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INTRODUCTION

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PRODUCTION DISCREPANCY IN A MINERAL BENEFICIATION PLANT

O P Gupta
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INTRODUCTION

The main objective of mineral beneficiation is to get an upgraded product from the mined mineral / ore (Run - of - Mine) which can be subsequently processed for extraction of metal and in which the valuable mineral is separated from the waste mineral called gangue.

During the beneficiation, it has been observed that there exists a differential gap between the theoretical and the actual yield. This paper discusses various causes that are responsible for causing this discrepancy, based on the experiences in beneficiation of minerals like copper, zinc, lead and fluorspar. These causes are briefly described in following paragraphs.

In operations of mineral/ore beneficiation plants, as said earlier, there always exists a discrepancy between the physical and theoretical production. The physical production is the actual dry weight of the beneficiated product/concentrate as produced from the plant and weight taken from the weigh bridge installed near the plant after deducting moisture content assayed by the laboratory, while the theoretical production figure is arrived by calculation as per the specified emperical formula based on the metal content in the feed, concentrate and tailings (assay figures obtained from the laboratory). This discrepancy varies from 2 to 7 % in mineral resources of Indian ores such as of Lead, Zinc and Zambian ores of Copper and also Fluorspar ores in Kenya.

CAUSES RESPONSIBLE FOR THE DISCREPANCY

The factors affecting the discrepancy can be enumerated as follow:-

1. Error in sampling various streams, such as feed, concentrate and tailings.
2. Error in assaying the samples of above streams.
3. Error in weighing the feed and the concentrate.
4. Loss of metal –
   a. When concentrate (beneficiated product) is stored in the open.
   b. While loading the concentrate into trucks for despatch.
   c. Losses down the drains.

Each point is discussed below in detail:

1. ERROR IN SAMPLING

The standard and traditional method of sample collection from pulp streams in the plant is by use of auto-sample cutters, but in some plants some streams are sampled by auto-sample cutters while other streams are sampled manually as many a times the auto-samplers do not work. The accuracy of manually collected samples is questionable.

Also, as the feed sample is collected from the stream of cyclone overflow in a closed circuit grinding system and feed to this cyclone classifier is from the mill discharge some to which, sometimes, other material such as from scavenger circuit or concentrate spillage accumulated on concentrate pumps floor, the cyclone overflow sample may not represent the actual mill feed sample and hence, they is a variance between the assays of mill feed sample collected from the bell conveyer feeding the mill and the sample collected from the cyclone overflow. It had been noticed that there is no definite trend of this variance. Ball mill feed is sometimes higher and lower than cyclone overflow.

For analysing the moisture content in the mill feed, the sample collected manually from the mill feed conveyer can be erroneous. This discrepancy in moisture determination may affect over all feed tonnage.

Similarly, the method used for sampling the dispatched concentrate is not accurate many times. In many plants, a handful concentrate is scratched from each bucket while loading the truck by a wheel loader. While the standard practice should be by using screw auger in the loaded concentrate truck.

Therefore, depending upon the sampling practices being followed to sample the various streams/products in the plant, there could be an error in sampling these streams/products. However, it is not possible to quantify the same. Specific measures can be suggested to minimize this error after studying the prevailing sampling practices in a particular plant.

2. ERROR IN ASSAYING THE SAMPLES

In an ore beneficiation plant, the methods used for chemically assaying various stream/products such as feed, concentrate and tailings are standard ones, but the possibility or involving accidental/unnoticed and personal error cannot be denied. Sometimes the error may be positive and sometimes it may be negative and it is not possible to quantify the net effect/error but the error can be there on this account.

3. ERROR IN WEIGHING THE BENEFICIATED PRODUCT/CONCENTRATE

Normally the weightometers (Mechanical or electronic type) are installed over the concentrate product conveyer after filtration. The filtration removes water from the thickened concentrate slurry and the filtered concentrate contents only 7-10% moisture depending upon the type of filter machine and operating parameters used in the plant. Further, the loaded

concentrate trucks, while despatching, pass through the weigh bridge where the weightment figures are recorded.

During the operations, it have been noticed that due to lack of proper and timely maintenance, these weightometers or weighing scales installed on mill feed conveyer or the product conveyer are not calibrated regularly after every fort night, due to which the weightment figures indicated by these weightometers / weighing scales or the weighbridge scale could be erroneous.

4. LOSS OF CONCENTRATE / BENEFICIATED PRODUCT

One of the main causes of the production discrepancy is loss of metal in the concentrate in following situations, which remain un-accounted:-

a. When concentrate is stored in the open

In several plants, it has been observed that the concentrate is either stored in open or not under properly covered area and under these conditions, some concentrate is definitely lost by wind especially during the dry season and when the concentrate is comparatively dry. However, it is not possible to exactly estimate and quantify this loss.

b. While loading the concentrate into trucks

During the operating condition when the concentrate loaded from the stock pile in to the road trucks by wheel loader, it had been observed that some quantity of concentrate stick to the wheels of the loader and trucks and are carried away as loss.

However, this loss could be prevented if it is ensured that the wheels of loader and truck are washed by water hose at the loading area each time before they leave the place and the concentrate slurry so generated is pumped back to concentrate thickener.

c. While transporting the loaded road trucks from concentrator plant to the smelter plant site

It has been noticed that some concentrate is definitely lost by wind and flys away into atmosphere especially during the dry reason and when the concentrate is comparative the dry and when the concentrate is transported in road trucks from the concentrator plant to the smelter plant site, unless these trucks are covered properly on top by tarpaulin sheets.

Also, when the concentrate is too moist, the seepage loss from truck sides on to the road takes place during the truck movements. However, this could be avoided by ensuring proper sealing of truck-inside by using plastic sheets or by other methods.

5. LOSSES DOWN THE DRAIN

This is another main caused production discrepancy and unaccounted metal / concentrate loss from the plant area.

Although, precaution is taken during plant operations to ensure that the spillage occurring in the plant do not escape to the drain outside the plant and this leads to net metal loss going to the outside area or to some nullah / river / pond, but still it had been noticed that some concentrate is definitely lost by way of spillage occurring is the plant due to faulty equipment operations or pipes leakages or during electric power break down and overflow of sumps. This spillage loss in the drain can be a mixture of:-

a. Feed slurry spillage- in grinding mills / feed pumps area.
b. Flotation spillage – from rougher, scavenger & cleaner cells and at the area of pumps floor at the flotation basement.
c. Spillage from thickener and filtration area.
d. Spillage near concentrate loading area.

However, the above losses could be reduced by providing suitable catchment tanks at respective spillage areas and recycling of the same to the relevant process streams inside the plant. But even then, a part of this spillage overflow reports to the drain particularly when the operator in-charge is not vigilant.

CONCLUSION

There exists a discrepancy between the physical / actual and theoretically calculated concentrate production figures, in a concentrator / mineral beneficiation plant, caused by one or all factors as discussed above and at the same time, it is not possible to quantify the error on each account. This discrepancy, it had been observed during past experiences, varies from 2 to 7% in the mineral resources as specified in the "introduction" part of this paper. Also, it has been seen that inspite of taking all possible measures, the discrepancy still occurs.

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ArcelorMittal abandons dormant Indian project

ArcelorMittal, the world's top steelmaker, said it would scrap a planned steel plant in India due to delays in acquiring land and an iron ore mine, obstacles that have also caused South Korea's POSCO to abandon plans. The decision to scrap the planned 12 million-tonnes-a-year (MTA) plant in the eastern state of Odisha, comes a day after the world's fifth biggest steelmaker, POSCO, said it was ditching a 6 MTA plant in the southern Karnataka state because of delays in receiving iron ore mining rights and opposition from residents which had held back land acquisition. The failed projects will be a blow to India's federal government, which recently relaxed foreign investment rules to draw in funds needed to turn around slowing economic growth and support a weak rupee. ArcelorMittal India and China Chief Executive Vijay Bhatnagar said the company's other two projects in mineral-rich states of Jharkhand and Karnataka were making "steady progress" and it would continue to pursue them. The Jharkhand plant is expected to have an annual capacity of 12 million tonnes, while the one in Karnataka is expected to have capacity of 6 million tonnes. "The delays relating to land acquisition and allocation of captive iron ore blocks means (the Odisha) project is no longer viable," Bhatnagar said. POSCO said a few days back that it would focus on its main steel project for a 12 MTA plant in Odisha.

