



Indian Steel Sector Fortnightly Round Up

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Indian Developments

Iron Ore

Iron ore miners though in Odisha and Chhattisgarh seem reluctant to reduce prices for the time being forcing the sponge iron producers to cut down on production. Rungta mines kept the price of iron ore unchanged for August.

Sponge Iron

The severity of the drop in price levels of sponge iron can be judged from the following price movements Bellary (-400), Kolkata (-1250), Raigarh (-1000), Rourkela (-800)

Melting Scrap

Scrap price levels dipped at some locations though remaining unchanged at other locations owing to poor offtake from the furnace owners . Price dipped at Hyderabad (-200), Kandla (-900), Kolkata (-800), Mandi (-600), Mumbai (-1500)

Pencil Ingot

Semis market also crashed at most locations. The price movements at various locations were as follows: Billets : Chennai (-1300), Durgapur (-1800), Hyderabad (-1300) , Jalna (-1200) Kandla (-1000), Kolkata (-932), Ludhiana (-2100), Mumbai(-1100), Raipur (-1600), Rourkela (-1150). Pencil Ingot price movements were as follows: Bhiwari (-400), Durgapur (-1200), Ghaziabad (-700), Jaipur (-800), Hyderabad (-1200), Ludhiana (-2000), Mumbai (-1000) Raigarh (-700), Raipur (-1600) and Rourkela (-1150)



Rebar (TMT/QST)

Finished steel market was equally devastated with price falling steeply at all locations for rebar. Most of producers in south, west and Central region cut down on production operating at 50-75% to restrict losses as the conversion margin from semis to rebar narrowed to INR 1000 per tonne from INR 2000 per tonne. Recent hike in power tariff by the Chhattisgarh government of around INR 1/unit for all steel units has led to increase in cost of production. Rebar prices in Mumbai hit a 5-year low and there can be very limited downside from this level. Currently inventory is at a comfortable level thereby ruling out and price rally. The price movements in Rebar market at various locations were as follows Ahmedabad (-300), Chennai (-1500), Delhi (-145000), Goa (-800), Hyderabad (-700), Indore (-432), Jalna (-1600), Kolkata (-1700), Ludhiana (-700), Mandi (-1800), Mumbai (-1400), Raipur (-2200) Rourkela (-1300) .

Demand Indicators

Indian infrastructure output as reflected by the Index of Eight Core Industries grew at a slower pace of 3 percent in June as sectors like coal and steel turned weak while oil and gas production fell bolstering the case for faster reforms and further rate cuts by the RBI. The sharp decline in the pace of growth during June follows a six-month high rate of 4.4 percent in May this year. The growth rate was much higher a year ago at 8.7 percent in June 2014. Steel production (weight: 6.68%) increased by 4.9 % in June, 2015. Its cumulative index during April to June, 2015-16 increased by 2.8 % over the corresponding period of previous year.

According to E&Ys 'Global Steel 2015-16', a report that analyses the global steel sector, India's steel consumption is expected to grow by 7 per cent in FY16 on the back of higher economic activity against a 2 per cent growth in consumption last year. The report said "At the same time steel supply is expected to increase by around 10 per cent in FY16, though demand is not expected to grow in tandem. As a result, capacity utilization may fall below 78 per cent, the report said. To add to steel industry woes, the trend of rising steel imports into India is expected to continue in FY16 adding to the overall situation where imports had shown an increase of 71 per cent year on year in FY15. However, the quantum of imports may vary depending upon whether India raises its import duty on steel products. In the 12th Five Year Plan, the Indian government intends to invest about S 1 trillion in the infrastructure sector. This increased focus on infrastructure development bodes well for incremental steel demand in India."

