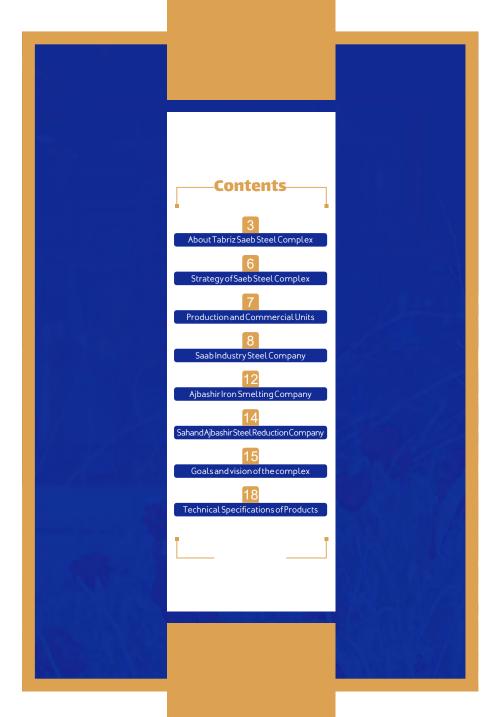


Saeb Steel Complex

www.saebsteelco.ir





# ⊣ About Tabriz Saeb Steel Complex ⊦



Saeb Steel Complex is one of the largest steel producing units in the private sector in the northwest of the country. This complex is consisted of several large steel companies including hot rolling factories of various types of steel sections, electric arc melting and iron ore reduction, which has been established with the aim of operating in various fields of the steel industry. This complex has been active in several phases since 2012 on a 60-hectares in Khazerlu industrial area, Ajabshir, East Azerbaijan, based on systematic location studies. In order to choose the best area for the establishment of this industrial-production unit, various parameters such as easy access to raw materials and energy sources, access to transportation possibilities (e.g. railways), and proximity to domestic and foreign consumer markets have been considered. This complex has facilities including machines, equipments, covered production halls, administrative and welfare services and has been built on an area of approximately 150 thousand square meters. This complex is active in the field of hot rolled sections (such as ribbed and simple rebars) in line with the economic policies of the country (i.e., industrial self-sufficiency and removing dependence on strategic products) by using the most advanced technology and national and international standards, as well as having technical and experienced experts. Taking into account the latest advanced achievements of the steel industry, this group intends to offer its products to domestic and foreign markets in compliance with national and international standards and based on a customer oriented approach. The products of this company are used in the construction and industries.

# Strategy of Saeb Steel Complex

- Completing the project and developing its production capacity up to one million tons, all kinds of steel products.
- Commitment to humility, respect, honesty and fairness in relations with customers, suppliers, competitors and employees.
- Observance of regulations related to safety and protection of human resources.
- Saving resources and preserving the environment.



- Tabriz Saeb Sanat Steel Co, (rolling lines)
- Ajabshir Iron Smelting Company ( electric arc steelmaking)
- Ajabshir Sahand Steel reduction Company (crude steel production line from iron ore by tunnel furnace method)
- Azar Folad Saeb Azerbaijan Company (production of ferro-silicon with silicon)
- Saeb Iron Ore Processing Company



# **Saab Industry Steel Company**

(profile, rebar and coil rolling lines)

This unit is producing products in an area of 44905 square meters. The main products of this group are various steel cross-sections including types of profile, ribbed and simple rebar. In this unit, the output product from the melting unit is first heated in preheated furnaces up to 1200 degrees Celsius in the form of steel ingots and then continuous rolling operations are performed on them. Finally, after turning into steel sections and carrying out quality control processes, it is packed and sent to domestic and foreign customers.

production	Grade
Hot rolled ribbed bars for concrete reinforcement	Aj340 - Aj 400
Simple hot-rolled rebar (branches and coils)	Aj 240

