

Methodology

# **India Finish Long Steel Assessment**

(Rebar, Wire rod & Structure)

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## Methodology: India Finish Long Steel Assessment

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### Introduction

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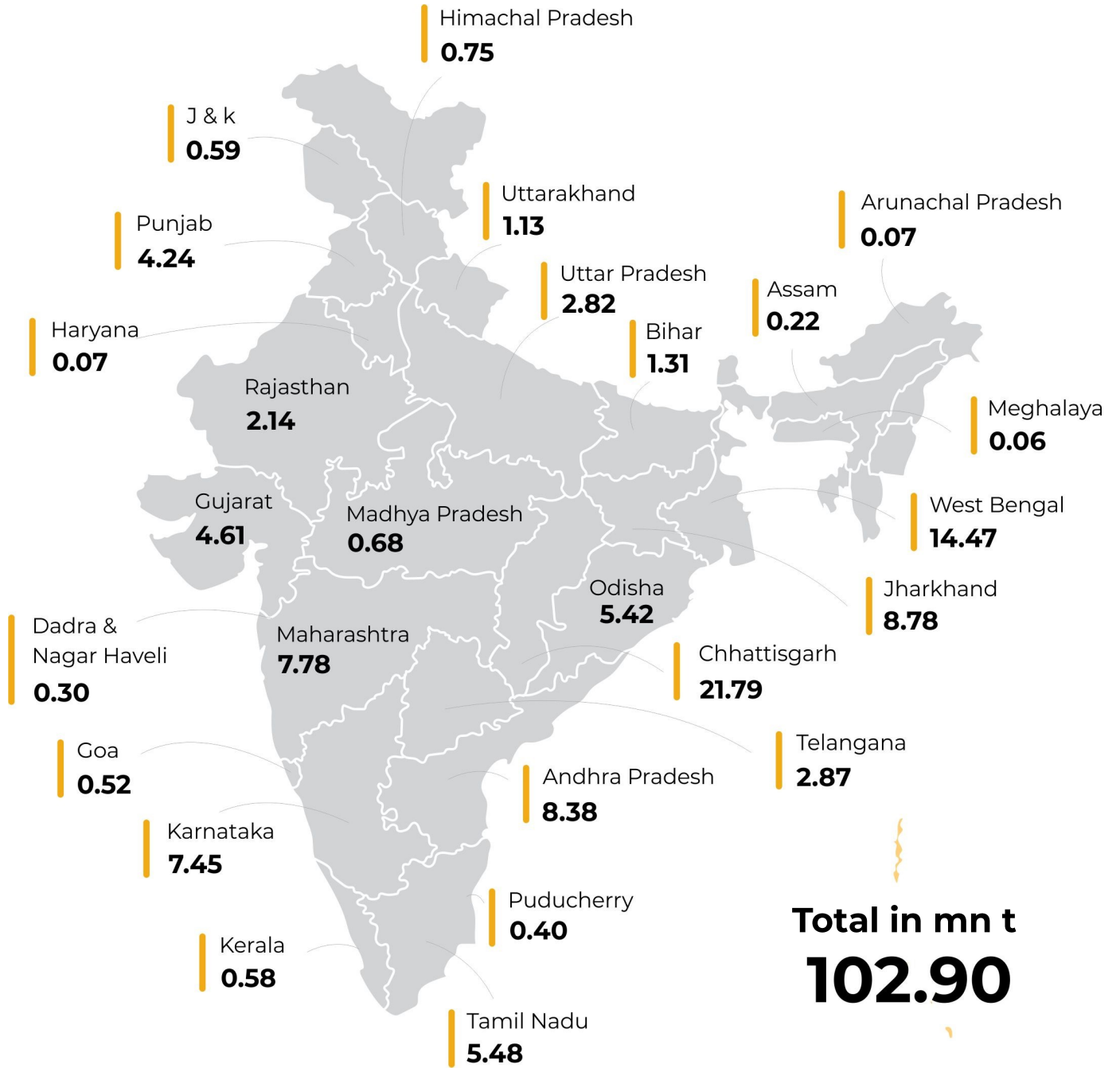
SteelMint's credible prices have been serving as a benchmark for manufacturers, buyers, traders and end-users in the steel industry to settle contracts or to understand the market cost of physical supply of commodities such as Rebar. We have created comprehensive and robust methodologies to ensure accurate assessment of India domestic Rebar prices, which are governed by SteelMint's standards of compliance with the public and our stakeholders. These methodologies conform to the market dynamics of specific regions of the country and hence, in the case of Rebar, different geographies entail different approaches and customised methodology of price assessment. These would be covered in detail under each region below.

India is the second-fastest growing major economy in the world, according to the World Bank. The country is forecast to grow at a rate of 8.3% in the current fiscal. To tide over the economic slowdown induced by successive waves of the pandemic, the government has infused fiscal stimulus for economic growth that relies on rapid development of steel-intensive infrastructure and construction.

The infrastructure and construction sector in the country consumes about 60-65% of the steel produced on an annual basis. The government's INR 111 crore infrastructure pipeline envisages the construction of bridges, flyovers, ports, airports and highways that would require a massive quantum of steel.

India emerged as the second-largest crude steel producing country in the world after China in financial year 2021. India had 155 million tonnes of crude steel capacity in FY'21. The total Rebar production capacity of the rolling mills spread across different regions of India stands at 58.0 million tonnes. Thermo mechanically treated (TMT) bars or reinforcement bars, re-bars in short, form the backbone of any construction.

