths: 6.0 to 24.0 0.1-m increments; Non-fixed lengths

Inclined-flange I-beams

The products are manufactured at the H-beam plant of EVRAZ NTMK.



Section mix

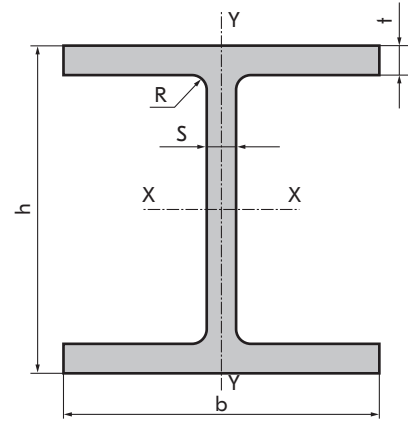
Section code	Profile dimensions, mm						Cross sectional area, F, cm ²	Weight 1 m, kg	X-Y references						Manufacturer	
	h	b	s	t	R	r			I _{x'} , cm ⁴	W _{x'} , cm ³	S _{x'} , cm ³	i _{x'} , cm	I _{y'} , cm ⁴	W _{y'} , cm ³		i _{y'} , cm
Monorail I-beam as per GOST 19425																
24M	240	110	8.2	14.0	11	4	48.7	38.3	4640	387	223	9.75	276	50.2	2.38	EVRAZ NTMK
30M	300	130	9.0	15.0	12	6	64.0	50.2	9500	633	364	12.2	480	73.9	2.74	
36M	360	130	9.5	16.0	14	6	73.8	57.9	15340	852	493	14.4	518	79.7	2.65	
45M	450	150	10.5	18.0	16	7	98.8	77.6	31900	1420	821	18.0	892	119.0	3.00	
I-beam as per TU 24107-044-00186269																
18	180	90	5.1	8.1	9	3.5	23.4	18.4	1290	143	81.4	7.42	82.6	18.4	1.88	EVRAZ NTMK
I-beam as per 8239																
12	120	64	4.8	7.3	7.5	3.0	14.7	11.50	350	58.4	33.7	4.88	279	8.72	1.38	EVRAZ NTMK
14	140	73	4.9	7.5	8.0	3.0	17.4	13.70	572	81.7	46.8	5.73	41.9	11.50	1.55	

Material and shape specification

Melt code		Chemistry reference document	Techspecs reference document	Supplied lengths, product length, m
Class	Grade			
—	3sp	GOST 380	GOST 380 GOST 19425	EVRAZ NTMK: Fixed lengths: 8.0 to 24.0 m. In 0.1-m increments; EVRAZ ZSMK: Non-fixed lengths: 6.0 – 12.0 m. In 0.1-m increments.
—	S255 S345 S355 S390	GOST 27772	GOST 27772 GOST 19425	
265 295 325	09G2S 09G2SD	GOST 19281	GOST 19281 GOST 19425	
345	09G2S 09G2SD	GOST 19281 GOST 55374	GOST 19281 GOST 55374	
	15HSND 14HGND	GOST 55374	GOST 55374	
390	10HSND	GOST 19281 GOST 55374	GOST 19281 GOST 55374	

H-Bearing piles per TS 00186269-307

The products are manufactured at the H-beam plant of EVRAZ NTMK.



Section mix

Section code		Profile dimensions, mm					Weight 1 m, kg	$I_{x'} \text{ cm}^4$	$W_{x'} \text{ cm}^3$	$S_{x'} \text{ cm}^3$	$i_{x'} \text{ cm}$	$I_{y'} \text{ cm}^4$	$W_{y'} \text{ cm}^3$	$i_{y'} \text{ cm}$
As per BS EN 10365	Code	section depth h	flange width b	web thickness s	flange thickness t	Radius R								
305x305x180	32K1VS	326.7	319.7	24.8	24.8	15.2	180	40973	2508	1448	13	13546	847	7.7
305x305x223	32K2VS	337.9	325.7	30.3	30.4	15.2	223	52699	3119	1827	14	17577	1079	7.9

Grade mix

Melt code	Chemistry reference document	Techspecs reference document
S235JR, S235JO, S235J2	DIN EN 10025-2	DIN EN 10025-1
S275JR, S275JO, S275J2		
S355JR, S355JO, S355J2		
Hot-rolled products made of structural steel grades	DIN EN 10025-1	General specifications of delivery
Hot-rolled products made of structural steel grades	DIN EN 10025-2	Delivery specifications on non-alloyed structural steel grades

Product length

PO specified lengths	Fixed lengths
Product lengths	6 to 24 m with the increments of 0,1 m

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