



**BALBIR** Rolling Mills Private Limited

(An ISO Certified Company)

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**THE STRENGTH OF PURE STEEL**



# PROFILE

## Company

Balbir Group is involved in quality Steel manufacturing in Gujarat and Dadra & Nagar Haveli for almost two decade. The Group's network encompasses steel plants at Vapi (Gujarat), and Silvassa (D & NH). The Group has fully automatic steel rolling mills at Vapi (Gujarat) and Silvassa (D & NH) manufacturing quality rebars and two mills at Silvassa manufacturing structural steel (Angle, Channels, Beams).



## Values

Sustainable development and quality has been a key thrust at BALBIR. It is important that we continuously contribute towards the country's economy for a stronger India of tomorrow. Our growth in the past two decade is testimony of this.

## Aim

Balbir Group constantly strives for providing highest quality products to their customers with the responsibility of benefiting our business associates and ultimately the end customers. This is being constantly strived upon by the company through lower cost of production and efficient management without compromise in quality to provide our consumers a cost effective product.

## Features

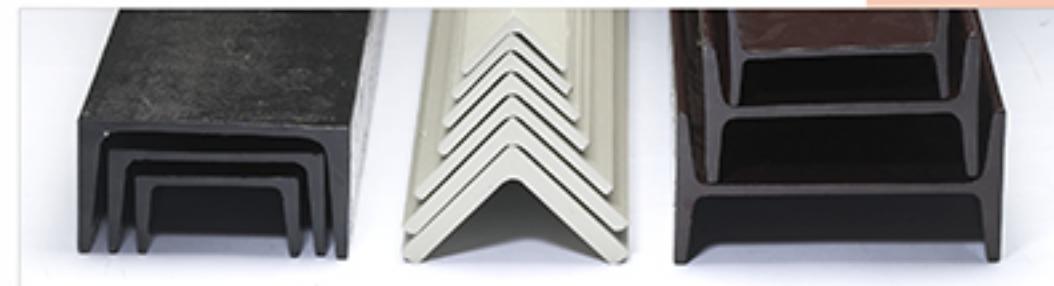
- Controlled low temperature rolling is practiced to give higher strength to the structures.
- Chemical composition is maintained strictly as per standards by our own plants manufacturing raw materials (Billets).
- Facility to roll special sizes and length as per specific requirements of customers.
- Facility of straightening of all sections for special application like power transmission and telecom tower & precision engineering.



IS: 2062/2011



CML-7666089



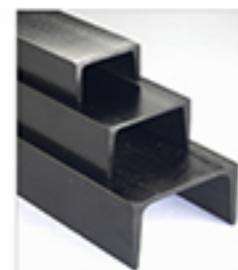
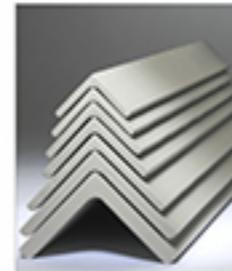


## Structurals

## ANGLES • CHANNELS • BEAMS

Our commitment to our values and growth enabled us to put up a fully mechanised structural rolling mill in Silvassa to cater to the growing demand of the region. In the year 2005, the Balbir Group commenced production of quality structural steel Angles, Channels and Beams conforming to IS:2062/2011, GR-Fe 250-A & C. In keeping with our customers requirement another plant by the group company was established in 2008 to produce light sections at Silvassa. This enabled us to provide sections of all sizes.

PRODUCT RANGE	SECTION WT. (Kg / m)
<b>Equal Angles</b>	
35 x 35 x 5	2.6
40 x 40 x 5	3.0
40 x 40 x 6	3.5
45 x 45 x 5	3.4
50 x 50 x 5	3.8
50 x 50 x 6	4.5
65 x 65 x 5	4.9
65 x 65 x 6	5.8
65 x 65 x 8	7.7
65 x 65 x 10	9.4
75 x 75 x 6	6.8
75 x 75 x 8	8.9
75 x 75 x 10	11.0
90 x 90 x 6	8.2
90 x 90 x 8	10.8
90 x 90 x 10	13.4
100 x 100 x 6	9.2
100 x 100 x 8	12.1
100 x 100 x 10	14.9
100 x 100 x 12	17.7
110 x 110 x 8	13.4
110 x 110 x 10	16.6
110 x 110 x 12	19.7
<b>Channels</b>	
75 x 40	7.1
100 x 50	9.5
125 x 65	13.1
150 x 75	16.8
200 x 75	22.3
250 x 82	34.2
300 x 90	35.9
<b>Beams</b>	
100 x 50	8.9
125 x 70	13.3
150 x 75	15.0
200 x 100	24.2
250 x 125	37.3
300 x 140	45.1
<b>'H' Beam</b>	
116 x 100	23.0
150 x 150	37.1



## Activities

Balbir Group is making steel from raw to the finished stage. It's steel melting units in Silvassa are involved in making Billets of prime quality. This allows our rolling division to manufacture products precisely as per standards laid down by various quality agencies.



## Certification

Balbir Rolling Mills Pvt. Ltd. is manufacturing Thermex QST Bars and Structural steel at Silvassa & Vapi, Gujarat for which it has ISI Certification. The rolling division has also received ISO 9001-2008 Certification for its quality working in the mills. Our products are on the approved list of various agencies such as MES, GEB, Railways, L & T, Reliance, HCC, ESSAR, J. Kumar, Jubilant and various state department and various leading construction groups in Maharashtra and Gujarat.



