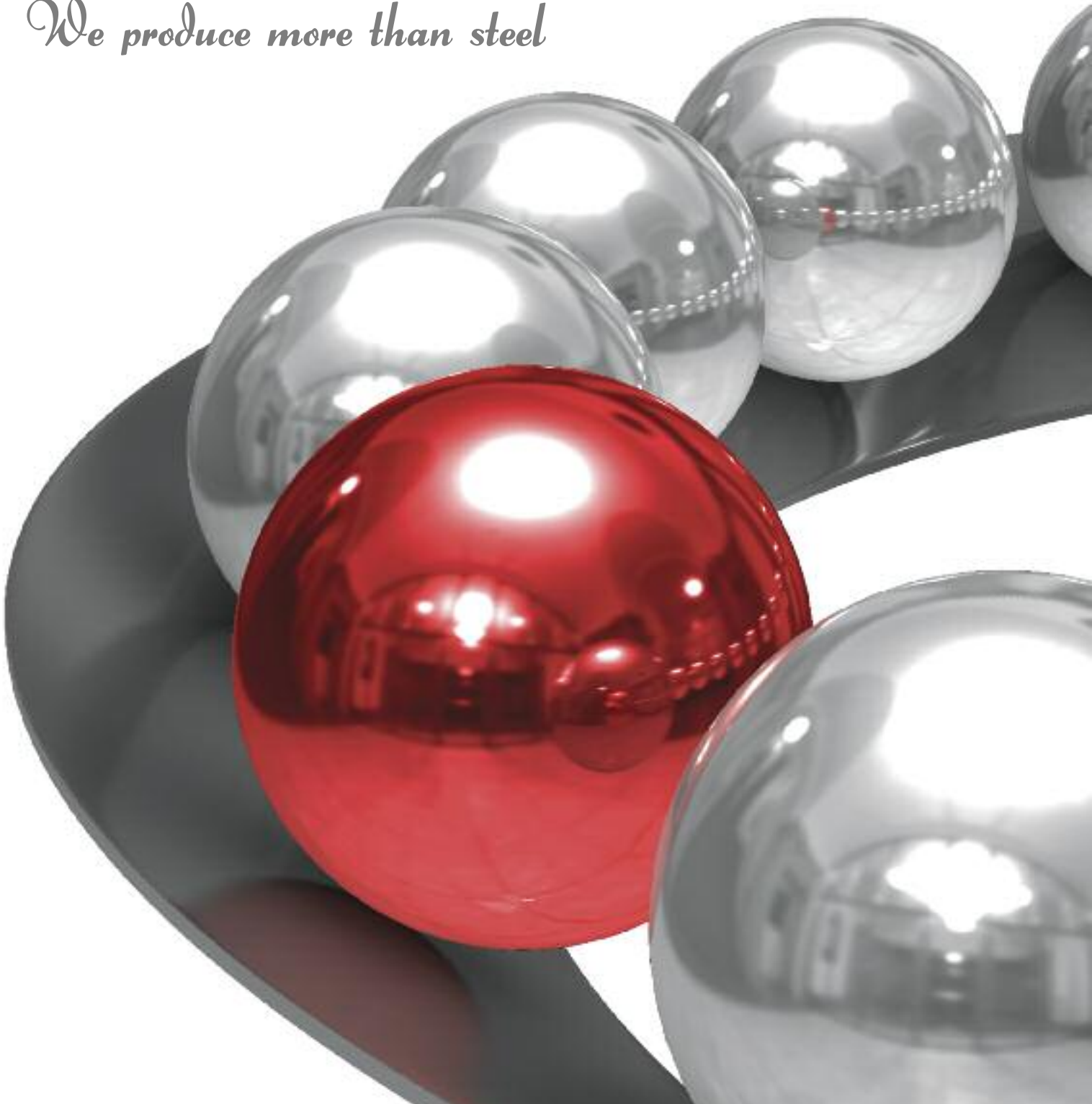




We produce more than steel



FROM THE DESK OF **CHAIRMAN**



*K*L Group through its philosophy of all inclusive growth in terms of technology and human resources, is dedicated to serve the nation as a leader in the Steel industry.

We produce more than Steel because apart from producing steel, we give our esteemed clients, the most valuable thing- a satisfaction of getting a quality produce with the best competitive prices in the market.

The story began 58 years back with setting up of a small plant at Mandi Gobindgarh in Punjab. Now, with our relentless efforts and sincerity, that small sapling has become a big tree with its branches across the country. These other branches under the flagship banner of K L Steels (P) Ltd are, K L Concast, Raj Steel Rolling Mill and Adarsh Steel.