India's Finished Long Steel Capacity, FY'21



## India: Finished Long Steel Capacity, FY'21

Region	States	Rebar	Wire Rod	Structure	Finished Long Capacity
North	Himachal Pradesh	483,000		262,000	745,000
	J & k	273,000		317,600	590,600
	Punjab	1,174,500	201,600	2,864,300	4,240,400
	Haryana			72,000	72,000
	Uttar Pradesh	2,121,000	80,000	622,000	2,823,000
	Uttarakhand	1,074,200		60,000	1,134,200
East	Arunachal Pradesh	68,800			68,800
	Assam	220,000			220,000
	Bihar	1,306,500			1,306,500
	Chhattisgarh	7,485,900	3,582,200	10,718,200	21,786,300
	Jharkhand	5,992,800	2,360,000	430,000	8,782,800
	Madhya Pradesh	510,000	166,000		676,000
	Meghalaya	57,000			57,000
	Odisha	3,632,000	200,000	1,586,400	5,418,400
	West Bengal	7,048,400	2,990,000	4,428,000	14,466,400
South	Andhra Pradesh	3,674,000	1,810,000	2,900,000	8,384,000
	Karnataka	3,587,000	1,800,000	2,061,000	7,448,000
	Kerala	515,000		60,000	575,000
	Puducherry	240,000		158,000	398,000
	Tamil Nadu	3,668,700	200,000	1,611,000	5,479,700
	Telangana	2,306,000		568,000	2,874,000
west	Dadra & Nagar Haveli	258,000		45,000	303,000
	Goa	330,000		192,000	522,000
	Gujarat	3,701,000		910,000	4,611,000
	Maharashtra	6,429,500		1,348,000	7,777,500
	Rajasthan	1,839,900		304,000	2,143,900
	Total in t	57,996,200	13,389,800	31,517,500	102,903,500
	in mn t	57.996	13.39	31.52	102.90

Manufacturing plants having Capacity > 45,000 t pa.  
 Structure steel (Structures, Rounds and Rails) contains Carbon and Alloy steel capacity both.  
 Rebar and Wire rod contains carbon steel capacity.  
 Source: SteelMint

## Finished Long Steel Capacity, FY'21

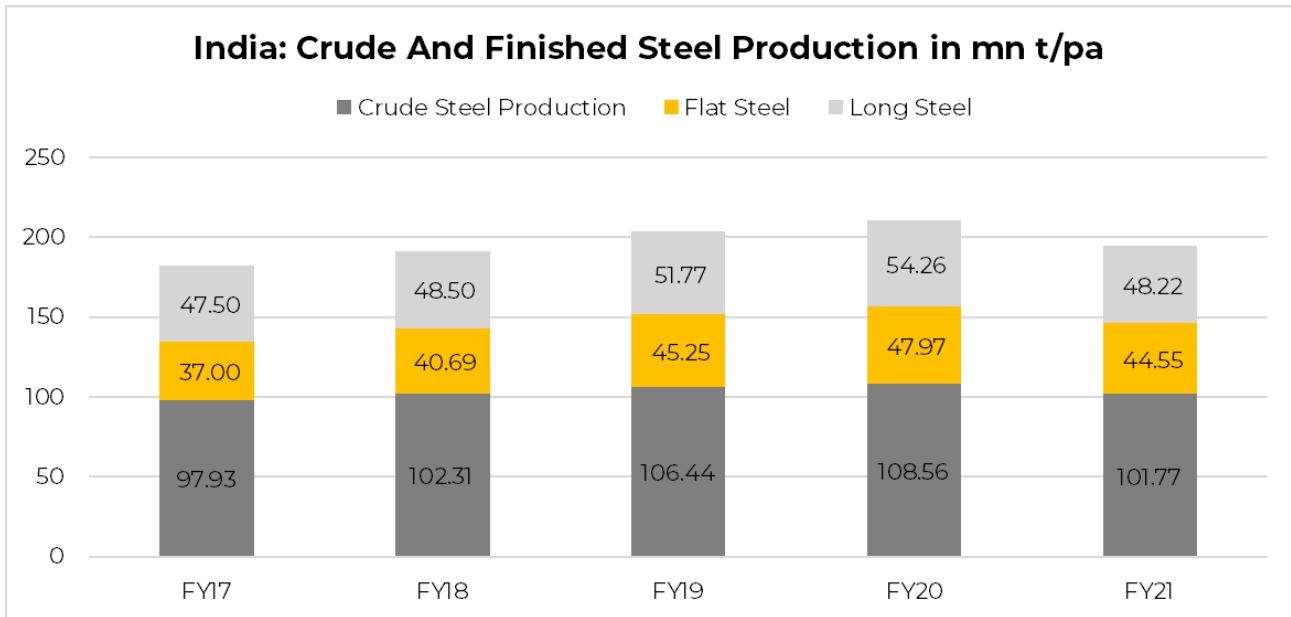
Primary Producers	Location	Rebar	Wire Rod	Structure
Sail	Bhilai,Burnpur,Durgapur	2.50	2.05	5.81
Rinl	Visakhapatnam	1.80	1.81	2.01
Tata	Jamshedpur	2.50	1.16	0.43
Jspl	Angul,Patratu	2.40	0.60	1.45
ESL (Vedanta)	Saraikela (Bokaro)	0.70	0.60	
JSW	Vijaynagar,Dolvi	3.70	2.00	1.75
<b>Sub Total</b>		<b>13.60</b>	<b>8.22</b>	<b>11.45</b>
<b>Secondary Producers</b>		<b>44.39</b>	<b>5.17</b>	<b>20.07</b>
<b>Grand Total</b>		<b>57.99</b>	<b>13.39</b>	<b>31.52</b>

\*Manufacturing plants having Capacity > 45,000 t pa.