An Odisha government official said ArcelorMittal had not deposited the required 10 percent value of the 8,000 acres of land it wanted. "Despite repeated reminders from the state authorities, the company did not deposit the required charges," said Vishal Kumar Dev, chairman of the Industrial Infrastructure Development Corp of Odisha, the agency that facilitates industrial investment. "The project was dormant for the past two years," he added. ArcelorMittal spokesman Ritesh Sinha declined to comment on the deposit but Bhatnagar said in a statement the company had invested "considerable resources into the project" over the past seven years. Industry executives have estimated it costs about $1 billion to set up a plant in India of 1 million tonnes. "I don't think many people had factored in them continuing with the (Odisha) project," said Neil Sampat, analyst at Nomura in London. Although ArcelorMittal is pulling out of Odisha, its rival POSCO is expected to get an iron ore exploration licence for its planned $12 billion plant in the state, two government officials told Reuters recently. Odisha lies in the heart of India's mining belt and holds a third of the country's iron ore reserves, a quarter of its coal, half its bauxite and more than 90 percent of its nickel and chromite. Since January 2008, the state has attracted investment proposals worth $210 billion. Jindal Steel & Power Ltd, Tata Steel Ltd and Vedanta Resources Plc are some of the top companies with operations there.

Source: Reuters

worldsteel update on country wise crude steel production in H1 of 2013

Rank	Country	Jun'12	Jun'13	YoY	H1'12	H1'13	YoY
1	China	60,213	64,660	7.4%	356,219	389,089	9.2%
2	Japan	9,198	9,281	0.9%	54,065	54,712	1.2%
3	US	7,239	7,221	-0.2%	46,193	43,233	-6.4%
4	India	6,375	6,450	1.2%	37,977	39,637	4.4%
5	Russia	5,743	5,698	-0.8%	35,746	34,704	-2.9%
6	South Korea	5,764	5,458	-5.3%	35,019	33,059	-5.6%
7	Germany	3,767	3,684	-2.2%	21,919	21,720	-0.9%
8	Turkey	2,941	2,957	0.5%	17,929	17,409	-2.9%
9	Ukraine	2,840	3,060	7.7%	17,146	17,043	-0.6%
10	Brazil	2,757	2,831	2.7%	17,352	16,974	-2.2%
11	Italy	2,438	2,188	-10.3%	14,875	12,683	-14.7%
12	Taiwan China	1,781	2,040	14.5%	10,616	11,571	9.0%
13	Mexico	1,413	1,450	2.6%	8,924	8,931	0.1%
14	France	1,340	1,378	2.8%	8,382	8,025	-4.3%
15	Spain	1,228	1,300	5.9%	7,547	7,548	0.0%
16	Iran	1,225	1,250	2.0%	7,390	7,326	-0.9%
17	Canada	1,011	1,000	-1.1%	6,927	6,301	-9.0%
18	UK	962	1,055	9.7%	4,735	5,723	20.9%
19	Poland	682	630	-7.6%	4,538	3,957	-12.8%
20	Austria	623	625	0.3%	3,822	3,945	3.2%
21	Belgium	569	540	-5.1%	3,783	3,506	-7.3%
22	Egypt	552	540	-2.2%	3,332	3,338	0.2%
23	South Africa	592	550	-7.1%	3,722	3,325	-10.7%
24	Netherlands	561	536	-4.5%	3,367	3,119	-7.4%
25	Saudi Arabia	448	453	1.1%	2,708	2,757	1.8%
26	Other EU27	223	441	97.8%	1,318	2,694	104.4%
27	Czech	430	433	0.7%	2,743	2,616	-4.6%
28	Argentina	451	417	-7.5%	2,732	2,404	-12.0%
29	Australia	403	371	-7.9%	2,406	2,362	-1.8%
30	Slovakia	371	341	-8.1%	2,308	2,337	1.3%
31	Sweden	385	370	-3.9%	2,487	2,276	-8.5%
32	Finland	285	255	-10.5%	2,062	1,737	-15.8%
33	Kazakhstan	317	265	-16.4%	1,953	1,531	-21.6%
34	Byelorussia	225	225	0.0%	1,337	1,347	0.7%
35	Venezuela	217	190	-12.4%	1,245	1,184	-4.9%

36	Qatar		191			1,148	
37	Luxembourg	190	136	-28.4%	1,124	995	-11.5%
38	Chile	144	90	-37.5%	866	633	-26.9%
39	Peru	81	95	17.3%	454	536	18.1%
40	Colombia	121	90	-25.6%	703	527	-25.0%
41	Greece	110	75	-31.8%	728	477	-34.5%
42	New Zealand	82	74	-9.8%	448	448	0.0%
43	Libya		64			390	
44	Hungary	131	84	-35.9%	826	388	-53.0%
45	Uzbekistan	72	70	-2.8%	378	382	1.1%
46	Bosnia Herzegovina	63	59	-6.3%	341	374	9.7%
47	Morocco	36	48	33.3%	303	314	3.6%
48	Slovenia	57	60	5.3%	347	308	-11.2%
49	Norway	65	50	-23.1%	357	308	-13.7%
50	TrinidadTobago	59	55	-6.8%	323	296	-8.4%
51	Algeria	43	50	16.3%	326	261	-19.9%
52	Bulgaria	54	40	-25.9%	349	246	-29.5%
53	Ecuador	43	40	-7.0%	232	238	2.6%
54	Guatemala	27	30	11.1%	158	167	5.7%
55	Cuba	24	25	4.2%	156	136	-12.8%
56	Serbia	60	49	-18.3%	325	125	-61.5%
57	Croatia	0	10		0	66	
58	El Salvador	8	9	12.5%	48	50	4.2%
59	Macedonia	22	10	-54.5%	128	43	-66.4%
60	Uruguay	11	7	-36.4%	60	34	-43.3%
61	Paraguay	4	1	-75.0%	18	6	-66.7%
62	Moldova	47	0	-100.0%	155	0	-100.0%
63	Romania	310		-100.0%	1,880		-100.0%

Source: Steel Guru

Government sets target of 300 MT capacity for steel production

Government set a target of trebling steel production capacity to 300 million tonne by 2025 amidst Prime Minister Dr. Manmohan Singh's assertion that boost to manufacturing sector is key to achieving 8-9 per cent growth. At a meeting of the High-Level Committee, Singh lamented that manufacturing sector has not performed to its potential and talked about the need to "remedy" this situation by removing the "bottlenecks that hinder our progress". The Steel Ministry would prepare a road map with time lines for the above in eight weeks. "A Master Plan for achieving 300 mtpa (million tonne per annum) of production would be prepared. As the private sector finds it difficult to assemble land and get clearances, the state would assume a pro-active role in partnership with state governments," a PMO statement said after the meeting attended by ministers of infrastructure ministries. The target of 300 million tonne will be a significant jump

from the level of 89 million tonne 2011-12 which is projected to go up to 120 million tonne this fiscal. The growth of the sector has been hampered by bottlenecks in the form of land acquisition, environmental clearances and local issues. Huge projects like POSCO in Odisha and Arcelor Mittal in Jharkhand are stuck because of such issues for over a decade. The PM-led panel has proposed, in the short-run, pro-active facilitation of pipeline projects on priority basis by the Steel Ministry and the new investment facilitation mechanism in the Cabinet Secretariat. It has also asked state-run Steel Authority of India (SAIL) to leverage existing infrastructure to expand capacity substantially and work out plans for capacity expansion and production of specialty steels by September-end, the statement said. There is also a proposal to create project-specific SPVs for identified sites which would assemble land, get necessary approvals and clearances and tie up water and raw materials. "The SPV would then be offered in a transparent manner for takeover by investors through a bidding process. The Steel Ministry would prepare a road map with time lines for these in eight weeks," it said. India is already the world's fourth largest steel making nation. The Working Group on Steel for 12th Plan has projected that the crude steel capacity in the county is likely to go up to 140 mtpa by 2016-17.

Source: The Economic Times

Ownership of minerals vests with owner of land – SC

India's Supreme Court has said that Ownership of minerals should be vested with the owner of the land and not with the government. A three judge bench headed by Justice R M Lodha said that there is no law in the country which declares that state is the owner of sub soil or mineral wealth. The bench said that "We are of the opinion that there is nothing in the law which declares that all mineral wealth sub soil rights vest in the State. On the other hand, the ownership of sub soil/mineral wealth should normally follow the ownership of the land, unless the owner of the land is deprived of the same by some valid process." Referring to various acts regulating extraction of underground natural resources, the bench said that the laws do not anywhere declare the proprietary right of the State. It rejected the argument that individual owners cannot claim any proprietary right on the sub-soil resources as Section 425 of the Mines and Minerals (Development and Regulation) Act, 1957, prohibits carrying out of any mining activity in this country except in accordance with a permit, license or mining lease. The bench said that "The said Act does not in any way purport to declare the proprietary rights of the state in the mineral wealth, nor does it contain any provision divesting any owner of a mine of his proprietary rights." It said that the assertion of government to collect duty or tax is in the realm of the sovereign authority, but not a proprietary right.