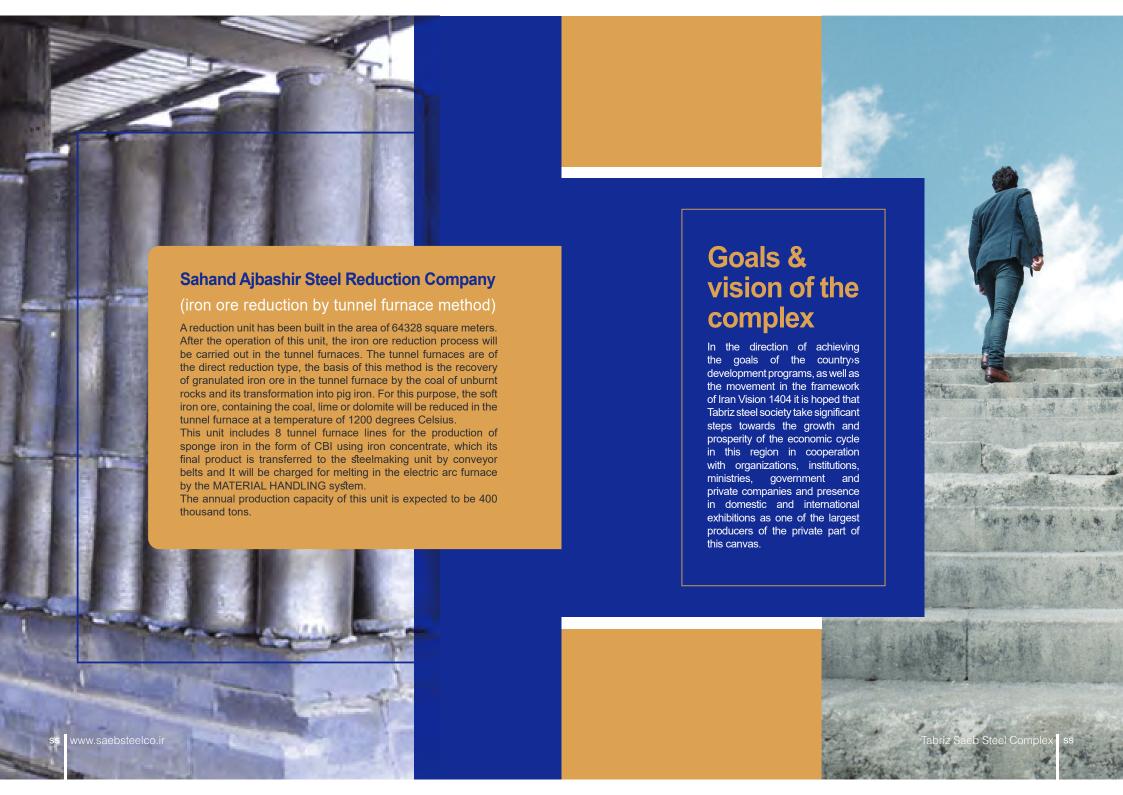


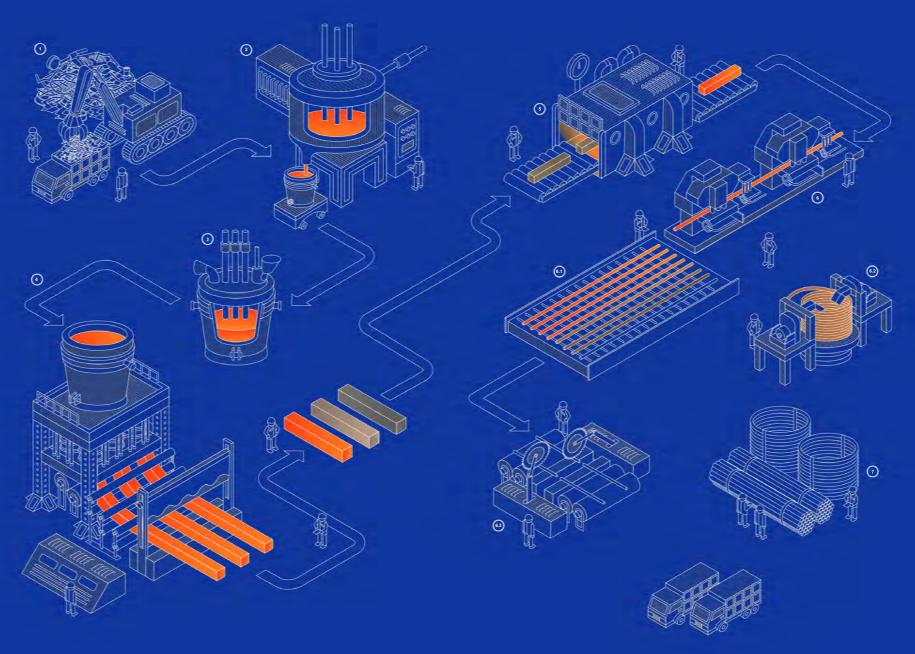


This production unit, with 80% work progress, includes a line for the production of light, semi-heavy, and heavy construction sections, including types of widewing beams (heavy, medium, and light), semi-wide wings, and narrow wings, which will be packaged and marketed after conducting tests and quality control. The annual production capacity of this unit is 300 thousand tons per year.

production	Grade
Heavy (I-6) - semi-heavy (I-5) and light (I-4) hot-rolled beams	ST37-ST44-ST52
Half-wide heavy (I-2) and semi-light (I-7) hot-rolled beams	ST37-ST44-ST52- S275JR-S295JR
Heavy (U-H) and semi-light (U-L) inclined wing round edge hot rolled studs	ST37-ST44-ST52
Hot rolling angles of equal wings (L)	ST37-ST44-ST52

# **Ajbashir Iron Smelting Company** (electric arc steelmaking) The steelmaking unit of this complex has been built under the area of 11825 square meters. After the operation, the raw materials of this unit will be a combination of sponge iron, scrap iron and additives in an electric arc furnace with a capacity of 75 tons with a tap to tap of 45 minutes. Also, this unit has a ladle furnace for making secondary steel and a continuous casting machine with four lines, and all the equipment will be manufactured by automatic system. This unit will be able to produce different types of steel ingots and blooms with different grades. The raw materials of this unit are scrap iron and sponge iron, and its annual production capacity will be 550 thousand tons. Also, the smelting furnace of this unit has the possibility of charging 80% of sponge iron and 20% of scrap iron, which sponge iron will be supplied from the direct regeneration unit located in the complex. The products of the factory (steel making by electric arc method after exploitation) • Ingot (billet) 12000\*150\*150 • Ingot (billet) 12000\*200\*200 • Billet 12000\*240\*240 Bloom 260\*230 Tabriz Saeb Steel Complex ss ss www.saebsteelco.ir





# **Technical Specification of steel Rebars**

## Mechanical Specification

Ту	ре	MinYield stress	Tensile strength	Min Elongation	Min Tensile
Standard ISIRI 3132	Standard GOST 5781	(N/mm2)	(N/mm2)	(%)	strength/UpperYield strength
AJ 240	A1	240	360	18	
AJ 340	A2	340	500	15	1.25
AJ 400	А3	400	600	12	1.20
AJ 500	A4	500	650	8	