\*\*Capacity in mn t pa , JSW Capacity excluding the Monnet Raigarh.

## Finished Long Steel Capacity Region wise, FY'21

Region	Rebar	Wire Rod	Structure
North	5.13	0.28	4.21
East	26.32	9.29	17.16
South	13.99	3.82	7.35
West	12.55		2.80
<b>Total</b>	<b>57.99</b>	<b>13.39</b>	<b>31.52</b>
Capacity in mn t pa			



Source: SteelMint

### India: Crude Steel Production:

FY	Crude Steel Production	Flat Steel	Long Steel	Flat + Long	Rebar	Structure	Wire Rod	Rails+ Rounds+ Others
FY17	97.93	37.00	47.50	84.50	26.50	7.85	3.73	9.42
FY18	102.31	40.69	48.50	89.19	26.50	8.14	12.61	1.25
FY19	106.44	45.25	51.77	97.02	28.82	8.59	12.94	1.42
FY20	108.56	47.97	54.26	102.23	34.56	7.41	10.48	1.81
FY21	101.77	44.55	48.22	92.77	30.37	6.34	10.00	1.51

# Flat Steel includes HRC + Plate production, quantity in mn t/pa

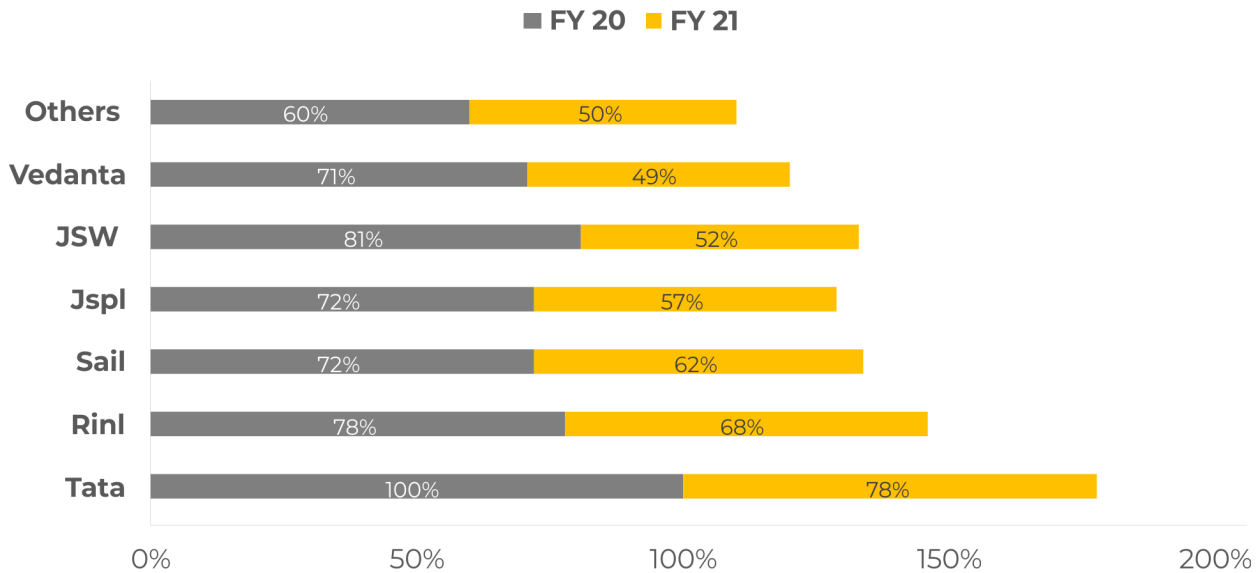
Source: SteelMint, JPC

## India: Rebar Production, Export, Import, and Consumption

FY	Production	Export	Import	Net Exports	Consumption
FY16	26.50	0.18	0.24	(0.06)	26.56
FY18	26.50	0.92	0.16	0.76	25.74
FY19	28.82	0.33	0.26	0.07	28.75
FY20	34.56	0.44	0.24	0.20	34.36
FY21	30.37	1.00	0.11	0.89	29.48

Quantity in mn t/pa.  
Source: SteelMint, JPC

## India Rebar Production and Capacity Utilisation:



Source: SteelMint

Rebar Production and Capacity Utilisation		FY 19-20			FY 20-21		
		Capacity	Production	Utilisation	Capacity	Production	Utilisation
JSW	Vijaynagar,Dolvi	3.7	3	81%	3.7	1.93	52%
Sail	Bhilai,Burnpur,durgapur	2	1.43	72%	2.5	1.55	62%
Tata	Jamshedpur	2.5	2.5	100%	2.5	1.96	78%
Jspl	Angul,patratu	2.4	1.73	72%	2.4	1.37	57%
Rini	Visakhapatnam	1.8	1.4	78%	1.8	1.23	68%
ESL (Vedanta)	Saraikela (bokaro)	0.7	0.5	71%	0.7	0.34	49%
Others		40	24	60%	44.4	22	50%
<b>Average Capacity Utilizations</b>		<b>53.1</b>	<b>34.6</b>	<b>65%</b>	<b>58.0</b>	<b>30.4</b>	<b>52%</b>