According to Moody's report, India's political infighting is denting business confidence and without a majority in the Upper House, the ruling BJP's power has been "nullified" and the opposition has blocked proposed reforms. Moody's in its latest report "India Outlook: Waiting for Reforms to Fuel Growth" highlighted that India's economic prospects face new hurdles amid falling investment, and medium and long-term growth would suffer without sufficient and quick reforms and forecast that India's GDP will grow 7.6% in 2015. Moody's said that "The government's failure to deliver promised reforms is the major impediment. Key reforms such as the land acquisition bill, flexible labour laws, and the goods and services tax have failed to pass parliament. And given the political seesaw, these are unlikely to be delivered until later this year or even 2016. Any expansion below 10% will be below potential given India's new controversial formula to calculate the size of the economy. India's GDP grew 7.3% in 2014-15."

Capital spending rose sharply in the first quarter of the current fiscal with the Narendra Modi-led NDA government looking to turn around the investment cycle and lift growth through higher public spending. The 38% rise in capex spending in the first quarter is part of the government's big plan to spur growth as private sector still remains reluctant with interest rates still remaining high. Total capital spending in the first quarter was Rs 31,051 crore.

The Reserve Bank of India has cut repo rate by 75 basis points since January and analysts do not expect any change in the upcoming monetary policy review on August 4. Many analysts see the RBI behind the curve especially as its counterparts in Asia had opted for aggressive cuts to boost growth.

India's manufacturing sector gathered pace and touched a six-month high in July amid stronger rise in new business orders, especially from overseas, but job worries remained, a Nikkei survey says. The Nikkei India Manufacturing PMI -- a composite single-figure indicator of manufacturing performance -- rose to 52.7 in July from 51.3 in June, logging a six-month high, indicating improvement in manufacturing business conditions of the country. A figure above 50 represents expansion while one below means contraction.

Looking Ahead

As another month is washed out, the Indian domestic steel prices are all set to correct further in August as well with cheaper imports of semis and finished continuing unabated in August. With China maintaining aggressive posture with cheaper offers of both long and flat steel, there is no room for price stability in the region. Anticipated erosion by another USD 30-40 per tonne in steel price in August will leave the India mills gasping for breath to survive the onslaught. Coming week doesn't seem to hold many surprises with demand fundamentals remaining weak as usual. However iron ore, sponge iron, semis and finished mills are expected to curtail production to keep the cost from inflating and maintain market levels in a desperate move. Price of iron ore likely to fall further with NMDC and major miners in Odisha and Chhattisgarh expected reduce price levels. An expected fall in Pig iron prices in Central India will pressurize sponge iron prices. Most of the mill in India are expected reduce price level for both long and flat product in the range of INR 500-1000 per tonne.

Domestic steel demand held ransom to the vicissitudes of low liquidity, lack of end use activity in construction and manufacturing is unlikely to provide relief to the market in the coming month.

A late move Odisha government decision to cap freight charges has called for strike by transporters during the week which is likely to have some impact on the price level in the coming week. However given the demand situation any increase in price is risky which will coerce sponge iron manufacturers to cut down on production to somehow maintain prices at present level.

Tata Sons chairman Mr Cyrus Mistry wrote to shareholders in the Tata Steel Annual Report for 2014-15 that the slowing Chinese economy and the rising steel imports are impacting the long-term economic competitiveness of the steel sector. The chairman noted in the report "The last 12 months saw the manifestation of several global macro risks that could have a long and deep impact on the world economy that is likely to influence the shape of the economic cycle in the future. The key amongst them was the slowdown in the Chinese economy."

Indian Steel News

New mineral policy changes the rules of the games

Rules of the game changed after the new mineral auction policy, according to the Mines and Minerals (Development and Regulations) Amendment Act, 2015. Earlier, most the steel companies planned to set up plants thinking that the state governments will award them captive mines. Now, they will have to bid for the mines. MoU race for resources is over. More than 37 steel projects worth INR 300,000 crore are stalled at the moment, according to government data. The MoUs for the mineral rich states of Jharkhand, Odisha and Chhattisgarh started pouring in from 2005. Some of the biggest projects involve major players such as Tata Steel, Bhushan Steel, and JSW Steel. Foreign players like Posco and ArcelorMittal too signed in. But few projects have taken off since.