## Dimension & Mass

Nominal	Nominal crosssectional	Mass per	Permissible deviation	Longitu		Transverse rib (mm)			
diameter (mm)	(a) icrigati	length (Kg/m)	(%)	Max height (mm)	Max width (mm)	Min width	max width	Min h	eight At the quarter
8	50.3	0.395	±8	0.8	0.8	0.8	1.6	0.52	0.36
10	78.5	0.616	±6	1.0	1.0	1.0	2.0	0.65	0.45
12	113	0.888	±6	1.2	1.2	1.2	2.4	0.78	0.54
14	154	1.21	±5	1.4	1.4	1.4	2.8	0.91	0.63
16	201	1.58	±5	1.6	1.6	1.6	3.2	1.04	0.72
18	254	2.00	±5	1.8	1.8	1.8	3.6	0.17	0.81
20	314	2.47	±5	2.0	2.0	2.0	4.0	0.30	0.90
22	380	2.98	±5	2.2	2.2	2.2	4.4	1.43	0.99
25	491	3.85	±4	2.5	2.5	2.5	5.0	1.63	1.13
28	616	4.83	±4	2.8	2.8	2.8	5.6	1.82	1.26
32	804	6.31	±4	3.2	3.2	3.2	6.4	2.09	1.44

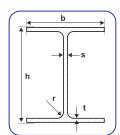
### Chemical Composition

Steel Grade	С		Si		Mn%		P%	S%	Cr%	Ni%	Cu%	CE%
	Min	Max	Min	Max	Min	Max	Max	Max	Max	Max	Max	Max
St 3SP	0.14	0.22	0.15	0.30	0.40	0.65	0.040	0.050	0.30	0.30	0.30	0.50
St 5SP	0.28	0.37	0.15	0.30	0.50	0.80	0.040	0.050	0.30	0.30	0.30	0.55

# Technical Specification of Light Weight Wide Flange I-4- Beam

# Mechanical Specification

Standard	Steel Grade	MinYield stress (N/mm2)	Tensile strength (N/mm2)	Min Elongation (%)
	St 37	235	360-510	26
ISIRI 13781	St 44	275	410-560	23
	St 52	355	470-630	22



### Dimension & Mass

Tuno	b		h		s		t		r	CrossSectional Area	Mass Pe	er Length
Type I-4	mm		m	mm mm		mm		mm	cm²	Kg/m	Tolerane %	
10	100	+4 -1	96		5		8		12	21.2	16.7	
12	120		114	.0.7	5	.0.7	8	+2.0	12	25.3	19.9	±6
14	140	+4 -2	133	±0.7	5.5	±0.7	8.5	-1.0	12	31.4	24.7	
16	160		152		6		9		15	38.8	30.4	

# Static Data

Standard		lx	Wx	ix	ly	Wy	iy	Sx	S'x
ISIF	RI 13781	Cm <sup>4</sup>	Cm <sup>3</sup>	Cm	Cm <sup>4</sup>	Cm <sup>3</sup>	Cm	Cm <sup>3</sup>	Cm
	10	349	72.8	4.06	134	26.8	2.51	41.5	8.41
I-5	12	606	106	4.89	231	38.5	3.02	59.7	10.1
'	14	1030	155	5.73	389	55.6	3.52	86.7	11.9
	16	1670	220	6.57	616	76.9	3.98	123	13.6

### **Chemical Composition**

Steel Grade	C%	Si%	Mn%	P%	S%	Cu%	N%	CE%
St 37	≤ 0.19	0.12-0.35	0.25-1.50	≤0.045	≤ 0.045	≤ 0.55	≤ 0.014	≤ 0.35
St 44	≤ 0.23	0.15-0.45	0.40-1.60	≤ 0.045	≤0.045	≤ 0.55	≤ 0.014	≤ 0.40
St 52	≤ 0.26	≤ 0.60	≤ 1.70	≤ 0.045	≤0.045	≤ 0.55	≤ 0.014	≤ 0.45

# **Technical Specification of Heavy Wide Flange I-6 Beam**

# Mechanical Specification Indard Steel Grade MinYield stress (N/mm2) Tensile strength (N/mm2) Min Elongation (%) St 37 235 360-510 26

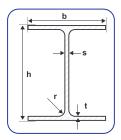
275

355

ISIRI 13779

St 44

St 52



#### Dimension & Mass 106 120 12 20 12 53.2 41.8 12.5 21 126 140 12 66.4 52.1 +2.5 12 160 146 13 22 12 80.6 63.2 14 166 76.2 180 14 23 15 97.1