Our vision is to expand, diversify and make a mark in achieving milestones, with a promise of giving a healthy competition to our competitors in the trade.

I, personally wish to see K L Group converting into a Strong and Integrated K L Family .

(Kanhaya Lal bardeja)
Chairman

FROM THE DESK OF **MANAGING DIRECTOR**



*W*here there is no vision, people perish. Thus, we at K L Steels, are working tirelessly to realize a vision that is to be a leader in the Industry. Our commitment is towards producing quality products for general engineering purpose, through advance technology incorporated in our state-of-art steel plants across the country.

Now, K L Steel (P) Ltd can boast of the fact that it is the only manufacturer in north India with its production capacity crossing over 2,00000 tonnes per annum (TPA). With our MoU with DSP, SAIL and BSP SAIL for blooms of medium manganese and low sulphur -phosphorus, we are surging ahead.

Our focus is towards giving the best services along with quality material at competitive prices. Now, with our expansion plan to make a mark in transmission industry, we wish to reiterate our commitment towards our vision and philosophy.

We grow with the organization and I firmly believe in it. Thus, we at K L Steels, envisage an ambience in which our human resources develop along with the growth in technology.

(Raj Bardeja)
Managing Director





We produce more than steel

QUALITY / SPECIAL FEATURE

We have sound infrastructure capable of producing 100000 t.p.a steel beams and channels. The manufacturing plant includes two mills. One engineering workshop apart from well equipped laboratory.

Quality is the outcome of ongoing manufacturing process which is strictly monitored at all stages. We conduct in house tensile strength test to ensure only top grade material reaches the field. Where required by the relevant construction rules, products are pressure tested before final acceptance.

The company caters to a wide gamut of customers in India and abroad. The intrinsic strength strength of the company such as low operating costs, special organizational culture and good profitability has been widely appreciated and has helped the company grow to its present stature.

Bloom / Billets of DSP-SAIL contain medium Manganese and low Sulphur and Magnese. Sulphur and Phosphorous are impurities of steel. Sulphur forms a network at the grains boundaries of steel This consitituent has a low melting point and causes a lack of cohesion between the grains of the steel when it is hot worked. The property of being weak at high temperature is known as hot shortness. High Sulphur and high Phosphorous (0.09 to 0.13%) is not satisfactory for applications requiring resistance to shock.

Material Produced at K L Steels is 100% free from impurities and high in strength and with shock absorbing properties.

PLANT AND MACHINERY

Our foremost motive of producing a product most efficiently, effectively and of the highest quality is supported by the most sophisticated machinery there is to offer, which helps us to achieve our goals. Thus we use the following machiery and equipments.

FURNACE: We have a very high capacity furnace which is fitted with temperature control system.

POWER BACKUP: Have 100% power backup to ensure continuous and regular production.

CRANE: All our material is handled with crane to ensure the product does not bend and the quality is not compromised.

STRAIGHTENING MACHINE: Which helps to straighten our product.

HOT SAW MACHINE: This helps us in accurate, faster and smother cutting of the product.

FOUR WAY COOLING BED: For the finished product which ensures proper cooling, which helps to maintain product's properties and keep it straight.



LAB AND TESTING FACILITY

In our business it becomes essential to test the authenticity and the quality of the raw material as well as the finished Product, thus we have the following lab and testing facilities to help us understand the product better.

FOUNDRY MASTER (GERMANY): This helps us to know the chemical composition of any metal whether raw material or finished product, which helps to determine the level of quality of the product.

UNIVERSAL TEST MACHINE: Which helps us to determine the yield strength, tensile strength and the elongation of the product.

IMPACT TEST MACHINE: This helps us to carryout charpy test.

COMBUSTION GAS ANALYZER: This helps us to determine the level and composition of the combustion gas.

LASTER THERMOMETER: This instrument helps us to check the temperature of the furnance, through laser system.

SPECTROMETER: Foundry Master (spectrometer) has been imported from Germany and is used to do fast and accurate chemical analysis test.



RANGE OF PRODUCTS

The strength, durability and accuracy has established our products as best as quality product in the market. Under the dynamic leadership & command of Shri SETH KANHAYA LAL JI (a recipient of " UDYOGA PATRA" award from the Hon' ble President of India for his excellence, achievements and contributions as a self made industrialist for the development of the country) the Group is one of the fastest growing industrial houses with undisputed leadership in forward integration. Because of its relentless pursuit of excellence and aggressive. The group is witnessing spectacular success since its inception. The credibility that our products enjoy in market is sue to our motto" Quality that Commands."