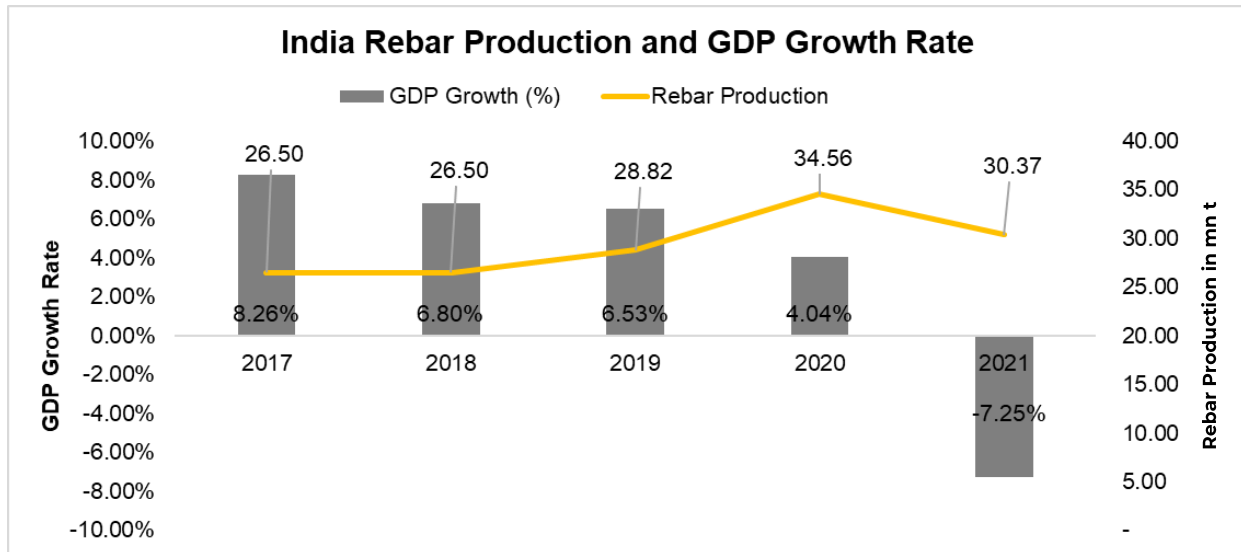
Capacity in mn t pa, JSW ,excluding the Monnet Raigarh capacity  
Source: SteelMint, JPC



## Rebar Demand:

The use of Rebar has become widespread in construction as reinforcement bars endow great strength to construction. The major demand push for the Rebar industry in India comes from increasing awareness amongst real estate developers about the government's quality control norms and the need for Rebar to ensure longevity of construction.

The volume of Rebar consumed by a country reflects its level of infrastructure development, which is a direct indicator of GDP growth. Rapid growth in GDP is usually accompanied by an increase in per capita steel consumption.



Source: SteelMint

The Indian Rebar industry has entered into a sustained phase of demand growth and steel companies are expanding capacities in anticipation of a price supportive market and expansion in the infrastructure sector.

## Rebar Grades:

Rebars should be defined to Indian standards as IS: 1786/2008 specifications. There are 9 grades of TMT bars and the commonly used grades are Fe-415, Fe-415D, Fe-500, Fe-500D, Fe-550, Fe-550D. Fe 600, Fe 650, Fe700, D stands for 'ductility'; i. e. Fe-550D Rebar is more ductile than Fe-500.

## Rebar Quality Table

Rebar Parameters:	Grade Fe 415	Grade Fe-500	Grade Fe-500 D	Grade Fe-550 D
<b>Chemical:</b>				
Carbon	0.30 max	0.30 max	0.25 max	0.25 max
Sulphur	0.060 max	0.055 max	0.040 max	0.040 max
Phosphorous	0.060 max	0.055 max	0.040 max	0.040 max
Sulphur and Phosphorous Max	0.110 max	0.105 max	0.075 max	0.075 max
Carbon Equivalent	N/A	N/A	0.50 max	0.50 max
Nitrogen Content	N/A	0.012 max	0.012 max	0.012 max
<b>Mechanical:</b>				
Yield Strength m pa	415 min	500 min	500 min	550 min
Tensile Strength m pa	485 min	545 min	565 min	585 min
TS/YS Ratio	>1.10	> 1.08	>1.1	>1.08
Elongation of Gauge Length %	14.5 min	12 min	16 min	14.5 min
Total Elongation at Max force %	N/A	N/A	5 min	5 min
Bend Test	3D & 4D	4D & 5D	3D & 4D	4D & 5D
Re Bend Test	5D & 7D	5D & 7D	4D & 6D	6D & 7D

## Rebar size:

In India, there are different sizes of Rebar available in the market from 8mm, 10mm, 12mm, 16mm, 20mm, 25mm, 28mm and even 32mm. These sizes are supplied in straight rods of 40 feet or 11-12 metres in length and if it is U-bend, the length may vary from 18-20 feet or 5.5-6 metres.