410-560

470-630

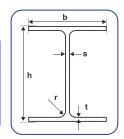
23

	Static Data												
St		lx	Wx	ix	ly	Wy	iy	Sx	S'x				
ISII	RI 13781	Cm⁴	Cm <sup>3</sup>	Cm	Cm <sup>4</sup>	Cm³	Cm	Cm <sup>3</sup>	Cm				
	14	1140	190	4.63	399	75.3	2.74	118	9.69				
I-6	16	2020	288	5.51	703	112	3.25	175	11.5				
1-0	14	3290	411	6.39	1140	157	3.77	247	13.3				
	16	5100	566	7.25	1760	212	4.26	337	15.1				

	Chemical Composition										
Steel Grade		Si%	Mn%	P%	S%	Cu%	N%	CE%			
St 37	≤ 0.19	0.12-0.35	0.25-1.50	≤0.045	≤ 0.045	≤ 0.55	≤ 0.014	≤ 0.35			
St 44	≤ 0.23	0.15-0.45	0.40-1.60	≤ 0.045	≤0.045	≤ 0.55	≤ 0.014	≤ 0.40			
St 52	≤ 0.26	≤ 0.60	≤ 1.70	≤ 0.045	≤0.045	≤ 0.55	≤ 0.014	≤ 0.45			

# **Technical Specification of Medium Wide Flange I-5 Beam**

	Mechanical Specification												
	Standard	Steel Grade	MinYield stress (N/mm2)	Tensile strength (N/mm2)	Min Elongation (%)								
ľ		St 37	235	360-510	26								
	ISIRI 14484	St 44	275	410-560	23								
		St 52	355	470-630	22								



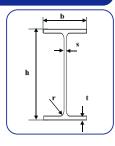
					Dime	nsion &	Mass					
Туре		)	h	1	:	6	1		r	CrossSectional Area	Mass Pe	er Length
I-5	m	m	m	ım	m	m	m	m	mm	cm²	Kg/m	Tolerane %
10	100	+4 -1	100		6	.0.7	10		12	26	20.4	
12	120		120	+3	6.5	±0.7	11	+2.5	12	34	26.7	±6
14	140	+4 -2	140	-2	7	±1	12	-1.5	12	43	33.7	
16	160		160		8		13		15	54.3	42.6	

				Static Dat	a				
St		lx	Wx	ix	ly	Wy		Sx	S'x
ISII	RI 13781	Cm⁴	Cm <sup>3</sup>	Cm	Cm⁴	Cm <sup>3</sup>	Cm	Cm <sup>3</sup>	Cm
	10	450	89.9	4.16	167	33.5	2.53	52.1	8.63
I-5	12	864	144	5.04	218	52.9	2.06	82.6	10.5
1-5	14	1510	216	5.93	550	78.5	3.58	123	12.3
	16	2490	311	6.78	889	111	4.05	177	14.1

			Chem	ical Compo	sition			
Steel Grade	C%	Si%	Mn%	P%	S%	Cu%	N%	CE%
St 37	≤ 0.19	0.12-0.35	0.25-1.50	≤0.045	≤ 0.045	≤ 0.55	≤ 0.014	≤ 0.35
St 44	≤ 0.23	0.15-0.45	0.40-1.60	≤ 0.045	≤0.045	≤ 0.55	≤ 0.014	≤ 0.40
St 52	≤ 0.26	≤ 0.60	≤ 1.70	≤ 0.045	≤0.045	≤ 0.55	≤ 0.014	≤ 0.45