Source: Steel Guru

Chinese average daily crude steel output hits new record in late June

The China Iron and Steel Association has stated that in late June (June 21-30) this year the average aggregate daily crude steel output of its member enterprises in China totaled 1.7624 million tonne, up 0.97% or 17,000 tonne compared to mid-June (June 11-20) and constituting a new record high. In late June, the average aggregate daily crude steel production of all steelmakers in China was estimated at 2.1812 million tonne, indicating an increase of 0.78% or 17,000 tonne compared with mid-June and also constituting a record output volume. According to the previous figures from the CISA, in mid-June (June 11-20) this year the average aggregate daily crude steel output of its member steel producers in China totaled 1.7455 million tonne up 0.79% compared to early June (June 1-10). Meanwhile, the average aggregate daily crude steel production of all steelmakers in China in mid-June was estimated at 2.164 million tonne up by 0.37% compared with early June. As of June 30, total finished steel inventory of large and medium-sized steel enterprises in China reached 12.679 million tonne decreasing by 874,00 tonne compared to June 20.

Source: Steel Guru

Indian steel mills finally coming to terms with poor outlook in H2

At long last wisdom is descending on the hyperbolic psyche of Indian steel mills. Traditionally steel mills and the government in India have opted to take a pompous rather than pragmatic approach brandishing resurgent economy with boundless demand potential from infrastructure, auto, construction, manufacturing etc. Understandably it has been difficult for them to come to terms with swiftly vanishing demand and sluggish economy refusing to shed sluggish deeply saddled by tight credit and policy paralysis. Ironically it was steel producers caught by the dazzle of enormous demand potential promising to maintain double digit consumption joined the gung ho with deluge of green field projects. With the collapse of economy in 2008 the euphoria too vanished as demand plummeted and none of these projects appeared green entangled in land acquisition and mineral issues. A meager 3.3% consumption growth in FY13 against 6.9% in FY12 due to the slowdown is inching towards its worst ever performance in H2. World Steel Association has forecast steel demand in India to grow at 5.9% and 7% in 2013 and 2014, respectively appears remote in the backdrop of plummeting numbers of auto sales (8%), infrastructure growth (3.3%) and manufacturing growth.

Indian mills are unlikely to avoid the backlash despite nearly 12% erosion of rupee since May owing to increased cost of steel which cannot be transferred to buyers in squeamish condition. If the depreciation has given parity advantage to insulate domestic players from import competition the carpet has been pulled from underneath by the hike in cost of coking coal and iron ore being imported. Equally damning has been the hike in international scrap levels by USD 20-25 per tonne recently thereby squeezing the margins of furnace owners and re-rollers in India who cater to nearly half of construction steel demand. Rubbing salt to injury government's proposed move to increase the iron ore royalty to 15% from 10%, cannot be worse timed and if implemented, could lead to a further squeeze on margins. Steel companies are also unable to raise prices in the domestic market due monsoon season slowing construction activity. Since most of the brownfield projects which could ultimately see light of the day are financed by USD denominated loans every increase in USD value enhances the cost impact. As per one estimate the net out flow for SAIL goes up by INR 120-125 cr for every rupee fall. Some other majors have hastily scrapped borrowing plans, whereas others viz., Essar steel has been aggressively pursuing conversion of rupee loan into USD to stem outflow.

Certainly all is not lost with the involvement of PM addressing core issues afflicting the growth of steel production and demand. Although still harping on the capacity expansion by setting a target of 300 mt by 2025 rather than focusing on policy and financial initiatives to perk demand it certainly did enliven an otherwise gloomy atmosphere. The target of 300 million tonne will be a significant jump from the level of 89 million tonne 2011-12 which is projected to go up to 120 million tonne this fiscal and upto 140 million tonne by end of 2016-17. PM-led panel got down to brass stacks by pro-active facilitation of pipeline projects on priority basis by the Steel Ministry and the new investment facilitation mechanism in the Cabinet Secretariat. Since private investors find it onerous to get multiplicity of clearances a Special Purpose Vehicle (SPV) has been proposed. There is also a proposal to create project-specific SPVs for identified sites which would assemble land, get necessary approvals and clearances and tie up water and raw materials. The SPV would then be offered in a transparent manner for takeover by investors through a bidding process. However a more focused short term approach to kindle demand by fast tracking infrastructure projects and allowing hassle free FDI is desired. Loosening of the lending rate would provide instant boost to auto and housing demand. Since the WPI has been reasonably controlled RBI should follow liberal path. Some of the wonder proposals being mulled by the government in overdrive to score economic growth points before the election viz., 49% FDI in defense production, 100% FDI in retail and easing of the sourcing norms, 100% FDI in telecom would go long way in not only easing the CAD noose but also generating astounding demand which India is certainly capable of.

Source: Steel Guru

Ministry hopes that housing and rural sectors would boost steel demand in India

The Hindu reported that attributing poor steel consumption to subdued economic growth, the Steel Ministry said recently that buoyant housing and rural sectors are expected to spruce up demand in the coming days. Elaborating its plan to Parliamentary Committee on Coal and Steel, headed by Mr Kalyan Banerjee, the ministry said that the government's infrastructure push too would raise consumption. The source said that "At the meeting of the Parliamentary Committee on Coal and Steel, the focus was on promoting sales of steel. Steel Ministry said sales were not good last fiscal as the economic growth was subdued." The ministry, however, exuded confidence that sales of the metal would go up in the coming days with more consumption coming from housing and rural sectors. The source said, quoting the ministry's proposed initiatives to boost sales that "More demand would come from housing and rural sectors in the days ahead. We will also promote sales in these two areas. Besides, infrastructure is also going to give a huge push to demand." India's steel consumption grew 3.3%, lowest in 3 years, to 73.3 million tonne in 2012 to 13 on subdued demand due to slackening economy and high interest rates. It grew by 5.5% in 2011 to 12 and 9.9% in 2010 to 11.

Source: Steel Guru

The question of ultra-mega steel plants

After ultra-mega power projects, the government is now willing to consider ultra-mega steel plants (UMSP). Prime Minister Dr. Manmohan Singh finally approved the steel ministry's proposal for the Rs 45,000 crore investment plan at the meeting of the high-level committee on manufacturing held recently. The approval was, however, objected to by Planning Commission at a meeting and by the coal and mines ministries earlier. Their contention is with the glut in supply, there is no need to add production at this scale, especially as it will make a huge demand on scarce coal supply. Instead, steel can be imported at cheaper prices from China and the CIS countries, they claim. This is a minimalist position for the sector. The total production of steel in India is 79.5 million tonnes while the imported steel is less than 5 million tonnes. The demand for steel in India will grow at about 8 per cent, slightly above the annual GDP growth rate till 2017. So, if production rises at the current pace minus the UMSP, it will add about 30 million tonnes in the next two years leaving hardly any shortfall. So the objections would seem to be sustained. This picture changes if one scans the steel ministry data. The ministry is confident that the demand for steel would reach 280 million tonnes by 2025, or a compounded annual growth rate of 13.35 per cent. The point is whose calculations would you believe in? According to the Prime Minister it is the latter. There is a reason for it. The expanding infrastructure sector needs the investments to provide steel for them. The steel companies too are keen to tap into the demand and so UMSPs can be the much needed bulwark to provide the manufacturing ability that cuts back on the need for rising imports and generates the much-needed investments in sector with the promise of jobs.

Source: The Indian Express

Steel demand to remain subdued over next 2-3 months: ICICI Direct

The domestic steel sector has had a subdued start on account of the muted demand scenario for the current fiscal (FY14). During the first two months of the current fiscal year, steel demand has registered negative growth (down 0.8% YoY), thereby adding to the woes of the industry. The slowdown in infrastructure spending coupled with a delay in implementation of capex plans has led to domestic steel consumption growing by merely 3.3% in FY13, which is the lowest in the last three years. The prevailing high interest rate regime domestically has also been contributing to the subdued economic activity. "Going forward, due to the early onset of the monsoon season, we believe steel demand will stay subdued over the next two or three months," said ICICIdirect. Accordingly, on the back of a muted demand scenario, it has reduced the volume estimates for steel majors - Tata Steel, SAIL and JSW Steel. ICICIdirect has maintained 'Buy' rating on Tata Steel

with a revised target price of Rs 321 and maintained 'Hold' rating on SAIL and JSW Steel with a revised target prices of Rs 52 and Rs 640, respectively.