## Rebar Weight:

TMT bars' weights are in kilogram or quintal or tonne. 1 Quintal = 100 kg/1 tonne = 1,000 kg and the weights of the TMT bundle, as per IS 1786:2008, are as follows:

Size	Weight per Bundle	Rods per Bundle
8 mm 1 Bundle	47.41 kg	10
10 mm 1 Bundle	51.85 kg	7
12 mm 1 Bundle	53.33 kg	5
16 mm 1 Bundle	56.89 kg	3
20 mm 1 Bundle	59.26 kg	2
25 mm 1 Bundle	46.30 kg	1
32 mm 1 Bundle	75.85 kg	1

Weight Tolerance: As per IS: 1786-2008:

8mm to 10mm	± 7%
12mm to 16mm	± 5%
20mm	± 3%

For example, an 8mm bundle may vary from 44.09 to 50.73 kg and still be safe.

## Rebar Test Report:

Rebar manufacturing mills provide the test certified (TC) report as per BIS quality norms only if supply for projects is concerned. For each shipment, the concerned mill's report certifies that the reinforcing bar conforms to the project specifications and reveals the chemical composition of the bar and its mechanical properties. If supplied in the retail segment, the test certified report is available on request and, at times, some manufacturers charge a premium for the same, the cost of the premium varying between INR 1,500-2,500/t.

## Rebar Distribution:

In India, Rebar is produced in different regions and, as per demand, can easily be made available to consumers by mode of direct company sales, stockyards, distributors, or by a retail dealership network.

### Marketing Distribution Channel

BF Route Producers	Company's Brand	Company's Stockyards in No's	Company's Stockists/ Distributors in No's	Company's Dealers in No's
SAIL	SAIL SeQR TMT	NA	35	1,741
RINL	Vizag TMT	19	NA	394
Tata Steel	Tiscon TMT	18	246	3,850
JSPL	Jindal Panther TMT	10	83	2,523
ESL (Vedanta)	V-XEGA TMT			
JSW Steel	JSW Neosteel TMT	25	92	343

Source: Company's web presence

## Rebar Market Price Assessment:

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SteelMint assessment shows that India's Rebar production in 2020-21 stood at 30 mn t, out of which the integrated steelmakers produced 8 mn t, while the secondary steel producers had a share of over 73% of total production at 22 mn t. Production fell by around 4 mn t compared with FY'20 due mainly to the impact of COVID-19 in Q1 of the fiscal.

High transport and logistics costs in India have resulted in the development of large Rebar-producing clusters on a pan-India basis such as in states like Maharashtra, different parts of South India, Delhi NCR and Gujarat in western India. It has been observed that, owing to steep logistics costs, producers are clustered around these consumption states and import billet from other states to produce finish steel.

However, the introduction of hot-charging technology around 2015 brought about a paradigm shift in Rebar production in the country. It was observed that plants that had steady steel billet production levels opted for forward integration, while plants secure in terms of raw materials opted for backward integration. This has contributed to growth in Rebar production in mineral-rich states like Chhattisgarh, Odisha, West Bengal, Karnataka and Telangana.

Towards the beginning of 2017, small mills started supplying Rebar for government projects. The Union Ministry of Road Transport and Highways (MoRTH) had earlier allowed secondary steel producers to supply Rebar for roads and highways provided they were rolled from billets produced "directly from iron ore and not from shredded scrap and sponge iron as basic feedstock". Likewise, the Central Public Works Department (CPWD) mandated in Dec'19 that the EAF capacity of producers should be at least 100 tonnes (MT) or more, for them to be eligible to participate in government procurement processes.

In January 2021, the Union Ministry of Steel (MoS) issued a clarification underlining that a) routes of steel production have no bearing on the quality of steel produced; b) use of scrap/DRI instead of iron ore does in no way affect quality provided the products manufactured conform to BIS standards that have been made mandatory for most steel products through successive Steel Quality Control Orders issued by MoS; c) scrap, DRI usage should be encouraged as an eco-friendly alternative to sintering and coking coal integral to the BF-BOF route; d) MoS abolished the distinction between primary and secondary steel producers through an order issued in August 2016; and e) size of furnace doesn't determine the quality of steel products.

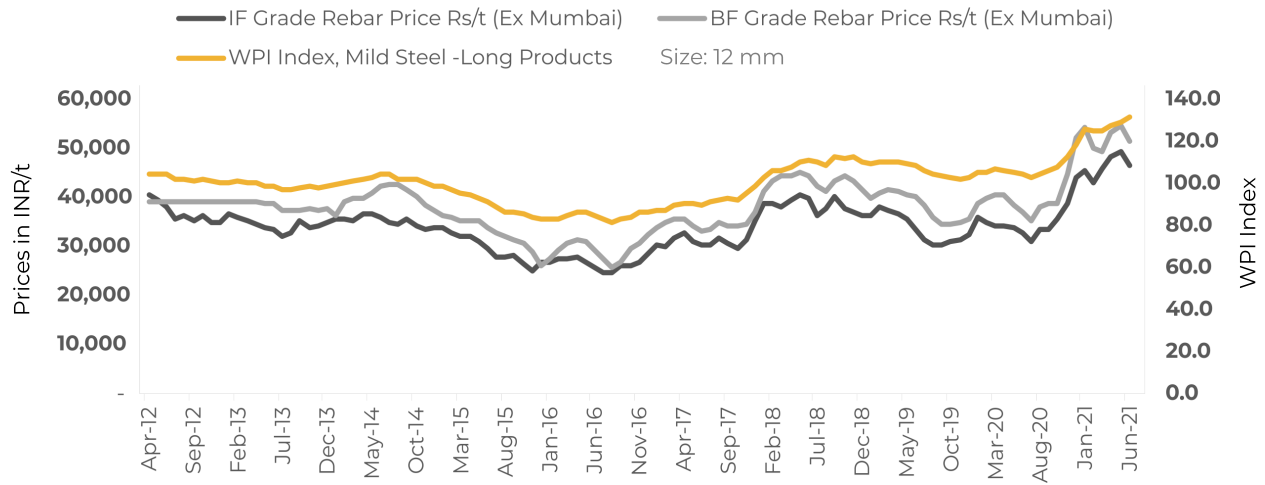
SteelMint's Rebar assessment captures prices on a pan-India basis, as per the quality control norms required by the government authorities for the commercially traded grades. SteelMint segregates Rebar assessments under three heads, which are as under:

a) BF Rebar produced by primary producers with IS 1786 500-D or 550-D. Price assessment is in the distribution channel where primary producers sell to distributors/dealers and offer at net discounts.

b) IF IS 1786 Fe-500D Rebar, comprising branded (medium and large producers) companies that follow quality parameters for supply to projects, have a countrywide distributor network and, at times, a franchise model. However, for supply in local markets the chemical composition is commercial grade. Price assessment is in the distribution channel where small and medium producers sell to distributors/dealers at net discounts.

c) IF IS 1786 Fe-500 Rebar, comprising plants that sell majorly from direct channels with net discounts and, follow the chemical composition for commercial grade. Price assessment is in the distribution channel where small and medium producers sell to traders/dealers at net discounts.

### Rebar Price (Ex Mumbai) and WPI Index, Mild Steel - Long Products



Source: SteelMint

### SteelMint rebar price assessment table

State	City	Delivery Terms	Size and Grade	Grade	Publication Day and Time
<b>Maharashtra</b>	Mumbai	Ex-Works	12-25MM	IF Route Fe-500	M to S at 13:30 IST
		Ex-Yard	12-25MM	BF Route Fe- 500D	Every Friday at 17:00 IST
	Jalna	Ex-Works	12-25MM	IF Route Fe-500	M to S at 13:30 IST
<b>Gujarat</b>	Ahmedabad	Ex-Yard	12-25MM	BF Route Fe- 500D	Every Friday at 17:00 IST
		Ex-Works	12-25MM	IF Route Fe-500	M to S at 13:30 IST
<b>Karnataka</b>	Bangalore	Ex-Works	12-25MM	IF Route Fe-500	M to S at 13:30 IST
<b>Tamil Nadu</b>	Chennai	Ex-Yard	12-25MM	BF Route Fe-500D	Every Friday at 17:00 IST
		Ex-Works	12-25MM	IF Route Fe-500	M to S at 13:30 IST
<b>Delhi</b>	Delhi	Ex-Yard	12-25MM	BF Route Fe-500D	Every Friday at 17:00 IST
		Ex-Works	12-25MM	IF Route Fe-500	M to S at 13:30 IST
<b>West Bengal</b>	Durgapur	EX-Yard	12-25MM	BF Route Fe-500D	Every Friday at 17:00 IST
		Ex-Works	12-25MM	IF Route Fe-500D	M to S at 13:30 IST
		Ex-Works	12-25MM	IF Route Fe-500	M to S at 13:30 IST
<b>Goa</b>	Goa	Ex-Works	12-25MM	IF Route Fe-500	M to S at 13:30 IST
<b>Telangana</b>	Hyderabad	Ex-Works	12-25MM	IF Route Fe-500	M to S at 13:30 IST
<b>Uttar Pradesh</b>	Muzaffarna-gar	Ex-Works	12-25MM	IF Route Fe-500	M to S at 13:30 IST
<b>Chhattisgarh</b>	Raipur	Ex-Works	12-25MM	IF Route Fe-500D	M to S at 13:30 IST
		Ex-Works	12-25MM	IF Route Fe-500	M to S at 13:30 IST
<b>Odisha</b>	Rourkela	Ex-Works	12-25MM	IF Route Fe-500D	M to S at 13:30 IST
		Ex-Works	12-25MM	IF Route Fe-500	M to S at 13:30 IST

Payment Terms: 0-5 Days | Delivery: Immediate | Quantity Minimum 50 MT actual weight

## Wire Rod Grades

The wire rod defined to IS 7887:1992 and carbon contains defined the wire rod quality based on the percentage of carbon in wire rod.

Wire Rod Types/Grade			Chemical composition Range in %					Mechanical properties	
Type of wire rod	Grade	size in mm	Carbon (max)	Manganese (Mn) (Max)	Sulfur (S) (Max)	Phosphorus (P) (Max)	Silicon (Si) (Max)	UTS N/ MM2	%RA (Min) (Reduction in Area %)
Low carbon wire rod (Mild steel wire rod)	SAE 1008	5.5 mm	0.10	0.30 to 0.50	0.03	0.025	0.15	420 max	50% Min
Low carbon wire rod (Mild steel wire rod)	SWRY 14 LC (Low Carbon) Grade No 3	5.5 mm	0.08 to 0.14	0.40 to 0.50	0.035 to 0.050	0.04 to 0.050	0.10 to 0.20	410 to 450	84 %

As per SWRY 14 LC- Coil wt: 1100kg (Bundle of two Coils) Coil Length: 4864 mtrs. (Bundle of two coils)

## Wire Rod applications:

The low medium and high carbon wire rods are used as per applications.