# Technical Specification of Medium Flange I2- Beam

#### 



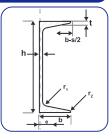
					Dime	nsion &	Mass					
Туре		0	h			S	t		r	CrossSectional Area	Mass Pe	er Length
1-2	m	m	m	ım	m	m	m	m	mm	cm²	Kg/m	Tolerane %
12	64		120		4.4		6.3		7	13.2	10.4	
14	73		140	+3	4.7		6.9		7	16.4	12.9	
16	82	+4 -1	160	-2	5		7.4	+2.0	9	20.1	15.8	
18	91		180		5.3	±0.7	8	-1.0	9	23.9	18.8	±6
20	100		200	+4	5.6		8.5	-1.0	12	28.5	22.4	
22	110	. 4	220		5.9		9.2		12	33.4	26.2	
24	120	+4 -2	240	-2	6.2		9.8		15	39.1	30.7	
27	135		270		6.6		10.2	+2.5	15	45.9	36.1	

						Static I	Data				
	Stan	dard		lx	Wx	ix	ly	Wy	iy	Sx	S'x
ISIRI	13781	DIN	1025	Cm⁴	Cm <sup>3</sup>	Cm	Cm⁴	Cm <sup>3</sup>	Cm	Cm <sup>3</sup>	Cm
	14		140	541	77.2	5.74	44.9	12.2	1.65	44.2	12.3
	16		160	869	109	6.58	68.2	16.7	1.83	61.9	14
I-2	18	IPE	180	1320	146	7.42	101	22.2	2.05	83.2	15.8
1-2	20	IFE	200	1940	194	8.26	142	28.5	2.24	110	17.6
	22		220	2770	252	9.11	205	37.3	2.48	143	19.4
	24		240	3890	324	9.97	284	47.3	2.69	183	21.2
	27		270	5790	429	11.2	420	62.2	3.02	242	23.9

		Chemical Composition									
Steel Grade	C%	Si%	Mn%	P%	S%	N%	CE%				
St 37	≤0.19	0.12-0.35	0.2-0.75	≤0.04	≤0.04	≤0.014	0.35				
St 44	≤0.23	0.15-0.45	0.35-0.9	≤0.04	≤0.04	≤0.014	0.40				
St 52	≤0.26	≤0.60	≤1.70	≤0.04	≤0.04	≤0.014	0.45				

# Technical Specification of Rounded edge Light gradient Flange

	Mecha	nical Specifi	cation	
Standard	Steel Grade	MinYield stress (N/mm2)	Tensile strength (N/mm2)	Min Elongation (%)
	St 37	235	360-510	26
INSO 4477-1	St 44	275	410-580	23
	St 52	355	470-630	22



						Dime	ension	& Mass	\$					
Grade	b (mı	m)	r (m	n m)	\$ (m		(п	t nm)	1 (m		Distance from the axis	CrossSectional Area		er Length
	Nominal	Tolerances %	Nominal	Tolerances %	Nominal	Tolerances %	Nominal	Tolerances %	r 1	r2	е	cm²	Kg/m	Tolerane %
12	52		120	. 0	4.8		7.8	-0.7	7.5	3	1.54	13.3	10.4	
14	58	±2	140	±2	4.9		8.1	-0.7	8	3	1.67	15.6	12.3	
16	64	±2.5	160	.0.5	5		8.4		8.5	3.5	1.8	18.1	14.2	+5
18	70	±2.5	180	±2.5	5.1	±0.5	8.7		9.0	3.5	1.94	20.70	16.3	
20	76		200		5.2	±0.5	9.0	-0.8	9.5	4	2.07	23.40	18.4	-3
22	82	±3	220	±3	5.4		9.5		10	4	2.21	26.70	21	
24	90		240		5.6		10		10.5	4	2.42	30.60	24	レノ