Source: Steel Guru

Indian domestic steelmakers H2 to be gloomier

ET reported that domestic steel producers seem to be bracing for a worse than expected market scenario in the second half of the year (July to December '13) with a weak economic growth that has led to muted demand from auto and consumer durables, adding to their woes. India Ratings & Research has revised its outlook on Indian steel producers to 'negative' from 'stable' for July to December 2013. In its latest report, the agency has attributed it to worsening liquidity profile of rated issuers. The agency's rated steel producers include SAIL, TATA Steel, Rashtriya Ispat Nigam, Uttam Galva Steels and Usha Martin. The agency said in its report that it expects domestic steel demand to remain muted in the second half of the calendar year. However, growth is likely to gain momentum in 2014 on the back of a recovery in economic growth and expected push in infrastructure investment by India. Incidentally, the World Steel Association has forecast steel demand in India to grow at 5.9% and 7% in 2013 and 2014, respectively. Real consumption of steel in India grew at a modest 3.3% in FY13 against 6.9% in FY12 due to the slowdown in the end-user industries. Despite a fall in raw materials prices, India Ratings said it expects steel producers' profit margins in FY14 to remain broadly similar to the FY13 levels. This is mainly due to persistent high cost of steel production and steel producers' limited ability to pass it on to consumers. The government's proposed move to raise iron ore royalty to 15% from 10%, if implemented, could lead to a further squeeze on margins. Steel companies are also unable to raise prices in the domestic market due to the global nature of the steel market, which is currently affected by oversupply and weak demand.

Source: Steel Guru

Stainless Steel Grade NITRONIC 50 (XM-19) (UNS S20910)

Introduction

Nitronic 50® stainless steel is an austenitic stainless steel with a blend of strength and corrosion resistance that is higher than stainless steel grades 316, 316/316L, 317, and 317/317L . The high strength, corrosion resistance, and low magnetic permeability of this alloy allows it to be used as a material for medical implants. The following sections will discuss in detail about stainless steel grade NITRONIC® 50 (XM-19).

Chemical Composition

The chemical composition of stainless steel grade NITRONIC® 50 (XM-19) is outlined in the following table.

Element	Content (%)
Chromium, Cr	20.5-23.5
Nickel, Ni	11.5-13.5
Manganese, Mn	04-Jun
Molybdenum, Mo	1.5-3
Silicon, Si	1 max
Nitrogen, N	0.20-0.40
Niobium, Nb	0.10-0.30
Vanadium, Va	0.10-0.30
Phosphorous, P	0.04 max
Carbon, C	0.06 max
Sulfur, S	0.010 max

Physical Properties

The physical properties of stainless steel grade NITRONIC® 50 (XM-19) are tabulated below.

Properties	Metric	Imperial
Density	7.88 g/cm3	0.285 lb/in3

Mechanical Properties

The following table shows mechanical properties of stainless steel grade NITRONIC® 50 (XM-19).

Properties	Metric	Imperial
Tensile strength	690 MPa	100 ksi
Yield strength	380 MPa	55 ksi
Elongation	35%	35%
Hardness	293	293

Other Designations

Other designations that are equivalent to stainless steel grade NITRONIC® 50 (XM-19) include the following:

AMS 5764	ASTM A240	ASTM A276	ASTM A312	ASTM A314
ASTM A403	ASTM A479	ASTM F1314	NACEMR0175/ISO 15156-3	NACE MR0103

Fabrication and Heat Treatment

Machinability: Stainless steel grade Nitronic® 50 has machinability characteristics that are similar to other austenitic stainless steels; however it requires slower speeds, more power, and higher rigidity due to its high work hardening rate. It is recommended that coated carbide tooling be used.

Forming: Stainless steel grade Nitronic® 50 can be formed using the same methods applied for other austenitic stainless steels. More power for forming and forging is needed for this alloy. Forging can be done at 1177-1204°C (2150-2200°F).

Welding: Welding of stainless steel grade Nitronic ®50 can be performed using traditional joining processes. Recommended filler metal should be Nitronic® 50W (AWS E/ER209). Caution should be taken while using autogenous, high power density joining processes such as EB or laser welding, due to low FN potential and severe outgassing possibility.

Heat Treatment: Final annealing process performed for several of the applications, is done at 1065°C (1950°F), which is followed by water quenching. In case this material is used in a strongly corrosive environment, annealing should be done at 1121°C (2050°F). This alloy cannot be hardened by heat treatment.

Applications

NITRONIC® 50 (XM-19) is widely used in the following sectors:

Textile	Marine	Nuclear	Medical	Fertilizer
Chemical	Petroleum	Petrochemical	Food processing	Pulp and Paper

Some of the key products made using NITRONIC® 50 (XM-19) include:

Tanks	Valves	Chains	Cables	Fittings
Saltwater pumps	Marine hardware	Marine pump shafts	Screens and wire cloths	Photographic equipment
Fasteners	Pressure vessels	Underwater robotic arms	Positive displacement pumps	

Source: Steel Guru

Nickel 233 Alloy (UNS N02233)

Introduction

Nickel 233 alloy is a commercially pure wrought nickel alloy that exhibits excellent corrosion resistance and high electrical and thermal conductivities. However, the alloy is subjected to intergranular embrittlement by sulfur compounds above 315°C.

The following section will discuss in detail about nickel 233 alloy.

Chemical Composition

The chemical composition nickel 233 alloy is outlined in the following table.

Element	Content (%)
Manganese, Mn	=0.3
Silicon, Si	=0.1
Iron. Fe	=0.1
Copper, Cu	=0.1
Carbon, C	=0.1
Magnesium, Mg	=0.01-0.1
Sulfur, S	=0.008
Titanium, Ti	=0.005
Nickel, Ni	Balance

Physical Properties

The following table shows the physical properties of nickel 233 alloy.

Properties	Metric	Imperial
Density	8.89 g/cm3	0.321 lb/in3
Melting point	1443°C	2630°F

Mechanical Properties

The mechanical properties of nickel 233 alloy are displayed in the following table.

Properties	Metric	Imperial
Tensile strength (annealed)	650-880 MPa	94275-127633 psi
Yield strength (annealed)	350-550 MPa	50763-79771 psi
Elongation at break (annealed prior to test)	8-25%	8-25%

Thermal Properties

The thermal properties of nickel 233 alloy are given in the following table.

Properties	Metric	Imperial
Thermal expansion co-efficient	10 °m/m°C	5.5 °in/in°F
Thermal conductivity	25 W/mK	173.3 BTU.in/hrft°.°F

Fabrication and Heat Treatment

Machinability: Nickel 233 alloy can be machined by conventional means. Rigid tools and aggressive feed rates result to good machining.

Forming: Conventional and hot forming methods are required for this alloy.

Welding

Nickel 233 alloy can be welded, soldered or brazed through conventional processes. Foreign particles are removed from the alloy prior to welding.

Annealing: Annealing of nickel 233 alloys can be performed at 2372°C (1300°F) to 3092°C (1700°F).

Other Designations

Other designations that are equivalent to nickel 233 alloy include the following:

ASTM F1	ASTM F2	ASTM F4

Applications

The following are the list of applications of nickel 233 alloy:

Lead frames	Electronic components	Transistors	Transducers	Temperature sensors

Source: Steel Guru

Grade H43 Tool Steel (UNS T20843)

Introduction

Tool steels are high-quality steels that have good hardness, abrasion resistance and good machinability. They are generally used in a heat-treated state. Tool steels are used for special applications such as injection molding, plastic molding, die casting, extrusion and forging. AISI H43 tool steels are high vanadium-moly chrome premium hot working steel having excellent abrasion and heat resistance. The following section will provide an overview of the grade H43 tool steels.

Chemical Composition

The chemical composition of H43 tool steels is outlined in the following table.

Element	Content (%)
Molybdenum, Mo	7.75-8.5
Chromium, Cr	3.75-4.5
Vanadium, V	1.8-2.2
Carbon, C	0.5-0.65
Silicon, Si	0.2-0.45
Manganese, Mn	0.15-0.4
Phosphorus, P	0.03
Sulfur, S	0.03

Physical Properties

The following table shows the physical properties of H43 tool steels.

Properties	Metric	Imperial
Density	7.7 g/cm3	0.278 lb/in3
Melting point	1450-1510° C	2642-2750° F

Mechanical Properties

The mechanical properties of H43 tool steels are displayed in the following table.

Properties	Metric	Imperial
Tensile strength	650-880 MPa	167.95 ksi
Elongation	8-25%	15%
Modulus of elasticity	190-210 GPa	27557- 30457 ksi
Poisson° s ratio	0.27-0.3	0.27-0.3

Thermal Properties

The thermal properties of H43 tool steels are given in the following table

Properties	Metric	Imperial
Thermal expansion co-efficient	10 ° m/m ° C	5.5 ° in/in ° F
Thermal conductivity	25 W/mK	173 BTU.in/hrft °. ° F

Fabrication and Heat Treatment

Forging: H43 tool steels are forged slowly and uniformly at 3092 - 3272°C (1700-1800°F). The material is cooled slowly in lime, mica or dry ashes when dried.