Our products & their area of usage:

1. STRUCTURAL SECTIONS

Joists, Channels, H-Beams, Sectional Column, W- Beams, Narrow Parallel Beams, Wide Parallel Beam.

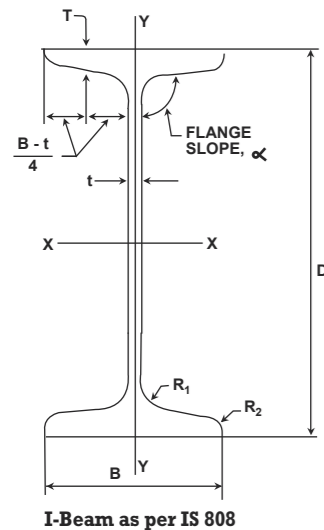
- Petrochemical ■ Civil Constructions
- Turnkey Projects ■ Railways ■ Industrial Sheds ■ Refineries
- Heavy Equipments ■ Material Handling ■ Fabrications and Many more



GRADE AND SPECIFICATIONS

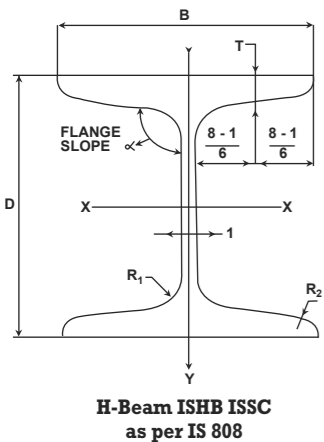
The Group manufactures products from tested quality Blooms & Billets Procured from steel Authority of India Limited (SAIL). The use of such Raw Material from reliable source guarantees a balanced Chemical Composition and uniform quality of high order. Our ranges of product are:

I-Beam as per IS 808



Designation	Mass M	Sectional Area, a	Dimensions							
			D	B	t	T	Flange Slope, Mac a, deg	R ₁	R ₂	
(1)	Kg/m	cm ²	mm	mm	mm	mm	mm	mm	mm	mm
MB 150	15.0	19.1	150	75	5.0	8.0	98.0	9.0	4.5	
MB 175	19.6	25.0	175	85	5.8	9.0	98.0	10.0	5.0	
MB 250	37.3	47.5	250	125	6.9	12.5	98.0	13.0	6.5	
MB 300	46.0	58.6	300	140	7.7	13.1	98.0	14.0	7.0	
MB 350	52.4	66.7	350	140	8.1	14.2	98.0	14.0	7.0	
MB 400	61.5	78.4	400	140	8.9	16.0	98.0	14.0	7.0	
MB 450	72.4	92.2	450	150	9.4	17.4	98.0	15.0	7.5	
MB 500	86.9	111	500	180	10.2	17.2	98.0	17.0	8.5	
MB 600	123	156	600	210	12.0	20.0	98.0	20.0	10.0	

H-Beam ISHB ISSC as per IS 808

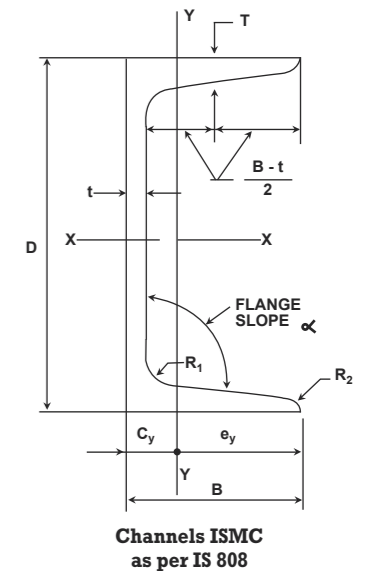


Designation	Mass M	Sectional Area, a	Dimensions							
			D	B	t	T	Flange Slope, Mac a, deg	R ₁	R ₂	
(1)	Kg/m	cm ²	mm	mm	mm	mm	mm	mm	mm	
Column Sections										
SC 150*	37.1	47.4	152	152	7.9	11.9	98.0	11.7	3.0	
SC 160	41.9	53.4	160	160	8.0	13.0	98.0	15	7.5	
SC 150* (BFB Section) is mainly used for railway electrification.										
Heavy Weight Beams / Columns										
HB 150	27.1	34.5	150	150	5.4	9.0	94.0	8.0	4.0	
HB 150*	30.6	39.0	150	150	8.4	9.0	94.0	8.0	4.0	
HB 150*	34.6	44.1	150	150	11.8	9.0	94.0	8.0	4.0	
HB 200	37.3	47.3	200	200	6.1	9.0	94.0	9.0	4.5	
HB 200*	40.0	50.9	200	200	7.6	9.0	94.0	9.0	4.5	

* These heavier sections in each size are obtained from the same set of rolls as the lighter sections by spreading of the rolls. The width of flanges of these sections gets increased by an amount equal to the difference between the thicknesses of the webs. Therefore, while ordering these heavier sections, mass should be mentioned. **Note:** HB sections are also used as a column Sections.