				Static Data				
Grade	Ļ	W <sub>x</sub>	i,	Ļ	W <sub>y</sub>	i,	S <sub>x</sub>	X <sub>u</sub>
UE	Cm⁴	Cm <sup>3</sup>	Cm	Cm⁴	Cm <sup>3</sup>	Cm	Cm³	Cm
12	304	50.6	4.78	31.2	8.52	1.53	29.6	1.54
14	491	70.2	5.6	45.4	11	1.7	40.8	1.67
16	747	93.4	6.42	63.3	13.8	1.87	54.1	1.80
18	1090	121	7.24	86	17	2.04	69.8	1.94
20	1520	152	8.07	113	20.5	2.2	87.8	2.07
22	2110	192	8.89	151	25.1	2.37	110	2.21
24	2900	242	9.73	208	31.6	2.6	139	2.42

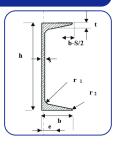
		Chemical Composition											
Steel Grade	C%	Si%	Mn%	P%	S%	N%	CE%						
St 37	≤ 0.20	0.12-0.35	0.2-0.75	≤ 0.040	≤ 0.040	≤ 0.014	0.35						
St 44	≤ 0.23	0.15-0.45	0.35-0.9	≤ 0.040	≤ 0.040	≤ 0.014	0.45						
St 52	≤0.26	≤0.60	≤1.70	≤0.040	≤0.040	≤0.014	0.45						

# **Technical Specification of Rounded edge Heavy gradient Flange**

# Mechanical Specification 360-510 INSO 4477-1 410-560 St 52 355 470-630 22

85

240



6.5 2.23 42.3 33.2

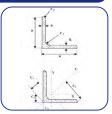
#### Dimension & Mass 120 12 55 4.5 1.60 17 13.4 14 140 10 1.75 20.4 16 60 7 5 10.5 18.8 16 65 160 7.5 5.5 1.84 24 ±2 18 70 ±0.5 11 28 22 180 8 5.5 1.92 ±4 20 75 32.2 25.3 200 8.5 11.5 -1.0 11.5 6 2.01 22 80 220 12.5 37.4 29.4 9 12.5 6.5 2.14 24

				Static Data				
Grade	Ļ	W <sub>x</sub>	i,	Ļ	W <sub>y</sub>	į,	S <sub>x</sub>	X <sub>m</sub>
UE	Cm⁴	Cm <sup>3</sup>	Cm	Cm⁴	Cm <sup>3</sup>	Cm	Cm <sup>3</sup>	Cm
12	304	50.6	4.78	31.2	8.52	1.53	29.6	1.54
14	491	70.2	5.6	45.4	11	1.7	40.8	1.67
16	747	93.4	6.42	63.3	13.8	1.87	54.1	1.80
18	1090	121	7.24	86	17	2.04	69.8	1.94
20	1520	152	8.07	113	20.5	2.2	87.8	2.07
22	2110	192	8.89	151	25.1	2.37	110	2.21
24	2900	242	9.73	208	31.6	2.6	139	2.42

			Chemical C	omposition			
Steel Grade		Si%	Mn%	P%	S%	N%	CE%
St 37	≤0.19	0.12-0.35	0.2-0.75	≤ 0.040	≤ 0.040	≤0.014	0.35
St 44	≤0.23	0.15-0.45	0.35-0.9	≤ 0.040	≤ 0.040	≤0.014	0.40
St 52	≤0.26	≤0.60	≤1.70	≤0.040	≤0.040	≤0.014	0.45

# **Technical Specification of Equai Leg Angle**

	Mechanical Specification								
Standard	Steel Grade	MinYield stress (N/mm2)	Tensile strength (N/mm2)	Min Elongation (%)					
ISIRI	St 37	235	360-510	26					
13968-1	St 44	275	430-580	22					



			Dim	ension & M	lass			
	a (r	nm)	t (m	m)	r (mm)	Cross- sectionalarea	Mass Po	er Length
Type Angle	Nominal	Tolerances %	Nominal	Tolerances %	R1	cm²	Kg/m	Tolerane %
100*100*10	100		10		12	19.2	15	. 6
120*120*12	120		12		13	27.5	21.6	±6
130*130*12	130	±3	12	±1	14	30	23.6	
140*140*12	140		12		14	32.49	25.5	±4
150*150*15	150	±4	15		16	43	33.8	