Annealing: H43 tools steels are annealed slowly at 2732 - 2822°C (1500-1550°F) followed by slow cooling to about 1832°C (1000°F).

Stress Relieving: The annealed materials are then stress relieved by heating at 2102 - 2282°C (1150-1250°F), allowed to equalize and cooled in still air.

Hardening: The materials are transferred to the hardening furnace operating at 3902 - 3992°C (2150-2200°F) based on the degree of hardening required for specific applications.

Quenching: H43 tool steels are quenched in air, oil or molten salt bath at 1832 - 2012°C (1000-1100°F).

Tempering: Tempering is usually carried out at 1832 - 2012°C (1000-1100°F), but the temperature can be varied according to the desired hardness.

Applications: H43 tool steels are mainly used for severe hot work applications such as forming rolls, dies and punches where abrasion and wash resistance is required.

Source: Steel Guru

Protectionist fears loom large over the global steel industry

Recent upheaval in the currency market culminating in USD getting stronger v/s several Asian and emerging market currency enlivened the export competitiveness of steel from Japan, China, India, Korea etc. Most of the Asian countries have been afflicted with below par domestic demand and production deluge looking for outlet overseas. However the uncertainty in global economy had kept the currencies unduly strong taking the sheen of export competitiveness. However recent flickers of hope from convulsing US economy with the first signs of turnaround provoking Federal Reserve Chief making unequivocal statement about a roll back of QE3 has sent USD in tizzy and other currency into tailspin . The sudden shift in parity has catapulted these nations into export competitiveness in the nick of time. Blessing has not been disguised but certainly a bag of mixed fortune. As the global economy oscillates between hope and despair most of the importing countries are up in arms to protect the domestic markets from being invaded by cheaper imports. Apprehending resurgence of unemployment and slack growth and demand US and EU nations have made their protectionist intention clear. Virulent fear has engulfed ASEAN nation viz., Korea, Malaysia, Indonesia and Latin American countries viz., Brazil, Argentina etc. The protectionist steps taken by steel-importing countries could hit steelmakers from major exporters Japan and South Korea. But China, which produces nearly half the world's steel, may only be pushed to curb output if domestic demand shrinks.

Asian steelmakers have begun cutting exports in the face of growing cross-border trade disputes, raising the prospect that they may be forced to curtail production as they grapple with weak domestic demand and overcapacity. Japan, exporting nearly 40 percent of its output, is

concerned about eruption of trade war, and is proactively taking steps to regulate exports. Trade disputes tend to rise when producers are confronted by weak demand at home and those losing money try to find ways to return to profitability. The global steel market has excess capacity of around 334 million tonne, of which around 200 million tonne is in China. Despite slower demand growth, Chinese crude steel production remains near a record of about 2.2 million tonnes a day. Exports account for less than 10 percent of China's total crude steel output which last year stood at a record 716.5 million tonne. But they continue to grow, with Chinese exports of steel products rising 14 percent to nearly 56 million tonnes in 2012. Other nations viz., India, Korea and Japan will up for stiff protectionist challenge in EU, USA etc. Moreover with the Chinese undeterred by competition and trade disputes have always strong challenge to these nations as well as CIS mills. H2 is beset with ambiguity and uncertainties. H1 having washed off the real action will commence after Ramadan and EU holidays (Q4) with construction and pre-winter stocking slated. However the flip flop by US economy and Federal Reserve Bank is only adding to the uncertainty. Undeniably global steel prices have shown resilience off late being followed by improved iron ore levels, however the real test will depend on its sustainability in Q3 and Q4.

Source: Steel Guru

Long product market in India undergoes paradigm shift beaten by recession

Post 2008 era has witnessed many dynamics and postulates getting redefined in global steel market. So back breaking has been the impact of roughshod market that traditional havens of production and consumption have undergone role reversal. At the same time conventional thumb rules of conversion from semis to finish and down the value chain have been re-calibrated as prices plummeted and margins squeezed. If the Chinese production rage refused to douse by a disorderly industry it imperiled the very existence of steel mills in SE Asia and Europe by flooding the market with cheap material. Indian steel market could not remain unscathed with its proximity to dragon land. Import threat in long product market was guarded even worst of times as India has a thriving secondary sector able to match cost competition. Primary mills on the other hand have played second fiddle in this roller coaster segment. GDP growth has direct linkage with long steel demand since construction and infrastructure sector are bulk consumers of TMT and structural steel. Conversely the movement in price level of TMT bar becomes indicator of the steel consumption in economy. Over the last 5 years of turbulence secondary sector has taken the maximum flak as new construction activity and CAPEX projects have been shelved by demand and credit strapped economy and the input material supply and price have been extremely volatile. If the rot in domestic iron ore mining has taken toll of availability and volatility of currency has deepened the cost uncertainty.

Meanwhile the primary steel mills had already opened war on the secondary sector by indulging in capacity expansion. More with a desire to capitalize on the slated growth expectations in construction and infrastructure most of the flat product manufacturers went for expansion of product basket. Prominently JSW and JSPL opened accounts TMT and WRC manufacturing. At the same time some other mills went in for conversion agents to latch on the opportunity. Traditionally the market had been dissected between secondary and primary mills between reality and project respectively. Market division was tacit but price driven with reality and household sector dependent on cheaper secondary products, whereas the quality conscious infrastructure projects were being catered by the primary mills. However the demarcation has become hazy over the last couple of years and so has the price differential. Slump in demand has made the producers fight for every inch of space. Demand from projects being sapped the

major mills shifted focus to the retail segment. Concurrently the secondary mills suitably aligned themselves with stringent quality parameters in projects thereby coming neck to neck with majors. It would be exaggeration to call it role reversal but it was certainly eating into each other pie. The norm of price gap of about INR 5000-6000 per tonne between the secondary and primary product narrowed gradually. At the same time bogey of implementation of BIS norm gained strength and some suspected ulterior motive of major mills to vanquish secondary challenge once for all. Even though the deadline for BIS norm has been extended several times it won't be long before it comes to stay tilting the balance in favor of major mills further. Major Mills have also adopted customization of products giving the buyers option of tailor made products viz CTL, corrosion resistant, EQ grades etc. Doorstep delivery and collection of order with online order booking and delivery process are radical evolution in customer ease. With new capacities coming online the battle will become more acrimonious but round one has gone to primary manufacturers. Market share split between secondary and primary has become even with 50% each which was earlier skewed in favor of secondary mills 70:30. Current economic slowdown with the emerging challenges of its revival in the election year will throw up new challenges but the financial strength of companies will be tested to the hilt in liquidity hit market.

Source: Steel Guru

RINL signs pact with Canadian varsity

A high-level delegation led by Union Steel Minister Mr. Beni Prasad Verma is on a week-long tour to Canada from July 15 with the objective of sourcing and acquisition of minerals, viz. coking coal and iron ore, for the Indian Steel industry, according to a press release issued here a few days back by Rashtriya Ispat Nigam Limited (Visakhapatnam Steel Plant). Acquisition of intellectual property and cooperation in R&D activities are also on the agenda. The delegation concluded a MoU between the RINL and McMaster University, Hamilton, Canada, to collaborate and strengthen research in steel-making, beneficiation and pellet-making from low-grade magnetite and also towards training of personnel and exchange of research papers. The MoU was signed by A.P Choudhary, CMD of the RINL, and Peter Mascher, of McMaster University. Mr. Beni Prasad Verma said the pact with the university will strengthen R&D activities in steel sector essential to achieving the target of over 200 million tonnes of capacity during the next few years. About export of iron ore from India, he said the Government had taken action resulting in sharp decline of iron ore exports. Although India had rich reserves of iron ore, it is the opportune time for the Indian steel industry to acquire more iron ore mines, he added. D.R.S Chaudhary, Secretary (steel), and Lokesh Chandra, Joint Secretary (steel), accompanied the Minister.

Source: Business Line

Steel makers up cost-cutting as demand tails off

Major Japanese steel makers are stepping up their cost-cutting, amid stalled growth in domestic demand and intensifying international competition. Nippon Steel & Sumitomo Metal Corp. plans to close one of the three blast furnaces at its ironworks in Kimitsu, Chiba Prefecture, by fiscal 2015. Kobe Steel Ltd. will stop operating the sole blast furnace at its plant in Kobe in fiscal 2017. The two steel makers are drastically restructuring their manufacturing operations for the first time since 1993 and 1987, respectively. As manufacturers of automobiles and electrical equipment are increasing their production overseas, domestic demand for steel products is unlikely to grow. Cost reductions and streamlining of production have become unavoidable for the survival of steel makers. In fiscal 2012, demand for steel products in Japan fell to 61 million tons, from 79 million in 2007. "With the population falling and rising overseas production by automakers and other users, domestic steel demand will drop below 55 million tons in 2020," Kobe Steel President Hiroya Kawasaki predicted. Kobe Steel estimates annual cost savings of more than ¥15 billion

from the closure of a blast furnace. But rationalization of production could have adverse effects on local economies, such as reduction of jobs and fixed-asset tax revenues. Increased competition with Chinese and South Korean steel makers is also forcing Japanese manufacturers to accelerate their cost cuts.

