BUREAU OF INDIAN STANDARDS

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Adoption of International Standards in Steel Sector – A Panacea or Pandora's Box

Today, India is the second largest steel producing country, and it is on course to become the second largest consumer of steel globally. However, India is only at ninth position in the world when it comes to steel exports. Shri XYZ, Joint Secretary at Ministry of Commerce, set out to explore reasons for this variance and to harness the export opportunities available to India's Steel Manufacturers. The stakeholder consultation revealed that upgradation of Indian Standards in steel sector by Bureau of Indian Standards, the National Standards Body of India, may hold the key to increasing the quality of Indian Steel to meet the criteria set by importing countries. During the process of primary and secondary survey, several options for upgradation of Indian Steel Standards like adoption of International Standards and amendment of indigenous Indian Standards for inclusion of popular international grades were presented to Shri XYZ. However, these options had their pros and cons and a fine balance between protecting MSME sector with technological bottlenecks and fueling India's steel export interests had to be arrived at.

Dilemma

Shri XYZ, Joint Secretary in the Ministry of Commerce, GoI has been deputed to attend an International Conference on 'Current Avenues for Steel Industry in Developing Countries' so that he can have an insight of opportunities available to the steel industry and current challenges being faced by them. Shri XYZ attends the Conference. In the conference, representatives of foreign steel manufacturers informed about their latest standards for steel and steel products, which are at par with International Standards. They further informed about the important role being played by their standards in giving boost to their exports.

Shri XYZ starts wondering if lack of adoption of International Standards as Indian Standards by Bureau of Indian Standards (BIS), the National Standards Body of India, was an issue hindering the growth of exports from the Indian steel manufacturers. After his return from the Conference, Shri XYZ called a meeting of officials from the Ministry and BIS for deliberating on the issue of standardization in steel sector in India and its impact on Indian Exports. The discussions revealed that only about 4% of standards in the sector are adoptions of international standards formulated by ISO (International Organization for Standardization) and rest have been indigenously developed by BIS.

Shri XYZ was concerned whether Indian Standards were at par with the International Standards. He also wondered whether the adoption of International Standards would fast track the process of upgradation of Indian Standards. The Joint Secretary desires to know whether there are other factors which can form backbone of Indian steel industries exports. [Exhibit 1].

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National Standardization in Steel Sector

Mr. XYZ invited a team of officials from BIS to have an understanding of the current situation of standards in steel sector of India. BIS is engaged in formulation and implementation of National Standards knows as Indian Standards. He was informed that indigenous Standardization in the steel sector started in 1950s. He was also apprised that about 214 Indian Standards on steel and related products exist as on date. These standards are periodically updated and majority of these standards deal with Carbon Steel and cover various grades of steel for structural purposes, automobile and general engineering purposes. These standards cater to the needs of large scale as well as MSME manufacturing units. He then asked the BIS officials about the status of standardization at international level.

International Standardization in Steel sector

The BIS team informed him that the International Organization for Standardization, known as ISO was created in 1947 to promote the development of international standards in all areas, with the exception of those belonging to the electrical, electronic & telecommunication branch. ISO is formed by a network of National Standards Bodies in 165 countries, with central headquarters in Geneva (Switzerland).
ISO develops international standards of voluntary compliance to coordinate the national standards of each country to facilitate trade, exchange of information and contribute with common standards for the development and transfer of technology. ISO standards of steel aim at providing uniform guarantee the quality of steels, regardless the country of origin or the country of destination
ISO standards are globally relevant as they are developed in a multi-stakeholder environment which ensures that a wide range of technical views are represented, including those relating to social and economic interests and are compliant with the six core WTO/TBT principles for developing International Standards. They can be adopted as national standards (with or without modification) after a national public enquiry process has been carried out. Since they are International Standards, other nations cannot raise valid Technical Barrier to Trade (TBT) concerns regarding their referencing in Technical Regulations.