Type of wire rod	End Use Applications
Low carbon wire rod (Mild steel wire rod)	Binding wire, G.I. wire, Barbed wire for fencing, Armoured sealed wire for heavy electrical cables, Nut bolts, Nails, screws, Alpine. Wire ropes. Wire mesh fasteners etc.
Medium carbon wire rod	High tensile fasteners for automobile and constructions, wire for elevators, cable and cranes, nut and bolt, screw, rivet, axle.
High carbon wire rod	wire rope, fine wire, grade II, III, spring, Tyre bead, card pin, card cloth wire, shutter wire, spring applications in heavy machines, hydraulic machines, automobiles applications, railway sleepers, umbrella ribs, cycle spoke, conveyor wire.

## Wire-Rod Price Ex Durgapur and WPI Index for MS Wire Rod, Long Products



Source: SteelMint

## SteelMint wire rod price assessment table

State	City	Grade	Size	Publication Schedule
West Bengal	Durgapur*	SWRY 14 LC (Low Carbon) Grade No 3	20 Gauge, Binding Wire	M to S at 13:30 IST
			12 Gauge, HB Wire	M to S at 13:30 IST
			5.5mm, Wire Rod	M to S at 13:30 IST
			12 Gauge, GI Wire	M to S at 13:30 IST
Chhattisgarh	Raipur*		12*12 Gauge, Barbed Wire	M to S at 13:30 IST
			12*12 Gauge, Barbed Wire	M to S at 13:30 IST
			20 Gauge, Binding Wire	M to S at 13:30 IST
			12 Gauge, GI Wire	M to S at 13:30 IST
Tamil Nadu	Chennai,	SAE 1008	5.5-6.0mm, Wire Rod, BF route	Saturday at 16:00 IST
			5.5 mm, Wire Rod	M to S at 13:30 IST
Jharkhand	Jharkhand	SAE 1008	5.5-6.0mm, Wire Rod, BF route	Saturday at 16:00 IST

\*IF/EAF route | Delivery terms: Exw | Payment Terms: 0-5 Days | Delivery: Immediate | Quantity Minimum 50 t actual weight

### Structural steel IS 2062:2011: -

Hot Rolled Medium and High Tensile Structure steel according to IS 2062: 2011 are designated as per the following:

Structure Steel / Grade	Chemical composition Range in %						Mechanical properties		
	Carbon (max)	Manganese (Mn) (Max)	Sulfur (S) (Max)	Phosphorus (P) (Max)	Silicon (Si) (Max)	CE	Yield Strength (Mpa)	UTS N/ MM2	EL ( Min)
E-250.Gr-A ,IS2062/2011	0.23	1.5	0.045	0.045	0.4	0.42	410	480	23

## SteelMint structural steel price assessment table

State	City	Size	Publication Schedule
West Bengal	Durgapur	100x100 Angle, 110x110 Angle, 130x130 Angle, 150x150 Angle 200x200 Angle, 40x40 Angle, 75x75 Angle, 25x25 Angle 65x65 Angle, 90x90 Angle	M to S at 13:30 IST
		100x50 Channel, 150x75 Channel 200x75 Channel, 250x80 Channel, 300x90 Channel, 75x40 Channel	M to S at 13:30 IST
		125x70 I-Beam, 200x100 I-Beam 300x140 I-Beam, 400x140 I-Beam	M to S at 13:30 IST
Chhattisgarh	Raipur	130x130 Angle, 75x80 Angle, 50x50 Angle, 25x30 Angle 200x200 Angle, 110x110 Angle, 65x60 Angle, 40x50 Angle, 150x150 Angle, 100x100 Angle, 35x50 Angle	M to S at 13:30 IST
		300x90 Channel, 150x75 Channel, 100x50 Channel, 250x82 Channel 75x40 Channel, 400x100 Channel, 200x75 Channel	M to S at 13:30 IST
		600x210 I-Beam, 300x140 I-Beam, 500x180 I-Beam, 200x100 I-Beam 100x116 H-Beam, 400x140 I-Beam, 125x70 I-Beam	M to S at 13:30 IST
Telangana	Hyderabad	110x110 Angle, 65x65 Angle, 100x100 Angle, 40x40 Angle 75x75 Angle	M to S at 13:30 IST
		100x50 Channel, 150x75 Channel, 75x40 Channel, 125x65 Channel	M to S at 13:30 IST
		250x125 I-Beam, 125x70 I-Beam	M to S at 13:30 IST
Uttar Pradesh	Ghaziabad	90x90 Angle, 110x110 Angle 130x130 Angle, 150x150 Angle, 100x100 Angle	M to S at 13:30 IST
		250x80 Channel, 400x100 Channel 200x75 Channel, 300x90 Channel	M to S at 13:30 IST
		300x140 I-Beam, 203x152 W-Beam, 152x152 H-Beam, 500x180 I-Beam 200x100 I-Beam, 200x200 H-Beam, 150x150 H-Beam, 400x140 I-Beam 254x146 U-Beam, 160x160 H-Beam	M to S at 13:30 IST
Gujarat	Ahmedabad	110x110 Angle, 75x75 Angle, 100x100 Angle, 65x65 Angle 90x90 Angle, 40x40 Angle	M to S at 13:30 IST
		150x75 Channel, 200x75 Channel 100x50 Channel, 175x40 Channel, 75x40 Channel	M to S at 13:30 IST
		200x100 I-Beam, 150x75 I-Beam	M to S at 13:30 IST
Maharashtra	Mumbai	25x25 Angle, 75x75 Angle, 40x40 Angle	M to S at 10:30 IST
		100x50 Channel, 200x75 Channel, 75x40 Channel, 150x75 Channel	M to S at 10:30 IST
		200x100 I-Beam, 125x70 I-Beam	M to S at 10:30 IST