According to the World Steel Association, world production of crude steel stood at 1.547 billion tons in 2012, up 1.2 percent from the previous year. Chinese makers accounted for 46 percent of the total. Due to the rising production of Chinese manufacturers, East Asia faces a glut of steel products. Japanese steel makers have been forced to cut their prices by 20 percent to 30 percent from fiscal 2008 levels. With Chinese steel makers producing at an annual rate of more than 800 million tons, the gap between supply and demand has expanded to a "very alarming" degree, warned Hiroshi Tomono, president of Nippon Steel & Sumitomo Metal. Industry officials say that Chinese and South Korean steel makers plan to begin operating new ironworks around 2015 and the glut of steel products is expected to expand to a level that could shake the management of leading Japanese manufacturers. Rising import prices for iron ore and coal, caused by the depreciation of the yen, are also eating into earnings at Japanese steel makers. Raw material costs account for 50 percent to 60 percent of manufacturing costs. At Nippon Steel & Sumitomo, founded in October 2012 through the merger of Nippon Steel Corp. and Sumitomo Metal Industries Ltd., former Sumitomo Metal plants will follow those that belonged to Nippon Steel and introduce a production technology that uses inexpensive and low-quality coal. JFE Steel Corp., Japan's other top three steel maker, plans to build a new manufacturing facility at its plant in Fukuyama, Hiroshima Prefecture, aiming to drastically reduce the use of coal and other raw materials in the smelting process.

Source: The Japan Times

Steel Goal Fades as $12 Billion Projects Dumped: Corporate India

ArcelorMittal (MT) and Posco's decisions to scrap $12 billion of proposed steel projects in India and delays in building plants by Tata Steel Ltd. (TATA) and its peers will probably cut the nation's 2020 capacity target by a quarter. India may add about 50 million metric tons in the next eight years, half of an earlier plan, taking total capacity to 150 million tons, according to the average estimate of six analysts, government officials and company executives in a Bloomberg survey. Slowing demand, land acquisition delays, rising funding costs and difficulties in getting iron ore mining permits are diminishing the viability of the projects, said A.S. Firoz, the steel ministry's chief economist. The Indian rupee's plunge to a record this year, which lifted equipment and raw material import costs, has exacerbated the nation's decline as a favored steelmaking destination. Steel is crucial to Prime Minister Manmohan Singh's effort to boost infrastructure investment and revive economic growth from 5 percent, the slowest in a decade. "The actual work for easing the process of mining permits and land acquisitions is far from desirable, making steel investments a distant dream for both foreign and local companies," said Devendra Pant, chief economist at India Ratings & Research, the local unit of Fitch Ratings. "Delays in implementing large-scale projects may spur imports of these products, critical for infrastructure, eventually putting enormous strain on our macro-economic balances."

ArcelorMittal, Posco

ArcelorMittal, the world's biggest steelmaker, ditched its 12 million-ton-a-year project in Odisha recently after waiting more than seven years to get land and permits to mine for iron ore, a key raw material. South Korea's Posco, which is close to acquiring all the land for a planned $12 billion plant and port in the eastern state, exited its project in the southern state of Karnataka for similar reasons. "India has certainly lost sheen," said Prasad Baji, an analyst at Edelweiss Financial

Services in Mumbai. "I don't see the investment cycle returning in the near future." Tata Steel, India's biggest producer of the alloy, fell 3 percent to 233.8 rupees at the close in Mumbai, extending its drop this year to 45 percent. Steel Authority of India Ltd., the second-biggest, lost 1.3 percent to 44.35 rupees, extending this year's decline to 51 percent. Smaller rival JSW Steel Ltd. (JSTL) dropped 1.3 percent to 564.2 rupees, taking its fall this year to 30.5 percent. "It looks very difficult we'll be able to reach 200 million tons by 2020, given the ongoing issues with land acquisition and other processes," Ponnapalli Madhusudan, finance director at Rashtriya Ispat Nigam Ltd., a state-owned unlisted steelmaker, said by phone from the southern city of Visakhapatnam. "The timeline to achieve this target may be extended."

Tata Steel, Jindal

Tata Steel in 2005 announced plans to spend $10 billion for a 12 million ton project in the eastern state of Jharkhand. It expected to set up the first phase of 6 million tons within three years to 4 1/2 years from the date of obtaining all clearances. The Mumbai-based company is awaiting a resettlement and rehabilitation policy from the state government for the project, according to its website. "Steel projects have been facing difficulties for the past two years due to delays on various fronts, but there is hope things will improve," said Mr. Sushil Maroo, Deputy Managing Director at Jindal Steel & Power Ltd. (JSP), controlled by billionaire lawmaker Naveen Jindal. "The country has taken steps to bring transparency to mine allocations and this will help improve things." Jindal Steel has been awaiting mining permits for almost a year for a coal mine in Odisha, where it's building a steel mill that will run on gas produced from thermal coal. The company has completed all formalities needed for the permit, Maroo said in a phone interview few days back.

Bengal Plant

JSW Steel deferred the construction of a $3 billion steel project in the eastern state of West Bengal, citing lack of assured raw material supplies, Group Chief Financial Officer Seshagiri Rao said in April. The Mumbai-based company got land and necessary approvals last year for the 3 million-ton plant. The company also scrapped expansion at its largest factory in Karnataka that is running at less than capacity due to an iron ore shortage. Corporate and infrastructure investments in India started slowing because of policy bottlenecks and a tighter monetary policy aimed at curbing commodity prices, according to the Economic Survey for the year ended March 31. Almost half of the major infrastructure projects, including power plants and oil refineries, were running behind schedule, said the survey, which is a report on the government's performance for the year. "The policy paralysis is taking a big, big toll on the economy," said Giriraj Daga, an analyst at Nirmal Bang Equities Pvt. in Mumbai. "It is killing the manufacturing sector and soon we will see the ripple effects on services."

Source: Bloomberg BusinessWeek

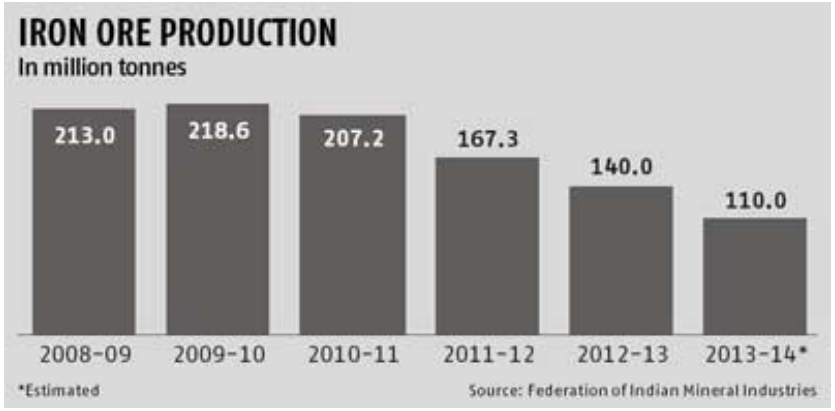
SAIL to raise capacity to 50 million tonnes

PTI reported that Steel Authority of India, now ramping up capacity to 24 million tonnes per annum, plans to embark on next phase of expansion to raise it further to 50 million tonnes per annum by 2022 with INR 120,000 crore investments. The state owned steel maker, which currently has 14 million tonnes per annum capacity, said most of the planned expansion would be carried out through Brownfield expansions in existing five steel mills, barring one proposed at Sindri in Jharkhand. Mr CS Verma told in an interview that "Today we have 14 million tonnes per annum capacity. By the end of this year, our capacity will be 19 million tonnes per annum. By next year, our capacity will be 24 million tonnes per annum. Then, we are having our vision 2022, when 13th Five Year Plan ends, we will be having our capacity escalated to 50 million tonnes per annum."

He added that "All these expansions would be at our existing facilities, barring Sindri where we plan to set up a 5.6 million tonnes per annum Greenfield steel plant." Asked about the investments that would be required for the proposed expansion, he said it roughly takes USD 1 billion investment for one million tonne steel capacity addition. Mr Verma said that "However, since most of the expansions would be carried out in existing plants, expenditure would be little less than what is considered as the thumb rule. It would be around USD 20 billion."