Regulatory Regime in Steel Sector

On asking about the present status of Indian Technical Regulations, Mr. XYZ was informed by the BIS team that adoption of Indian Standards or marking products to bear ISI Mark by its very nature is optional unless it is made compulsory under specific Law, Rules & Regulations. Section 16 of BIS Act, 2016 authorizes Union Government to make the use of ISI marks compulsory in the public interest. Till date, Government has notified 145 carbon steel, alloy steel and stainless-steel products, under Quality Control Order (QCO), which should compulsorily bear ISI mark, to make available quality steel for the sectors mainly in construction, infrastructure, automobile and engineering applications. All domestic manufacturers and foreign manufacturers importing to India are required to compulsorily conform to Indian Standards for these products. Please see Exhibit no. 2.
Mr XYZ was given to understand that QCO has helped in curbing import of sub-standard steel into the country. The import of basic varieties of steel for which India has abundant installed capacity domestically has also reduced in past three years. Please see Exhibit no. 3.

Comparison: Indian and other global standards

After getting background from BIS team, Mr. XYZ desired to know about the implementation of standards in steel sector. Subsequently as per his advice primary surveys of large-scale manufacturer, exporters, importers of steel in India were carried out.

These surveys revealed that well laid Indian standards are available for steel sector. The Indian steel industry is aware about availability of ISO Standards, as also the specifications laid down in them. However, they are required to meet the specifications laid down in European (EN), American (ASTM) or Japanese (JIS) Standards for exporting their products to these countries.

In automotive sector, there is no national/international standard to be followed, it is OEM's specification which is to be complied with. Further, for some sectors, like, defense grade steel, API line pipe steel and some varieties of structural steel, standards of other countries, like America and Russia are followed even for the domestic market.

In the steel sector standards of developed countries (ASME, ASTM, JIS etc.) are either more or less stringent than the corresponding ISO standard, as per country specific requirements. In some cases, these are more stringent and demand for strict quality control checks. Indian Standards can also be made more stringent but sometimes these are relaxed to meet the limited capabilities of Secondary Producers of Steel (those who have adopted Electric Arc/ Induction Furnace route).

With continuous updating of Indian standards, many of these are already in line with corresponding international standards. Indian Standards have been formulated by modifying the base standards to suit to our specific requirements. Some Indian Standards which are old, although relevant in present context, needs to be amended for updating the various cross-referred standards in them.

Indian industry takes pride in formulating their own indigenous Indian Standards. These surveys also revealed that the industry finds certain clauses in the International Standards to be not user friendly, to be directly understood and adopted by the local manufacturers. Indian Standards, on the other hand have been found to include simplified and easy to implement technical parameters.

Indian Standards which have been notified as Technical Regulations, safeguard interest of Indian industry, as also its consumers as they through the various requirements specified in them also take into consideration, the available raw materials; the local practices of manufacturing and use of steel products; level of mechanization in manufacturing and use; knowledge and skill level of workforce in the country; availability of testing facilities; local economic consideration, for example, zinc coating thickness, etc. Also, unique use specific requirements, for example, proper performance in various seismic zones have been accounted for in these standards.

International Standardization- Boon or Bane

Sh. XYZ realized that in general, outline of international standards is more detailed and structured. They are more aligned to latest technological changes/improvements. In some cases, where there are no Indian standards for few products category, adoption of international standards may lead to resource and time saving, as making a new standard for upcoming/new technology is highly time consuming and bureaucratic process. In general, international standards are more acceptable across national boundaries. Their adoption can help in unification and ease of production. The initial expenditure and related work of importers will be reduced if national standards are aligned with most prevalent international standard of that product. More mills around the world would be able to supply to Indian market. In many cases, the quality of output may be better in application specific international standards, and compliance to those standards can lead to a positive impact on the downstream use industries. Further, in most of the product categories, the cost of compliance to International Standards is not that significant as compared

to that with Indian Standards.

Sh. XYZ also realized that large scale domestic manufacturers will not face much difficulty, in case International Standards are adopted. They were already supplying order-based consignments to foreign

buyers so they possess the capability to produce as per international standards/standards of other countries.