## The Collaboration

Balbir Rolling Mills Pvt. Ltd. has been licensed by Henningsdorfer Stahl Engg. GmbH, Germany - through its Indian collaborator H&K Rolling Mill Engineers Pvt. Ltd., - to manufacture Thermex bars in South Gujarat. Balbir is one of the leading producers of steel in this region - its promoters having vast experience in quality Steel manufacturing.



## The Process

A short, intensive but very precise on-line cooling of the rolled bars is imparted in the Thermex process through a proprietary system. This treatment results in a cooled hardened periphery. On further cooling of the bars in atmosphere, a thermal exchange (THERMEX) occurs between the core and cooled outside surface whereby the resultant bars structure is a distinct tempered martensite at periphery and a fine grained ferrite-pearlite structure in the central zone.

The Thermex bars produced by the above quenching and self tempering process (QST) has unique qualities of desired high strength and toughness combined with excellent ductility with bars having elongation values of 18 to 25%.



## Advantages

- Superior Product with consistent quality from bar to bar
- Higher elongation combined with high yield strength
- High thermal stability resisting loss of strength at high temperatures (400-600 deg. C) such as during fires
- Better corrosion resistance • Better resistance to fatigue
- High weldability • High ductility • Bond strength
- Resistance to strain aging



Dr. P. Bhushan (left) Chairman - Balbir Group  
With Mr. F. Tamis (right) - MD of HSC, Germany.  
Founder of Thermex Technology and  
Mr. R. K. Makani (centre) - MD H&K, India



**THERMEX®**  
Q S T B A R S



## Standards

All Babir Thermex Bars conform to standards as mentioned below.

S. No.	Properties	IS 1786 Fe 415	Babir Thermex 400 Typical Values	IS 1786 Fe 500	Babir Thermex 500 Typical Values	IS 1786 Fe 5000	Babir Thermex 5000 Typical Values	IS 1786 Fe 550	Babir Thermex 550 Typical Values
1	Yield Strength N/mm <sup>2</sup> , min	415 min	430 - 460	500 min	520 - 550	500	530 - 580	550	570 - 600
2	Tensile Strength N/mm <sup>2</sup> , min	485 min	500 - 570	545	560 - 630	565	610 - 650	585	630 - 670
3	Shear Ratio (UTS/YYS), min	1.10	1.15 - 1.35	1.08	1.15 - 1.30	1.1	1.2 - 1.4	1.05	1.12 - 1.4
4	% Elongation	14.5 min	20 - 24	12 min	16 - 20	16 min	18 - 22	8 min	12 - 14



SIZE RANGE / WEIGHT RANGE	
SIZE (Nominal Dia)	SECTION WT. (Kgm)
8 mm	0.376 - 0.420
10 mm	0.592 - 0.636
12 mm	0.852 - 0.915
16 mm	1.517 - 1.627
20 mm	2.371 - 2.544
25 mm	3.696 - 3.927
28 mm	4.646 - 4.937
32 mm	6.060 - 6.440

## Bending Properties

Parameter	Size	IS 1786 Fe 415	Babir Thermex 400	IS 1786 Fe 500	Babir Thermex 500	IS 1786 Fe 5000	Babir Thermex 5000	IS 1786 Fe 550	Babir Thermex 550
Bond	Upto & incl. 20mm Over 20 mm	3d 4d	2d 3d	4d 5d	3d 4d	3d 4d	3d 4d	5d 6d	4d 5d
Rebend	Upto & incl. 10mm Over 10 mm	5d 7d	4d 6d	5d 7d	4d 6d	4d 6d	4d 6d	7d 8d	6d 7d



## Advantages

A summary of the savings by use of Thermex 500 bars, as per design examples of beams and columns as calculated by an eminent structural designer is given below :

BEAMS : 300 X 700 MM					
Case No.	Concrete	Mu <sub>bd</sub> <sup>f</sup>	Kg. Steel Fe 415	Kg. Steel Thermex 500	Savings by use of Thermex 500
1	M-20	3.2	109.69	93.18	15.05%
2	M-25	3.2	103.73	86.50	16.61%
3	M-30	3.2	98.87	84.34	14.70%
4	M-20	4.2	162.74	141.20	13.23%
5	M-25	4.2	150.90	128.43	14.89%
6	M-30	4.2	137.14	115.24	15.96%
7	M-20	5.0	212.40	178.70	15.87%
8	M-25	5.0	207.25	165.80	20.00%
9	M-30	5.0	177.94	150.60	15.25%



## COLUMNS

Axial Loaded Column:  
Assumed: 300 x 900; Concrete M-25; Load = 350 KN; Unsupported Length 3.0 M;  
Steel Fe 415 = 68.68 Kg; Steel Thermex 500 = 58.0 Kg; Savings = 15.55%  
Rectangular Column with Uniaxial Bending:  
Factored Load = 1200 KN; Factored Moment = 200KN-m; Unsupported Length 3.0 M;  
Column Size 230 x 600; Concrete M-25;  
Steel Fe 415 = 52.7 Kg; Steel Thermex 500 = 44.4 Kg; Savings = 15.75%