Channels ISMC as per IS 808

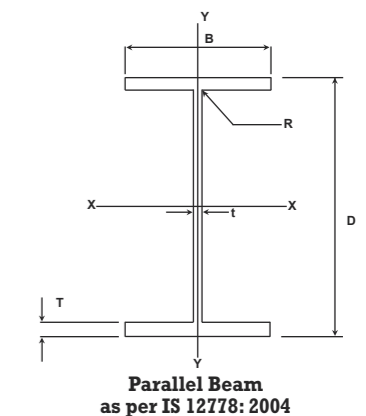
Designation	Mass M	Sectional Area, a	Dimensions							
			D	B	t	T	Flange Slope, Mac a, deg	R ₁	R ₂	
(1)	Kg/m	cm ²	mm	mm	mm	mm	mm	mm	mm	
MC 200	22.3	28.3	200	75	6.2	11.4	96	11.0	3.2	
MC 250	30.6	39.0	250	80	7.2	14.1	96	12.0	3.2	
MC 250*	34.2	43.5	250	82	9.0	14.1	96	12.0	3.2	
MC 300	36.3	46.3	300	90	7.8	13.6	96	13.0	3.2	
MC 400	50.1	63.8	400	100	8.8	15.3	96	15.0	4.8	
* The heavier sections in each size intended for use in wagon industry are to be obtained from same set of rolls as the corresponding lightest section in that size group, by raising the rolls.										
Light Weight Channels										
LC 200	20.6	26.3	200	75	5.5	10.8	91.5	8.5	3.2	
LC 250	28.0	35.7	225	90	5.8	10.2	96	11.0	3.2	



W Beam as per IS 808

Designation	Mass M	Area a	Depth D	Width B	Web Thickness t	Flange T	Root Radius R	Moment of Inertia	
(1)	kg/m	cm ²	mm	mm	mm	mm	mm	I _x cm ²	I _y cm ²
WB 200*	52.0	66.5	203	152	8.9	16.5	98.0	15.5	7.6

WB 200* (RSI Section) mainly used for railway electrification.



Parallel Beam as per IS 12778: 2004

Designation	Mass M	Area a	Depth D	Width B	Web Thickness t	Flange T	Root Radius R	Moment of Inertia	
(1)	kg/m	cm ²	mm	mm	mm	mm	mm	I _x cm ²	I _y cm ²
NPB 140x70x	12.89	16.4	140	73	4.7	6.9	7	541	44.9
NPB 200x100x	22.36	28.5	200	100	5.6	8.5	12	1943	142.4
NPB 200x130x	27.37	34.9	207	133	5.8	8.5	12	2666	334.0

Upcoming P. Range Parallel W Beam

PBL 140x140x	24.66	31.4	133	140	5.5	8.5	12	1033	389.3
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We produce more than steel

STANDARD AND GRADES

Chemical Composition

Grade Designation	Quality	Ladle Analysis, Percent, Max					Carbon Equivalent ¹⁾	Method of Deoxidation ¹⁾
		(3)	(4)	(5)	(6)	(7)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
E165 (Fe 290)	-	0.25	1.25	0.045	0.045	-	-	Semi-killed or killed
E 250 (Fe 410 W)	A	0.23	1.50	0.045	0.045	0.40	0.42	Semi-killed or killed
E250 (Fe 410 W)	B	0.22	1.50	0.045	0.045	0.40	0.41	Killed
E250 (Fe 410 W)	C	0.20	1.50	0.040	0.040	0.40	0.39	Killed
E 300 (Fe 440)	-	0.20	1.30	0.045	0.045	0.45	0.40	Semi-killed or killed
E350 (Fe 490)	-	0.20	1.50	0.045	0.045	0.45	0.42	Semi-killed or killed
E410 (Fe 540)	-	0.20	1.60	0.045	0.045	0.45	0.44	Semi-killed or killed
E450 (Fe 570)	D	0.22	1.60	0.045	0.045	0.45	0.46	Semi-killed or killed
E450 (Fe 590)	E	0.22	1.80	0.045	0.045	0.45	0.48	Semi-killed or killed