JSW Steel posts Q1 loss of INR 107 crores as steel prices fall

The country's largest private sector integrated steel producer by volume, Sajjan Jindal-led JSW Steel on Wednesday posted its first consolidated quarterly loss in seven quarters, on the back of sharp fall in steel prices and a flood of cheap imports of the alloy into the country. The company reported a consolidated net loss of INR 106.81 crores in the April-June quarter against a net profit of INR 656.49 crore in the same period last year.

Banks take over Electrosteel – Report

Business Standard reported in 2013, when a consortium of 27 banks and financial institutions supported Kolkata-based Electrosteel Steels corporate debt restructuring proposal, it was meant to work. The company believed it would translate to cash generation of Rs 2,000 crore, enough to service the debt. However, problems with captive raw material supply and a near-crash in finished steel products in 2014 sent the plan haywire. On Monday, lenders took management control of ESL by invoking the new strategic debt restructuring rules of the Reserve Bank of India. These allow banks to acquire control of a defaulting company by converting loans into equity, partially or fully.



Government issues Stainless Steel Products (Quality Control) Order, 2015

Indian government has issued a Stainless Steel Products (Quality Control) Order, 2015 in a bid to introduce stringent quality norms and rein in rising imports and that has crippled the domestic industry. The order, issued by the union steel ministry on last Thursday, will come into effect three months of its official notification. It makes it mandatory for all manufacturers of stainless steel flat products to seek a certification from the Bureau of Indian Standards. It prohibits manufacture, storage, sale or distribution of any stainless steel product specified in the Schedule which do not conform to the specified standards and do not bear Standard mark of the BIS. However, it will not be applicable in case of exports which conform to any other specification required by the foreign buyer.

New units are functioning well - RINL CMD Mr Madhusudan

According to Chairman and Managing Director Mr P Madhusudan, the new units in the Rashtriya Ispat Nigam Ltd are functioning well and their production is being stabilised, In an interview on Thursday at the plant, Mr Madhusudan said the plant's capacity had risen to 6.3 million tonnes now and the capital repairs and modernisation of the units were underway. After the completion of the process, one million tonnes would be added and by 2017-18 the capacity would rise to 7.3 million tonnes. He said that "Ultimately the objective is to take the capacity to 20 million tonnes by 2032 and it would be done in three phases or so."

SAIL ISP despatches first export consignment of blooms to Nepal

Steel Authority of India Ltd's IISCO Steel Plant dispatched its first export consignment of 45 wagons of Steel blooms. The consignment amounting to 2764 Metric Tonnes was flagged off from the West Yard in ISP. This consignment is exported to Nepal for their urgent rehabilitation work after the massive earth quake. The blooms will be used for rolling out quake resistant TMT bars. Out of the total order of 2 rakes of 5500 metric tonnes, this is the first consignment and the second will be dispatched in first week of August.

Essar Steel launches B2B E Hypermart

In a first ever move by a B2B product company, Essar Hypermart, part of Essar Steel, has announced the launch of an online platform (www.ehypermart.in) for selling steel and other related products. Branded EHypermart (EHM), the online platform will target B2B segments.

EHypermart is an extension of Essar Steel's pioneering retail venture, Essar Hypermart to enable its customers to buy steel online. EHM has already registered over 3,000 online anchor customers. Currently, EHM is a web based market place and will soon launch a mobile app for the convenience of its customers. In the first full year operations, EHM targets revenue of USD 100 mn. It also targets 30% of sales of Essar Hypermart to be done through EHM. EHM has introduced nine products that include steel, steel products, material handling equipment, industrial paints, generators, cutting tools, steel furniture, TMT bars, angles & channels, and power cables.