Given the background, Shri XYZ wondered whether BIS (India) should go for adoption of International Standardization in Steel Sector. Sh. XYZ then came across those points of the survey which revealed that ISO Standards were not without their disadvantages. In case of Automotive sector, most of the OEMs require steel as per their own standards/specification which do not match with international standards. As such adoption of international standards in the field of automotive sector will serve no purpose.

Further, in case of long steel products, certain clauses in the International Standards are not user friendly to be directly understood and adopted by local manufacturers. In addition, technology barrier can be a hurdle for small scale local manufacturers in meeting the requirements of the international standards.

Many countries have their own Standards/ requirements, and steel manufacturers/exporters to that country have to take the license from that standardization body and have regular audits for compliance. These are SIRIM for Malaysia, SNI for Indonesia, SONCAP for Nigeria, TISI for Thailand, CE Marking for Europe, etc. Also, many African and some other countries have mandatory third-party inspection requirement for exports into their country.

Shri XYZ realized that benefits of international standardization could be accrued by the domestic manufacturers only if other countries also adopt the same International Standards. Sometimes, international standards demand more stringent requirements which enhances cost of production. It may lead to a situation of more imports than exports. Thus, effectiveness of bringing the recent QCO may be reduced. Moreover, most of the demand is from domestic market leaving lesser room for export by the Indian industry.

Perceptions of Regulatory Authority regarding Standards in Steel Sector

On being asked what role can Indian Standards and BIS play in helping Indian steel exports, Additional Industrial Advisor in Ministry of Steel, GoI Sh. Paramjeet Singh revealed to Mr. XYZ that BIS can come out with comparative analysis of IS with popular international standards thus Indian manufacturers will be aware of grades having potential in international markets which can be made in India and exported globally.

He cited the examples of Electrical Steels (IS 648, IS 3024 & IS 1539) where almost all of the domestic demand was met through imports about five years ago, but after inclusion of these products in QCO, domestic capacity had come up and imports had subsided. He was hopeful that if more Indian Standards were developed and made compulsory in the fields of Specialty Steel and API grade steels, it will lead to increasing domestic capability in these niche products, which in turn can create export opportunities.

He informed that smaller steel manufacturers of India faced the limitation of technology in steel making. Majority of smaller players deployed EIF (Electric Induction Furnace) or EAF (Electric Arc Furnace) techniques for processing of steel and often used ferruginous scrap as input material. These processes inherently lacked the ability of refining steel. Thus, ultimately the small-scale manufactures were unable to achieve some of the stringent requirements in International Standards.

Mr. Singh further added that the primary factors working against India in gaining share in global steel exports are, "Cartel formation by International trade houses against buying form Indian steel mills". Mr. Singh emphasized that while the domestic trade houses were not dominant in India, at the international level, major trade houses had the ability to mould the direction of trade in steel.

However, he also pointed towards few lacunae in the Technical Regulation (QCO) which are acting as a hinderance in realizing the full potential of the QCO. The first issue pertained to fewer steel grades prescribed under the scope of Indian Standards on steel viz-a-viz the number of grades available in international or industry standards. He added that this has led to a situation where despite the product being under compulsory licensing regime of BIS, the manufacturers/importers seek exemption for specific grades of that product as the Chemical Compositions for those grades were not included in the corresponding Indian Standards. For instance, if an IS prescribes limits for Carbon (C) in a grade to be between 2% to 5%, a manufacturer making the same product with a C composition of 5.5% or 1.5% cannot obtain BIS license and will seek exemption from the regulator from the purview of QCO for their product. The exemption was granted as long as the grade under question was covered by any international/foreign or reputed third party standard. Then the exempted grades are communicated to BIS for incorporation in to the corresponding Indian Standard. Metallurgical Engineering Department (MTD) of BIS, dealing with steel standards takes up validation studies for the requested grade before amending the existing standards with new grades. Steel ministry officials said that this process was taking considerable time and MTD should immediately include grades which are already part of any established standards and for grades which are already in use by industry in India. The data from user industry can be considered for expediting validation. He further informed that till date, over 800 grades have been provided by their Ministry to BIS for inclusion in different Indian Standards.
Secondly in some cases where QCO mandated compliance of a raw material to a particular standard, the Indian importers tend to shift their imports and start importing finished products instead of raw material as Indian Standards are not available for the finished product and the imports remain out of the ambit of QCO. He added that in such cases, the Ministry had suggested BIS to quickly develop Indian Standards for all stages of steel product, that is, raw material, intermediate product and finished product.
Lastly, the Ministry officials pointed towards weak enforcement of QCO on part of BIS which leads to some unscrupulous domestic/foreign manufacturers violating the QCO norms with impunity. They added that this violation can distort the trade practices in steel sector. Ministry suggested more focus on enforcement on smaller manufacturers without punitive intent. They guided that they can be trained periodically by BIS or its laboratories for better compliance with QCO.