NOTE:

- Carbon equivalent (CE) based on ladle analysis = $C + \frac{Mn}{6} + \frac{(Cr + Mo + V)}{5} + \frac{(Ni + Cu)}{15}$
- When the steel is killed by aluminum alone, the total aluminium content shall not be less than 0.02 percent. When the steel is killed by silicon alone, the silicon content shall not be less than 0.10 percent. When the steel is silicon-aluminium killed, the silicon content shall not be less than 0.03 percent and total aluminium content shall not be less than 0.01 percent.
- Microalloying element like Nb, V, Ti and B shall be added singly or in combination. Total microalloying elements shall not be more than 0.25.
- New grades designation system based on yield stress has been adopted, simultaneously old designations have also been given in parentheses.
- Steels of qualities A, B and C are generally suitable for welding processes. The weldability increases from quality A to C.
- Copper may be present between 0.20 to 0.35 percent as mutually agreed to between the purchaser and the manufacturer. The copper bearing quality shall be designated with a suffix Cu, for example, E 250 Cu. In case of product analysis the copper content shall be between 0.17 and 0.38 percent.
- Nitrogen content of steel shall not exceed 0.012 percent which shall be ensured by the manufacturer by occasional check analysis. For micro alloyed steel this is to be reduced to 0.009 percent.

Mechanical Properties

Grade Designation	Quality	Tensile Strength R _m Min MPa	Yield Stress, R _m Min MPa			Percentage Elongation, A at Gauge Length, L ₀ 5.65 √S ₀ Min	Internal Bend Diameter Min ¹⁾		Charpy V-Notch Impact Energy Min J	
			<20	20-40	>40		≤25	>25	Room Temp ²⁾	-20°C
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
E165 (Fe 290)	-	290	165			23	2t	-	-	-
E250 (Fe 410 W)	A	410	250	240	230	23	3t	2t	-	-
E250 (Fe 410 W)	B	410	250	240	230	23	2t	3t	27 ²⁾ (see Note 3)	
E250 (Fe 410 W)	C	410	250	240	230	23	2t	3t	27 ²⁾ (see Note 3)	
E300 (Fe 440)	-	440	300	290	280	22	2t	3t	50	30
E350 (Fe 490)	-	490	350	330	320	22	2t	3t	50	25
E410 (Fe 540)	-	540	410	390	380	20	2t	3t	50	25
E450 (Fe 570)	D	570	450	430	420	20	2t	3t	45	20
E450 (Fe 590)	E	590	450	430	420	20	2t	3t	45	20

NOTE:

- 1MPa = 1N/mm² = 1MN/m² = 0.102 kgf/mm² = 144.4 psi
- Temperature of Charpy impact values will be subject to mutual agreement.
- The more stringent requirements than those given above may be as agreed to between the purchaser and the manufacturer.
 - J is the thickness of the test piece
 - Room temperature = 25 ± 2°C for Impact test.

APPROVALS

- RDSO ■ CORE ■ MES ■ EIL ■ ISO-9001-2000 ■ IOCL
- STEEL AUTHORITY OF INDIA LIMITED





PRESTIGIOUS CLIENTS

 DMRC (DELHI METRO RAIL CORPORATION)	 GUJARAT AMBUJA CEMENT	 NTPC (NATIONAL THERMAL POWER CORPORATION)	 DGS&D (DIRECTORATE GENERAL OF SUPPLIES AND DISPOSALS)	 POWER GRID CORPORATION OF INDIA
 IFFCO (INDIA FARMERS FERTILIZER CORPORATION OF INDIA)	 MAWANA SUGAR MILL	 TOYO INDIA	 BHEL (BHARAT HEAVY ELECTRICALS LIMITED)	 AFCONS INFRASTRUCTURE (A GROUP OF TATA)
 PATEL ENGINEERING	 IOC (INDIA OIL CORPORATION)	 GVK INDUSTRIES LIMITED	 BIRLA GROUP	 ADANI GROUP
 LARSEN AND TOUBRO	 GAMMON INDIA	 UPSEB (UP STATE ELECTRICITY BOARD)	 J&KUA HYDRO POWER PROJECTS	 INDIAN RAILWAYS
 IRRIGATION DEPARTMENT	 JP CONSTRUCTIONS	 सल SAIL	 HCC HINDUSTAN CONSTRUCTION COMPANY	





We produce more than steel

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