AST Group stars precision tube plant at Gurang Products

AST Group announced that it has successfully commission its precision tube plant and second modernized galvanized plant in their sister concern Gaurang Products Pvt Ltd. The new high speed mill consist of cold saw and will be manufacturing CR/HR pipes from 15 od to 76 od from .8 mm to 3.2 mm and many square and rectangular tubes. The annual capacity of the group will be increased by 75,000 tonnes per annum

Jairaj Steels to invest INR 3,000 crore in steel plant in Kurnool

Hyderabad based Jairaj Steels plans to set up a steel plant in Kurnool district in Andhra Pradesh with an investment of over INR 3,000 crore. AP Industrial Infrastructural Corporation vice-chairman and MD Mr K Satyanarayana said "We have allotted 400 acres of land for the steel plant initially. Depending upon the necessity, further land will be given. It is expected to boost the trade and industrial development in the district and the entire region."

Finance ministry rules out increase in import duty

India's Finance Ministry has ruled out further raising the import duty on steel as it would be inflationary. The report quoted a senior Finance Ministry official as saying that "Further increase in import duty will affect downstream industry. It will raise the price, which in turn will have impact on inflation."



TATA Sponge Q2 net profit plunges by 89%

Tata Sponge Iron has reported 83.98% plunge in standalone net profit at INR 7.09 crore for the quarter ended June 30, 2015, due to sharp fall in sales. The company had clocked INT 44.28 crore net profit in the corresponding period a year ago. Income of the company stood at INR 141.93 crore during the quarter under review, down 26.57 per cent compared to INR 193.3 crore in the April-June period of the last fiscal. Tata Sponge Iron's total expenses also declined to INR 141.1 crore in the June quarter of the current fiscal, down 4.55 per cent as against INR 147.83 crore in the year-ago period.

Mesco Steel eyeing more distressed steel plants

After the recent INR 900 crore Maithan Ispat acquisition, Mesco Steel is eyeing some distressed steel plants as part of its plan to augment capacity to 4.5 million tonne in the next 3-5 years with an investment of INR 13,500 crore. As per report "The company has 6-7 takeover proposals from the banks for buying debt-ridden assets, which are otherwise good targets for acquisition. Maithan Ispat is located nearby to Mesco's original plant."

VISA Steel looking for strategic investor

Financial Express citing a Visa Steel official recently reported that distressed steel manufacturer Visa Steel is scouting for a strategic investor, with Tata Steel believed to have done some basic due diligence for the firm's 0.5 million tonnes per annum special steels unit at Kalinganagar in Odisha. The company has also requested lenders for additional assistance under the corrective action plan

Steel ministry approves 83 R&D projects

Indian steel ministry has approved as many as 83 R&D projects worth INR 696.27 crore in 2014-15 as it aims to expand the industry's product portfolio and help it maintain long-term sustain ability. The government is encouraging public sector undertakings and private firms in the steel sector to work on R&D projects, particularly on problems relating to utilisation of low grade ore and high ash coal. Besides, thrust is also being given to develop more value added products for which the country is mostly dependent on imports

Global Developments

Iron ore

The price of iron ore has slipped on weekend trending back toward \$US50 a tonne after recently enjoying a surge beyond \$US55 for the first time in a month. At the end of the latest session, benchmark iron ore for immediate delivery to the port of Tianjin in China was trading at \$US52.90 a tonne, down 3.1 per cent from \$US54.60 a tonne in the prior session. The fall has come as the Shanghai stock exchange again drifts lower, losing 1.1 per cent on Friday to put an exclamation point on a 15 per cent drop for the month.

Steel Scrap

Steel scrap prices in one of the largest consumers Turkey have rebounded this week by about USD 10 per tonne to climb to USD 230-235 CFR for HMS80:20 of US and European origin as to Turkish mills concluded several large deals during Week 31. Rebound in scrap prices is being attributed to restocking by Turkish steel mills and prices are likely to climb further in Week 32 as nil availability from Europe, which is on month long holidays, has buoyed the sentiments

Billets

Billet prices were stable Black Sea in Week 31 at USD 305 FOB levels but certain Chinese billet suppliers have withdrawn export offers amid price volatility in their domestic market. However, Southeast Asian importers are generally staying on the sidelines fearing billet prices could fall further and also construction steel demand is sluggish during the ongoing wet season affecting many parts of the region.