Conclusion

Mr. XYZ of Ministry of Commerce was made to understand all the facts. Considering these facts, he analyzed that he had specific tasks/options which he could exercise in order to achieve the goal of increased steel exports of India. The following were the 4 options which he could propose to the Government of India to be implemented for achieving the goal of India becoming the major player in world steel export.

Harnessing Alloy Steel and Specialty Steel Production for Increased Exports

Mr. XYZ of Ministry of Commerce was made to understand from all the discussions that the Indian industry was presently focused towards production of plain carbon steel so as to meet the large captive domestic consumption of the product. The international market is highly price sensitives and dependent on economies of scale and cartels in which countries like China are dominating.

Further, alloy steel and specialty steel are the areas which are technology and capital intensive. The margins are high, even though the market is comparatively smaller than plain carbon steel. In order to increase Indian export in the sector, the Indian industry need to gear up their production of alloy steels and specialty steel. In such a case, Indian Standards for those products would also need urgent development and upgradation to bring them at par with international standards.

Formulation of new standards may also be required in the areas of latest alloy steels, Wear Resistant Steels & API Grade Steels. Mr. XYZ was confused that whether adoption of International (ISO) Standards will fast track the entire process or BIS should make a comparative study of other global standards and quickly develop indigenous standards at par with other global standards. Then, there was the question of pride taken by Indian stakeholders in preparing indigenous standards. However, he was also not sure whether BIS possessed adequate infrastructure for progressing work in this area.

Accelerated Standards Formulation

Mr. XYZ was wondering whether adoption of ISO Standards for steel would serve any purpose as they were not very popular. The standards of some of the developed countries were popular and implemented. Indian industry needed to comply to the respective standards of the importing country to sell their product. There were certain industries in which OEM's had laid down their requirements for steel. In some cases, standards of a particular country were prevalent for example, Russian Standards for defense grade steel, API standards for steel pipeline. However, the fact remained that adoption of ISO standards had an advantage of fast tracking the entire process thereby ensuring time and resource saving. But the challenge remained to provide adequate infrastructure for increased participation in international technical committee meetings by BIS for ensuring that concerns of Indian industries are addressed in those standards.

Through Indian Standards, there was a possibility to cater to the various needs of Indian industry and users. With the help of such standards, it would be possible to ensure production of quality steel and help ensuring safe and durable infrastructure in the country. He was however suspicious whether BIS was geared up to come out with the comparative analysis of Indian Standards with popular international standards, so that Indian manufacturers are made aware of potential grades which can be made in India and exported globally. He knew that the process of comparative analysis of Indian standards with all International, other countries standards and OEM specified grades which are internationally popular, itself required access to such documents, analysis, ascertaining need for R&D to find out suitability of such grades in Indian context, and incorporate these grades suitably in Indian Standards after wide stakeholder consultation.