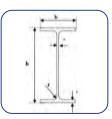
	Static Data													
Standard		x-x=y-y		u	-u		v-v		Edage d	Edage distance to the center				
INSO	l <sub>x</sub> = l <sub>y</sub>	Z <sub>x</sub> = Z <sub>y</sub>	r <sub>x</sub> = r <sub>y</sub>	l,	r,	Ų	Z <sub>v</sub>	r,	c,	C <sub>u</sub>	C <sub>x</sub> = C <sub>y</sub>			
16348	Cm <sup>4</sup>	Cm <sup>3</sup>	Cm	Cm⁴	Cm	Cm⁴	Cm³	Cm	Cm	Cm	Cm			
10*100*100	177	24.6	3.04	280	3.83	73	18.3	1.95	3.99	7.07	2.82			
12*120*120	368	42.7	3.65	584	4.6	152	31.6	2.35	4.8	8.49	3.4			
12*130*130	472	50.4	3.97	750	5	194	37.7	2.54	5.15	9.19	3.64			
12*140*140	602	59.7	4.31	957	5.43	248	45	3.9	-	-	-			
15*150*150	898	83.5	4.57	1430	5.76	370	61.6	2.93	6.01	10.6	4.25			

	Chemical Composition											
Steel Grade	C%	Si%	Mn%	P%	S%	N%	CE%					
St 37	≤ 0.20	0.12-0.35	0.2-0.75	≤ 0.50	≤ 0.50	≤ 0.011	≤ 0.35					
St 44	≤ 0.23	0.15-0.45	0.35-0.9	≤ 0.50	≤ 0.50	≤ 0.011	≤ 0.40					

# **Technical Specification of Semi Light Weight** Medium Flange I7- Beam

# Mechanical Specification

Standard	Steel Grade	MinYield stress (N/mm2)	Tensile strength (N/mm2)	Min Elongation (%)
INSO	S275JR	275	430-580	22
16348	S295JR	295	430-630	22



### Dimension & Mass

Туре		b	r			S	1		r	CrossSectional Area	Mass Pe	er Length	
I-6		mm		mm mm		ım	mm		mm	cm²	Kg/m	Tolerane %	
14	72		140	+3	4.1		6.2	+1.5 -0.5	7	14.6	11.4		
16	81	+4	160	-2	4.7	.07	6.6	+2	9	18.3	14.4	±4	
18	90	] -'	180		5.3	±0.7	7.2	-1	9	22.4	17.6		
20	99		200	+4 -2	5.7		7.3	-1	12	26.3	20.6		

	Otalio Bala											
	Standard		lx	Wx	rx	ly	Wy	ry	Sx	The distance between the axes of tension		
Г	INSO 16348			Cm <sup>4</sup>	Cm <sup>4</sup> Cm <sup>3</sup>		Cm Cm <sup>4</sup>	Cm <sup>3</sup>	Cm	Cm <sup>3</sup>	SPX	
				CIII	O.III		0.11		Cili		Cm	
Г		14		140	487	69.59	5.78	38.70	10.75	1.63	39.52	12.33
	I-7	16	6 IPE	160	789	98.59	6.57	58.74	14.50	1.79	56.15	14.05
1-7	18 20	"-	180	1214	134.89	7.36	87.86	19.52	1.98	76.96	15.77	
			200	1745	174.54	8.15	118.78	24.0	2.13	99.69	17.51	

### Chemical Composition

Steel Grade	C%	Si%	Mn%	P%	S%	N%	CE%
S275JR	≤0.21	0.12-0.35	0.20-0.75	≤0.04	≤0.04	≤0.014	≤0.40
S295JR	≤0.23	0.15-0.45	0.35-0.90	≤0.035	≤0.035	≤0.014	≤0.45





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