Looking Ahead

The state of health of Chinese steel sector is of paramount importance to all players connected with steel industry world wide and thus we are looking at signals from two important user segments ie auto and constructions. And the picture is not very encouraging with both sectors remaining in red reflecting sluggish steel demand of steel in China in coming months. Thus the huge glut on supply side ie steel production overcapacity is likely to push domestic steel prices further down enabling Chinese steel mills to remain aggressive on export front causing serious injury to steel mills in other nations. China's car sales registered the first yearly decline in more than two years in June 2015.



China Association of Automobile Manufacturers on July 10th had said that vehicle sales in China declined 2.31 per cent last month to 1.80 million units, the. Passenger car sales alone decreased a sharper 3.36 per cent to 1.51 million. The construction sector accounts for more than half of China's steel demand. There are several Chinese real estate sector indicators that need to be looked at to get better understanding. Recent trend in China's building sales, as per the data were released on July 15 by the National Bureau of Statistics of China, shows that China's building sales. Sales have increased 10% in the first six months of this year. June is the second consecutive month that building sales have increased on a yearly basis. Before that, China's building sales had declined each month since December 2013. Although China's building sales have increased for two consecutive months, construction activity continues to sag in China. Purchase of land is the first step in the construction of any building and as per data released on June 15 by the National Bureau of Statistics of China, in the first six months of 2015, real estate development enterprises purchased 98 million square meters of land, a YoY decline of 33.8%. Until May, land area purchased by Chinese real estate development enterprises had fallen 31% YoY. In the June reading, the decline was steeper than the previous month. The land area purchased by real estate developers is a leading indicator of construction activity. As land area purchased for future development has come down, China's construction industry seems headed for a bigger slowdown.

Global News

Global crude steel production in June dips by 24.4% YoY

World crude steel production for the 65 countries reporting to the World Steel Association (worldsteel) was 136 million tonnes in June 2015, a -2.4% decrease compared to June 2014. World crude steel production in the first six months of 2015 was 813.0 million tonnes, a decrease of -2.0% compared to the same period of 2014. The Middle East showed an increase of 2.9% whereas both North America and CIS reported negative growth of -6.9% in the first half of 2015. Crude steel production in Asia declined by -1.5% while it increased by 0.5% in the EU 28. South American production remained the same in the first six months of 2015 compared to the same period of 2014.

43% of CISA members steel mills made losses in H1 of 2015

Iranian steelmakers have asked the government to raise import duties for steels by up to 40 percent as protectionism in the global steel sector gathers. China's steel association said 43 per cent of its member firms made losses in the first half of this year, with the sector as a whole struggling with plummeting demand and prices at 20-year lows. China Iron and Steel Association said its members made total profits of just CNY 1.64 billion (USD 264 million) in the first six months of the year, but their core steel business suffered total losses of CNY 21.68 billion over the period. CISA said "Insufficient demand remains the major difficulty facing the sector. Output has reached 409.97 million tonnes in the first half of 2015, down 1.3 per cent on the year. Overall steel production in China is likely to have peaked last year, driven by record high exports, with domestic consumption actually peaking in 2013."

ArcelorMittal reports Q2 and H1 2015 results

ArcelorMittal announced results for the three and six month periods ended June 30, 2015.