Also, it would be easier for the industry to understand the provisions of Indian Standards and implement them than. The pride taken by the Indian stakeholders in developing their own indigenous standards would also be restored. However, the bureaucratic process in BIS which delays the entire exercise concerned him. He wanted quick standards formulation in the new area of alloy steel and specialty steel, frequent review and updation/inclusion of grades in existing standards based on comparative study of global standards. He was not sure whether MTD, BIS would be able to follow a time bound approach for including grades already recommended by Ministry of Steel.

He could feel that there was a need for making process of new/improved standardization more agile.

Facilitating Participation of Indian Stakeholders in International Standardization

Mr. XYZ also felt that for seamless adoption of International Standards as Indian Standards, it was essential to ensure that the concerns of the Indian steel industry are addressed in those International Standards. This would require capacity building of industry for effective participation in such fora through training in the international standardization process and financial support for sustained participation in international technical committee meetings which formulate International Standards. He contemplated what role BIS, Ministry of Steel and Ministry of Commerce can play in this regard.

Streamlining Implementation of Standards through QCOs

Mr. XYZ was wondering whether improved focus on enforcement by BIS on products under steel QCO, specially on smaller manufacturers without punitive intent will also help in increasing Indian exports. Small-scale manufacturers had a large contribution towards total steel production. He was still not sure whether quick standards formulation and their implementation through QCOs would be sufficient in increasing Indian export or some handholding by the Government would also be required.

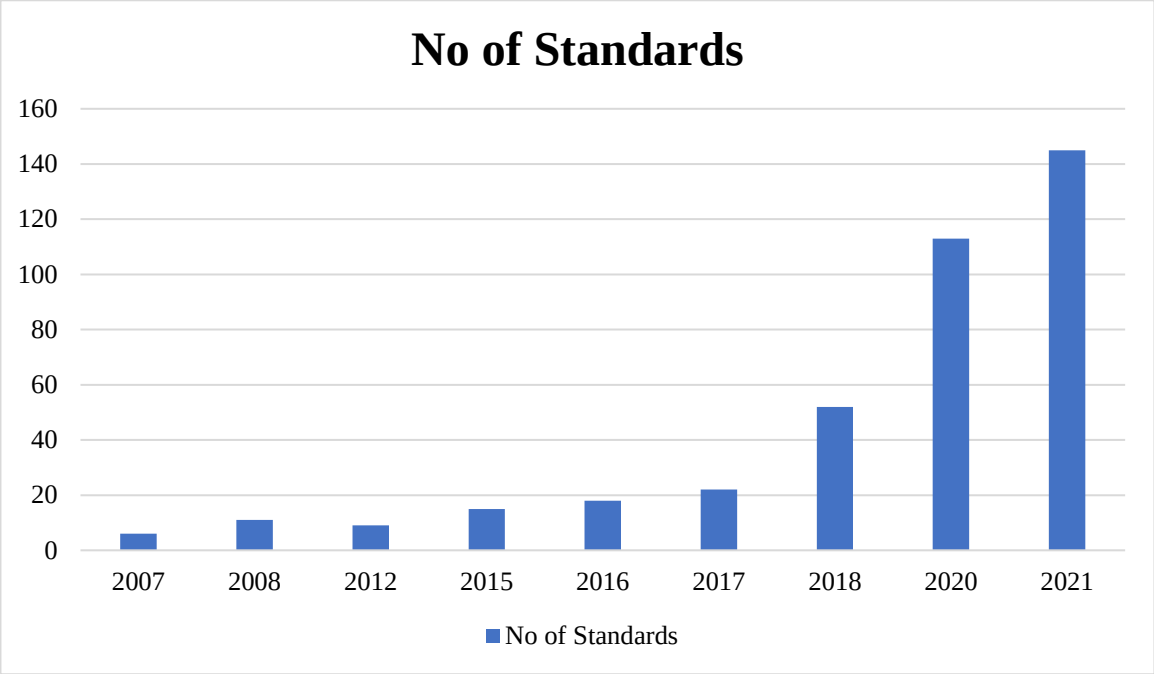
Exhibit 1
Government Initiatives

Some recent Government initiatives in this sector are as follows:

Under the Union Budget 2020-21, the government allocated Rs. 39.25 crore (US$ 5.4 million) to the Ministry of Steel.
In January 2021, the Ministry of Steel, Government of India, signed a Memorandum of Cooperation (MoC) with the Ministry of Economy, Trade and Industry, Government of Japan, to boost the steel sector through joint activities under the framework of India–Japan Steel Dialogue.
In December 2020, the Minister for Petroleum & Natural Gas and Steel, Mr. Dharmendra Pradhan, has appealed to the scientific community to Innovate for India (I4I) and create competitive advantages to make India 'Aatmanirbhar'.
In September 2020, the Ministry of Steel prepared a draft framework policy for development of steel clusters in the country.
On October 1, 2020, Directorate General of Foreign Trade (DGFT) announced that steel manufacturers in the country can avail duty drawback benefits on steel supplied through their service centres, distributors, dealers and stock yards.
Government introduced Steel Scrap Recycling Policy to reduce import.
An export duty of 30% has been levied on iron ore^ (lumps and fines) to ensure supply to domestic steel industry.
Government of India's focus on infrastructure and restarting road projects is aiding the demand for steel. Also, further likely acceleration in rural economy and infrastructure is expected to lead to growth in demand for steel.
The Union Cabinet, Government of India approved the National Steel Policy (NSP) 2017, as it intend to create a globally competitive steel industry in India. NSP 2017 envisage 300 million tonnes (MT) steel-making capacity and 160 kgs per capita steel consumption by 2030-31.
The Ministry of Steel is facilitating setting up of an industry driven Steel Research and Technology Mission of India (SRTMI) in association with the public and private sector steel companies to spearhead research and development activities in the iron and steel industry at an initial corpus of Rs. 200 crore (US$ 30 million).
The Government of India raised import duty on most steel items twice, each time by 2.5% and imposed measures including anti-dumping and safeguard duties on iron and steel items.
Road ahead
The National Steel Policy, 2017 envisage 300 million tonnes of production capacity by 2030-31. The per capita consumption of steel has increased from 57.6 kgs to 74.1 kgs during the last five years. The government has a fixed objective of increasing rural consumption of steel from the current 19.6 kg/per capita to 38 kg/per capita by 2030-31.
As per Indian Steel Association (ISA), steel demand will grow by 7.2% in 2019-20 and 2020-21.
Huge scope for growth is offered by India's comparatively low per capita steel consumption and the expected rise in consumption due to increased infrastructure construction and the thriving automobile and railways sectors.

Exhibit 2

DATA ON INDIAN STANDARDS BROUGHT UNDER COMPULSARY BIS CERTIFICATION IN LAST 14 YEARS



Source: https://steel.gov.in/quality-control-orders-archive

Exhibit 3

Import and Export Data of Iron & Steel: *Export*

Year	Total Steel (Semi + Finished in '000 tonnes)	Total Steel Value (Rs. crores)
2009-10	3876	15206
2010-11	3987	18433
2011-12	4789	21946
2012-13	5512	26912
2013-14	6471	31315
2014-15	6235	31283
2015-16	4718	24083
2016-17	9434	38182
2017-18	11614	52812
2018-19	8544	40900
2019-20	11183	45102

Import and Export Data of Iron & Steel: *Import*

Year	Pig Iron (in '000 tonnes)	Total finished steel (non-Alloy + Allow/Stainless)	Total Value (Pig Iron + Steel) (Rs. crores)
2009-10	11	7382	25983
2010-11	9	6664	26996
2011-12	8	6863	27017
2012-13	21	7925	39347
2013-14	34	5450	30525
2014-15	23	9320	44994
2015-16	22	11711	45066
2016-17	34	7224	34277
2017-18	16	7483	39544
2018-19	67	7835	49368
2019-20	11	6768	44722

Source: JPC; https://steel.gov.in/development-indian-steel-sector-1991