Source: Steel Guru

Steel firms oppose move to lift restriction on iron ore export



The Centre's proposed move to remove constraints in the export of iron ore and other minerals has raised fresh concern among steel makers. They fear easing of these restrictions at a time when the industry is facing acute shortage of raw materials would add to their woes. Last week, while addressing an Assocham event, Prime Minister Manmohan Singh had said the government would do the needful to smoothen iron ore export to boost overall exports and bring down the current account deficit (CAD). While the PM has not spelt out the measures, the miners are looking forward to withdrawal of 30 per cent export duty on iron ore and removal of differential railway freight charged on ore meant for exports. "It will be a disaster for the steel industry, as we are already facing shortage of iron ore and there is not enough production of ore in the country," said Seshagiri Rao, joint managing director and group chief financial officer of JSW Steel. Due to shortage of ore, most steel companies are working at lower capacities. "Last year, the entire steel industry produced only 72 million tonnes as against a capacity of 100 million tonnes when the country produced 140 million tonnes of iron ore. This year, ore production is estimated to be lower than last year as Goa has gone out of production and several mines are yet to get all approvals to start mining in Karnataka," he added. The Federation of Indian Mineral Industries estimates ore production at 100-110 million tonnes for 2013-14, an all-time low in recent years and a decline of about 25 per cent over the last financial year. In 2012-13, India produced 140 million tonnes of the ore. "Last year, Karnataka auctioned about 25 million tonnes and Goa contributed till the first half of the fiscal. This year, there is not much on Goa resuming production. The slow progress in giving forest and environmental approvals to mines in Karnataka will affect the overall production," said R K Sharma, secretary-general. However, welcoming the PM's announcement on removing restrictions on export of ore, he said there were not many opportunities for export this year, except in the eastern sector. "We can expect iron ore exports to happen from Jharkhand and Odisha in a limited quantity this year," he said. In Karnataka, JSW Steel is operating its 10-million tonne per annum steel plant between 75 and 80 per cent capacity. BMM Ispat, Kalyani Steel and Sathavahana Ispat are operating between 30 per cent and 60 per cent. As many as 54 of 72 sponge iron units have shut down due to shortage of ore. According to Rao, companies might have to resort to imported ore this year, too, due to the shortage. In FY13, Indian steel makers imported three million tonnes of ore for coast-based plants. Besides, the country might have to increase import of finished steel, while keeping domestic capacity idle. Last year, India imported 8.3 million tonnes of steel

worth $7 billion. "The government should see that domestic steel mills get adequate raw material and encourage export of finished goods, which will help in bringing down the CAD," Rao added.

Source: Business Standard

Indian steel mills need to improve quality and cut costs

Times of India reported that Mr UP Singh, Joint Secretary Ministry of Steel during his visit to Bokaro highlighted that Indian steel makers need to become more competitive to withstand global market pressure and special attention should be given on quality. Mr Singh said "Steel manufacturers of our country have to be more competitive if they want to survive. Companies should concentrate on improving its operational efficiency, curtailing production cost and manpower cost besides enhance its product quality to be competitive." He also hinted that the current financial year would not be smooth sailing owing to waning domestic and global demands but said that this would be part of the market cycle and could be overcome. He said "Net sales realization per tonne of steel have declined in the last financial year. This reduced profit of majority of steel companies in India. The situation is not going to improve in this financial year. However studying the factors we can expect improvement in 2014-15."

Source: Steel Guru

Chinese crude steel output set to hit 750 mt in 2013

In 2013, Chinese crude steel production is expected to touch 750 mt and apparent crude steel consumption 670 mt, according to Zhang Changfu, VC of the China Iron & Steel Association (CISA). As per CISA, China's crude steel production capacity topped 920 mtpa in 2012, up more than 50m t/y from 2011. CISA has warned of serious overcapacity in China's steel industry and the latest projections bear testimony to this fact.

Source: JPC Bulletin

SAIL to increase spend on research; projects identified

Steel Authority of India Ltd (SAIL) has decided to increase its R&D outlay to one per cent of gross sales every year from the current level of around 0.3 per cent. Mr. C.S. Verma, CMD, has expressed that the company's R&D Master Plan, is now under implementation, identified certain high-impact projects and breakthrough technologies. SAIL had taken up 82 projects in 2012-2013 (of which 54 projects have been completed) mainly for plant performance improvements, product development, basic research. The PSU steel-maker saved costs of Rs 600 crore through these exercises, according to sources in SAIL's R&D Centre at Ranchi.

Source: JPC Bulletin

NINL begins to make steel billets

Neelachal Ispat Nigam Ltd (NINL) has announced commissioning of its Rs 1,650 crore billet-making facilities at Kalinganagar in Odisha. This was significant for NINL as demand for and price realisation of billets was better in the present market scenario than the pig iron, MD S.P. Patnaik has said. According to Director (Finance) S.P. Padhi, the production of value added product like billet compared to pig iron, will give better sales realisations and improve NINL's financial performance. Because of paucity of demand for pig iron, NINL utilised half of its rated pig iron capacity at four-lakh tonne in 2012-13. In 2013-14, the company targeted to produce pig iron and billets of four lakh tonne each. This product mix would give them better profitability, Patnaik said.

Source: JPC Bulletin

Indian Iron & Steel Industry in April - March 2012 - 2013

1. Production of crude steel during April - March 2012-13 was at 78.309 mt, a growth of 5.4% compared to April - March 2011-12. The Main Producers produced 24.612 mt during this period, which was a growth of 4.3% compared to last year. The Major Producers produced

18.47 mt during this period, which was a growth of 8.6% compared to last year. The rest i.e. 35.227 mt was the contribution of the Other Producers, which was a growth of 4.6% compared to last year.

2. Pig iron production for sale in April - March 2012-13 was 6.099 mt (a growth of 13.6% compared to last year), after accounting for own consumption/IPT.
3. In case of total finished steel (alloy + non-alloy) during April - March 2012-13:
   - Production for sale stood at 77.616 mt, a growth of 2.5% compared to last year, in which contribution of the non-alloy steel segment stood at 72.986 mt, while the rest was the contribution of the alloy steel segment (including stainless steel). The contribution of the Main Producers stood at 19.14 mt (a growth of 6.5%), while Major Producers stood at 23.617 mt (a growth of 7.6%) and the rest (44.424 mt) was the contribution of the Other Producers.
   - Exports stood at 5.253 mt during April - March 2012-13, a growth of 14.5% compared to last year, in which contribution of the non-alloy steel segment stood at 4.641 mt (growth of near 10.4%), while the rest was the share of the alloy steel segment (including stainless steel).
   - Imports stood at 7.867 mt during April - March 2012-13, a growth of 14.6% compared to last year, in which contribution of the non-alloy steel segment stood at 6.208 mt (growth of 14.2%), while the rest was the share of the alloy steel segment (including stainless steel).
   - India remained a net importer of steel during April - March 2012-13.
   - Variation in stock of total finished steel (alloy + non-alloy) stood at (-) 0.107 mt, comprising primarily of a stock of (-) 0.1072 mt of non-alloy steel.
   - Real consumption (i.e. after adjustment of double counting in flat products) stood at 73.33 mt in April - March 2012-13, a growth of 3.3% compared to last year.

Source: JPC Bulletin

Indian casting productivity grows 12.7% in last decade

India's casting productivity grew at compounded annual growth rate of 12.7% in last decade on the back of strong production growth. India's productivity per plant, calculated as total tonnage divided by number of plants, grew to 2,221 tonne per plant in 2011 from 671 in 2001, the data by World Casting Census showed. Among top 10 casting producers in world, India's productivity growth was fastest during the period under consideration. During the same period, India's casting production grew to 9.9 million tonne from 3.15 million tonne. However, despite such a strong growth in productivity, India is still ranked eighth in productivity amongst top 10 producers of casting in the world. According to the data, only Italy and China are ranked below India. During the period under consideration, world productivity fell marginally to 1,996 tonne from 2,009 tonne. Mr Chetan Tamboli CMD of Steelcast Ltd said that "The casting industry in India has been doing exceptionally well compared to other leading markets. This is evident from production as well as productivity growth during last decade. The productivity growth is more pronounced as it has come from lesser number of casting units. We believe with increased share of organized market, the productivity growth is likely to continue at similar rates in the next decade as well." Mr Tamboli added that due to strong production and productivity growth, India's rank has moved up to third largest casting producer from sixth in 2001. He said that "If the country's productivity growth continues at current pace for next decade, we are likely to be among top 3 in productivity as well." As per data from World Casting Census, Germany with productivity of 8,933 mtpp ranks first among top producers. US, France and Russia are ranked

second to fourth on the list. Korea, Japan and Brazil are just above India on the list; while Italy and China completing the list on ninth and tenth position respectively.