Highlights

EBITDA of \$1.4 billion in 2Q 2015, stable as compared to 1Q 2015[2]

Net income of \$0.2 billion in 2Q 2015 as compared to a net loss of \$0.7 billion in 1Q 2015

Steel shipments of 22.2Mt in 2Q 2015, an increase of 3.4% YoY

16.4Mt own iron ore production as compared to 16.6Mt in 2Q 2014; 10.8Mt shipped and reported at market prices, an increase of 2.7% as compared to 10.5Mt in 2Q 2014

Credit Suisse sees extraordinary levels of China steel exports

Credit Suisse said that steel exports from China have increased to extraordinary levels as demand in the world's largest producer slows and as export growth continues trade frictions could escalate as overseas sales from China rose to 52.4 million tonnes in the first half, in line with Japan's total crude-steel production of 52.6 million tonnes for the period. Credit Suisse analyst Shinya Yamada said in a report "Mills in China confronting slower domestic demand for the first time in a generation are boosting exports, increasing competition in markets across Asia, Europe and the US. Chinese steelmakers are the linchpin of the global industry, accounting for about half of production. Chinese steel exports have attained near parity with Japan's total output in the first six months of 2015. Considering Japan's crude-steel output is second only to China's, this implies that Chinese exports have risen to extraordinary levels."





Bangladeshi rolling mills want protection measures as Chinese steel floods market

Bangladeshi re-rolling milers want the government to impose anti-dumping measures against Chinese imports of re-bars and angles immediately. They fear that the capital-intensive industry will collapse and millions of people will lose jobs as they are directly or indirectly involved with this sector unless they are not protected. Chittagong Metropolitan Chamber of Commerce and Industry (CMCCI) has urged the finance minister to impose a 25 per cent supplementary duty (SD) on import of Chinese re-bars and angles in addition to the existing duty structure, apply BSTI (Bangladesh Standards and Testing Institution) rules strictly on producers and consider an anti-dumping clause.

Nippon Steel & Sumitomo Metal to cut crude steel output by 6% in July-Sept quarter

Japan's top steelmaker Nippon Steel & Sumitomo Metal Corp plans to cut crude steel output in the July-September quarter by 690,000 tonnes or 6 percent from a year earlier as it struggles to bring down inventories. Nippon Steel slashed its crude steel output for the April-June quarter by nearly 9 percent from a year earlier to 10.3 million tonnes. Nippon Steel's EVP Mr Katsuhiko Ota told a news conference on Wednesday "Inventory adjustment is taking longer than expected. But it will end in the summer. "We aim to maintain 10.9 million tonnes of steel output in the third and fourth quarters. We'll make an effort to bring our second-half output to near the 22 million tonnes of the same period a year earlier."

ArcelorMittal Temirtau wants Kazakhstan to limit steel imports

Mr Vijay Mahadevan General Director of ArcelorMittal Temirtau JSC said that his company is discussing with the Government of Kazakhstan the possibility for increasing the demand in the domestic market by limiting imports from other countries. He said "Doing so, the Government could help us. Local market now covers about 3 million tons, while the annual domestic demand growth is 3-7%. He said "At the moment, we produce 3.5 million tons of steel a year. We plan in the near future to produce 4 million tons of steel a year with further production growth up to 6 million tons."

JFE Steel to acquire 5% stake in Formosa Ha Tinh Steel in Vietnam

JFE Steel Corporation announced that that it would acquire a five-percent stake in Formosa Ha Tinh Steel Corporation (FHS), a joint-venture company that is currently constructing Vietnam's first integrated steelworks. The project is being spearheaded by FHS's founder, Formosa Plastics Group (FPG), a Taiwanese integrated supplier of petrochemicals. JFE Steel and FPG expect to formalize the investment agreement in the near future. JFE Steel will also provide the project with technical support. The integrated steelworks will include a hot rolling mill, blast furnaces and steelmaking facility on a site measuring more than 2,000 hectares in Ha Tinh province. Facilities will begin operating sequentially from this autumn.

Philippines keeps import tariffs on steel bars

Philippines Trade Department extended for another four years the protective tariff against imported steel angle bars with an annual reduction rate of 5 percent until the fourth year to give local manufacturers time to adjust to competition. Trade, on the recommendation of the Tariff Commission, imposed a tariff of P3,345 per metric ton against imported steel angle bars on the first year starting March 16, 2015 to March 17, 2016; P3,178 per MT on the second year from March 18, 2016 to March 19, 2017; P3,019 per MT on the third year from March 20, 2017 to March 21, 2018; and P2,868 per MT from March 22, 2018 to March 23, 2019. The department said it reserved the right to review and modify the amount if found necessary.