Delivery terms: Exw | Payment Terms: 0-5 Days | Delivery: Immediate | Quantity Minimum 50 MT actual weight | Grade E-250.Gr-A, IS2062/2011



## Price Development Mechanism

Stage	Details
Data Collection	Data is collected from the integrated mills, small and medium mills with minimum capacity above 0.06 million tonnes per annum for Fe-500 and 0.12 million tonnes per annum for Fe-550D
	Based on the publishing date and time, data is collected from the market participants. The data is primarily collected through telephone calls, emails and messenger platforms such as WhatsApp, etc.
	As per our Data Partner (DP) policy, a broad mix of DPs from buyers, sellers, traders and manufacturers, etc. are approached so that the data collated gives us the correct picture of the market.
	Another important sources of price data are the results of auctions and tenders being hosted by PSUs or private entities.
	Every effort is made to ensure that deals of only reputed and trustworthy producers and trading firms are included in the price development mechanism.
	The collected data is subsequently arranged as per established hierarchies.
	Highest importance in the price calculation process is assigned to confirmed deals where either a buyer or seller has provided details of the transaction
Data Arrangement	Confirmed offers and bids as well are also considered valuable for the pricing process.
	In periods when market activity is sluggish, analysts will poll market participants for indicative or tradable price levels for that day
	Deals or prices obtained closer to the publishing date and time would be given preference over older deal(s).
Normalisation	Similarly deals with significantly large volumes or deals of major market participant as against smaller players would be given preference and the hierarchy would be established.
	The normalisation would be carried out for four different categories of data i.e., transactions, indicative prices, bids and offers.
	SteelMint then normalises the four groups of data based on the sample type, chemical specifications, delivery dates and delivery terms, freight, etc.
	If the normalised price of one submission in a group significantly differs compared with the remaining post-normalisation group submissions, SteelMint will reconfirm the details of the sample.
Data Outlier Elimination	If the submitted data is incomplete, opaque and/or there is disagreement between the parties to the transaction or the normalisation result shows significant bias compared with the market level, the submission sample will be removed.
	SteelMint adopts 'standard deviation' approach to eliminate the outliers of data sets seen in price collection. The normalised values are collated and the mean value is determined.
Price finalisation	The values lying outside the Mean + Variance (upper limit) and Mean - Variance (lower limit) are discarded for the purpose of price discovery
	SteelMint uses volume weighted approach to arrive at final price index where the volume-based deals are available in the data collated and that too in adequate number.
	Alternatively, a simple average is calculated by giving highest weightage to confirmed transactions in addition to offers, bids and indicative prices.
	Expert judgment would be exercised by our analysts in each specific scenario.

## **Miscellaneous Aspects - Common to all assessments**

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### **Rationale publication**

A rationale for the assessment which will include a summary of the type and number of data points considered for price calculation and reasons for exclusion of deals, if any, are published on the day of publication of prices to provide transparency to the assessment process.

### **Record keeping**

Records of price sheets used in assessment, calculation, rationale and notes taken by reporters during the data collection and discussion process with contacts are stored securely in physical or electronic forms for a reasonable period of time.

### **Correction of assessments**

Steelmint will publish corrections of assessments if an error has resulted due to faulty entry of data or an unintentional omission of data point in the price calculation process. However, prices will not be corrected or updated in any manner if new deals or bids/offers become available after the weekly timestamp.

### **Methodology review**

The basic purpose of any pricing process is to accurately reflect market fundamentals and as such the methodology is open to review as market conditions and modes of trading and pricing contracts change. Noticeable changes in chemical specifications and price components of openly-traded fines and lump cargoes will also trigger a review in Steelmint's methodology. Once editors and the management decide to review the methodology, sufficient time will be provided to external stakeholders to comment on the proposed methodology changes via email or other appropriate communication tools. Any final change to the methodology will only be made after completing an external consultation process.

Similarly, any decision to add or cease an assessment will also be taken after due consultation with the external stakeholders.

## Becoming a Data Submitter with SteelMint

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SteelMint continually seeks to increase the number of market sources willing to take part in the price discovery process. The main condition is that contributors should be active participants in the market and have an in depth knowledge about market dynamics regarding that specific commodity.

SteelMint Data Partner Policy provides guidelines defining the high level of data quality and integrity that we expect from contributing organisation providing pricing data. Market participants that wish to provide pricing data and be part of the price discovery process should first read the Data Partner Policy. All data sources are subject to review before their data submitted is fully taken into account in the pricing process. If you want to become a data submitter / contributor to SteelMint pricing, or have questions or comments about the methodology and price specifications, please contact SteelMint's Audit and Compliance Officer at [info@steelmint.com](mailto:info@steelmint.com)

## Disclaimer

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