Source: Steel Guru

Iron ore market remains agog with Chinese mills evincing interest

Prices continued upward across the curve. There is belief that steel mills are still restocking driving prices which would be backed up by physical and rebar. Steel price in China has improved by 1% and over 2% in long product during July giving the market much desired break and perking the sentiments of iron ore also. Even though June import of iron ore was nearly 9% down over May at 62 million tonnes amidst clamor of production pruning to curtail inventory recently. However ever since finished steel demand and price have exhibited resilience owing to low inventory and increased spending of infrastructure and urbanization. Much to the delight it has created positive momentum in iron ore market as well supported by improved freight rates. Iron ore levels have improved by 13% within a month. Inventory level at Chinese ports is at healthy 74 million tonne.

Source: Steel Guru

Steelmakers File U.S. Trade Case Seeking Duties on Oil Pipes

A group of oil-pipe makers led by United States Steel Corp. (X) filed a U.S. trade complaint against competitors in nine nations, alleging goods from those countries were sold in the U.S. market below cost and, in some cases, benefited from government subsidies. The U.S. coalition made the complaint with the International Trade Commission in Washington. Countries named in the complaint are India, Korea, the Philippines, Saudi Arabia, Taiwan, Thailand, Turkey, Ukraine and Vietnam. U.S. Steel and Tenaris SA (TEN) rose in New York. Producers including U.S. Steel won U.S. duties averaging 86 percent on Chinese pipes used in oil and gas wells, after complaining in a similar case brought in 2009 that they were being hurt by below-market prices for Chinese products. The latest case, if successful, would be a "landmark record win for the U.S. steel industry" because it would create a defense against imported oil-pipe products, said Michelle Applebaum, managing partner at consultant Steel Market Intelligence in Chicago. The case "should be bullish for everybody who makes sheet steel," Applebaum said by phone. U.S. Steel, the second-largest U.S. steelmaker by sales, stands to gain the most and all suppliers of oil country tubular goods, or OCTG pipes, should benefit, she said. The case would also help protect domestic producers from below-market "transhipped" products originally produced in China and imported to the U.S. via another country, she said. Nucor Corp. (NUE), the biggest U.S. steel producer by sales, would also benefit if the case is successful, Applebaum said. U.S. Steel, which got 43 percent of its 2012 operating income from its tubular division, rose 8.3 percent, the most since Jan. 2, to close at $19.25 a share in New York. Luxembourg-based Tenaris (TS)'s American depositary receipts, each worth two ordinary shares, gained 9.1 percent, to $44.79.

Source: Bloomberg

Alloy Steel Plant makes special grade variety for Indian Navy

Alloy Steel Plant (ASP) of SAIL said that it has produced (for the first time in the country) a special-grade steel meant for use in submarines, for the Indian Navy. The high-strength and low temperature item (DMR - 292A) was manufactured according to the specifications developed by the Defence Metallurgical Research Laboratory (Hyderabad) of the Defence Research & Development Organisation. The steel will be processed to plates through Rourkela Steel Plant (RSP) directly or via Bokaro Steel Plant before supply to DMRL for further testing, a SAIL source said. The process would be then ready for certification.

Source: JPC Bulletin

Macroeconomic indicators - 12th Plan growth target likely to cut

In view of continued economic slowdown, Planning Commission may reset annual average growth rate target to 7 per cent for the 12th Plan (2012-17) in the mid-term review of the five-year policy document. According to sources, the Commission has already started the process of mid-term review of the 12th Five Year Plan and is considering reducing the target as it may not be possible to achieve the targeted 8 per cent growth in view of global and domestic factors. The Commission will take into account the key data on industrial production and exports released by the government to arrive at a conclusion. In a clear signal that Indian economy is not out of woods, the data revealed contraction in industrial production and exports coupled with near double digit retail inflation. While the Index of Industrial Production contracted by 1.6% in May, the lowest factory output in 11 months, the trade figures suggest 4.6% decline in exports in June. The retail inflation inched up to 9.87% in June mainly due to rise in vegetable and fruit prices. As per the CSO's estimates, the Indian economy grew at decade low rate of 5% in the 2012-13, the first year of 12th Five year Plan. Besides, the government is expecting economic growth of around 6.1 to 6.7% this fiscal the second year of the five year policy period.

Source: Steel Guru

Cyrus Mistry ropes in marketing guru Nirmalya Kumar to steer Tata group's strategy

Tata Chairman Cyrus Mistry, who is recruiting top talent to helm the various businesses and functions of the sprawling group, has tapped one of the world's foremost marketing strategists to head strategy for the Rs 5.05 lakh crore empire. Nirmalya Kumar, London Business School professor and top-notch marketing strategist, is joining the Tata Group from August 1 this year. He will report to Mistry and be responsible for strategy at the group level. Consultant, coach, speaker and author, Kumar is the professor of marketing and co-director of the Aditya Birla Centre at London Business School. He is a key proponent of the three Vs of marketing - valued customer, value network and value proposition - which was explained in detail in his book, Marketing as Strategy: Understanding the CEO's Agenda for Driving Growth and Innovation. An art aficionado, Kumar graduated from the Calcutta University in B Com before doing his MBA from University of Illinois Chicago and PhD in marketing from the Kellogg Graduate School of Management. His personal homepage at the London Business School website says he is the custodian of 'among the largest known private collection of paintings of Jamini Roy and Rabindranath Tagore'.

Kumar declined to be drawn into a discussion on his plans, referring all queries to the Tata Group. Mistry has been quietly putting together his team after taking over from Ratan Tata last year. He has replaced two group-level units that reported to Tata, with one group executive council. Three senior executives, with expertise in different key functions, have already taken charge in the past one-and-a-half years. Mukund Rajan, a Tata veteran, is now the group's brand custodian; Madhu Kannan, the former chief executive of the Bombay Stock Exchange (BSE) joined the group last year to do business development; while NS Rajan, partner at EY, came on board this year as chief human resources officer. Kumar, whose international stature as a marketing whiz kid is well-entrenched, will be Mistry's most high-profile appointment so far. His official designation will be member, group executive council, Tata Sons. Kumar is expected to help Mistry and the group management in helping design an appropriate strategy for various businesses. He joins the group at a time of transition and change. Tata Motors is trying to revive the market for its products in India while sustaining the rapid growth at its overseas units, Jaguar Land Rover; Tata Steel is trying to pay its debt and stay competitive in a weak economic

environment while Tata Consultancy Services, the immensely profitable software services firm, faces the challenge of sustaining growth at a time of pain for the industry.

Source: The Economic Times

IMF cuts global growth forecast

In its latest edition of the World Economic Outlook, the IMF has reduced forecast for global growth but maintained an overall positive note, pointing out that though global economic prospects have improved again, but the 'bumpy recovery and skewed macroeconomic policy mix in advanced economies are complicating policymaking in emerging market economics.' world output growth is forecast to reach 3.3 per cent in 2013 (a tad down from the earlier 3.5 per cent) and 4 per cent in 2014. Stressing on the fact that what was earlier a two-speed recovery process has now yielded to become a three-speed one, in that while emerging market and developing economies are still going strong, but in advanced economies, there appears to be a growing bifurcation between the United States on one hand and the euro area on the other. This is reflected in the IMF forecasts: growth in emerging market and developing economies is forecast to reach 5.3 per cent in 2013 and 5.7 per cent in 2014. Growth in the United States is forecast to be 1.9 per cent in 2013 and 3 per cent in 2014. In contrast, growth in the euro area is forecast to be (-) 0.3 per cent in 2013 and 1.1 per cent in 2014.

Region	Projections for Economic Growth (% yoy changes)	
	2013	2014
World	**3.3**	**4.0**
USA	1.9	3.0
EU	-0.3	1.1
Japan	1.6	1.4
Russia	3.4	3.8
China	8.0	8.2
India	5.7	6.2
Brazil	3.0	4.0

Source: JPC Bulletin

AP allocates three iron ore mines to RINL

RINL has been allotted three captive iron ore mines in its home state of Andhra Pradesh. The mines are spread over 2,500 hectares each at Guduru and Bayyaram in Warangal and Khammam districts, while the third one is spread over 342 hectares in Bheemadevarapalli, Karimnagar district. This is perhaps the first time after the mining problems in Karnataka that captive blocks have been recommended for allotment to a steel producer by any state. Describing it as a historic development, AP Choudhary, chairman and managing director of RINL has said that the move would strengthen RINL's expansion plans to become a 20-million-tonne-per-annum plant, the largest single-location plant. A statement issued by RINL said the chief minister has promised that the company's move to acquire iron ore mines in Andhra Pradesh will be put on fast track.

> An asylum for the sane would be empty in America
>
> ....George Bernard Shaw
> Playwright

Source: JPC Bulletin