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**SUCCESSFUL PRACTICE OF 5S <=Continue from Previous Issue
PRACTICAL APPROACH FOR STEEL RE-ROLLING MILLS**

Table 1: 5S Owner Check Sheet							
Machine Number:			Mon	Tue	Wed	Thu	Fri
Machine Name:			3/11	3/12	3/13	3/14	3/15
Machine Locaton:							
No.	Checks	Frequency	Initials of Person Responsible				
1	Red tagging contaminated items	Daily					
2	Remove residue from valves	Daily					
3	Check oil level	Every Tuesday					
4	Apply grease to transfer side	Every Thursday					
Check	Supervised by Bill Smith	Daily					

Step 4: Seiketsu, or Standardize

Seiketsu involves creating visual controls and guidelines for keeping the workplace organized, orderly and clean. This is a condition where a high standard of good housekeeping is maintained. The first three steps, or S's, are often executed by order. *Seiketsu* helps to turn it into natural, standard behavior.

Actions items:

1. Take "before" photographs.
2. Check that the first three S's are implemented properly.
3. All team activity documents/check lists should be publicly displayed on a 5S board.
4. Establish the routines and standard practices for regularly and systematically repeating the first three S's.
5. Create procedures and forms for regularly evaluating the status of the first three S's.
6. Standardize red tag procedures and holding area rules (see *Seiri*).
7. Standardize procedures for creating shadow boards, position lines, and labeling of all items (see *Seiton*).
8. Standardize cleaning schedules using the "5S Owner Check Sheets" (see *Seiso*).
9. Standardize "single-point lessons" for documenting and communicating 5S procedures and improvements in workplace and equipment.
10. Create a maintenance system for housekeeping. Make a schedule for cleaning of the workplace. A common approach is to ask a cross-functional team to do it.
11. Inter-departmental competition is an effective means of sustaining and enhancing interest in 5S
12. Assign responsibility to individuals for a work area and machinery.
13. Regular inspection/audit and evaluation by a special team (including senior management persons) to be continued.
14. Instead of criticizing poor cases, praise and commend good practices or good performers
15. Take "after" photographs and post them on the 5S board(s).

Step 5: Shitsuke, or Self-Discipline

Shitsuke involves training and discipline to ensure that everyone follows the 5S standards.. Accordingly, it becomes the culture in the organization.

Actions items:

1. Everyone in the workplace should treat it they would their own home.
2. Periodic facility management involvement is required to check that the first four S's are implemented perfectly.
3. Employees must **make it a part** of their daily work and not an action forced upon them.
4. Dedication, commitment, devotion and sincerity are needed in implementation of 5S on daily basis.
5. Senior management should initiate a celebration for the total 5S implementation, and be an active part in the total process.
6. **Senior management should do a periodic review of the status of 5S.**
7. **Inspections of first three S's should be done and the results displayed on 5S board regularly.**
8. Single point lessons should be used to communicate the standards for how 5S work should be done.
9. Root cause problem-solving process should be in place where root causes are eliminated and improvement actions include prevention.
10. Owners conduct 5S Kaizen activities and document results. Owners (operators) complete daily check sheets to control factors that accelerate deterioration of equipment, and to keep clean workplaces that help build pride.

When fully implemented, the 5S process increases morale, creates positive impressions on customers, and increase efficiency and organization. Not only will employees feel better about where they work, the effect on continuous improvement can lead to less waste, better quality and faster lead times. 5S is not only a system for housekeeping, it is an integrated approach for productivity improvement..

A study reveals that some of the units have financially gained from the first step of sorting



World's Most Popular Resources on Steel & Mining on Internet



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