

ROLE OF QUALITY CONTROL IN STEEL AND STEEL PRODUCTS

A C R Das

Ex Industrial Adviser

Ministry of Steel

Government of India

CONFERENCE ON INDIAN STEEL QUALITY STANDARDS

New Delhi

12.07.2019

Importance of Steel and its Quality

- Steel is one of the most important and uniquely **versatile material** with **unique properties** which makes it suitable for use in any sector of the economy, viz. building & infrastructure, Engineering, automotive, Transport , white-goods, Ship building, Defence, energy & power generation etc.
- Steel Production across the globe is increasing and last year, total crude steel production was 1808 million tonnes.
- India's production is also on growth path and last year, our crude steel production crossed 106 million tonnes. Consumption of Finished steel also increased @7.5 % to 97.5 million tonnes.
- These figures summarily establishes the importance of steel vis-à-vis other material, in any economy.
- To ensure that the steel meets the requirements of customers, steel must meet the minimum Quality parameters specified by the standard.
- Adherence to quality standards also helps in achieving the Zero-Defect objective of Hon'ble PM to make India a global manufacturing hub for production of world class products.

Quality Steel Production-Role of Technology & Raw Material

- Steel is a iron based material, having a carbon content normally less than 2% and containing other elements.
- In steel making process (from iron ore/scrap), impurities such as Si, P, S etc are removed and alloying elements are added and processing techniques adopted to assure production of different quality steel products that meet the standards specification and customer requirements.
- **Manufacturing & Processing Technologies** and **Raw Material Quality** play important role to get desired quality steel products.
- Today, there are more than 3500 types/grades of steel with different physical, chemical and metallurgical properties as covered under different Standards.

Standards: Key to Quality & Quality Control

- Standards are **Documented Agreements** containing **Technical Specifications** or other criteria **to be used consistently** as Rules, Guidelines or Definition of Characteristics to ensure that the product /service are fit for the purposes.
- AS per ISO, Standards are **established by consensus** and **approved by a recognised body**.... Standards should be based on the **consolidated results of science, technology and experience** and aimed at **promotion of optimum community benefits**.
- Accordingly, Standards once formulated are amended/revised from time to time depending upon the change in technology and end use requirements.
- Standards exist at Company , National, Regional and ISO level .
- Standards, whether National or International, are **Voluntary** Documents, unless its adoption is made mandatory under any law or act.

Steel Standardization & Certification Framework

- In India, **Bureau of Indian Standards (BIS)** is the National Standards Body, set up under the BIS Act for development of standards, conformity assessment/quality assurance.
- National Standards established and **published** or **recognised** by BIS are called **Indian Standards**. BIS also **adopts certain standards** and publish them as Indian Standards.
- Besides, BIS also operates a **Product Certification Scheme** aiming at providing Third Party Assurance of Quality , Safety and Reliability of products to customers.
- Presence of BIS **Standard Marks** on a product is an assurance of conformity to the Standards. Under the scheme, Mfgs (In India & Abroad) are authorised to self certify a licensed product and BIS maintains regular Surveillance.
- Like Adoption of Indian Standards, marking products to bear BIS Standard Mark is **voluntary** unless it is made mandatory under specific provision of BIS Act.
- Under Section 16 of BIS Act 2016, Central Govt may mandate conformity of a product to a standard and bear Standard Mark on it under a licence from BIS n Public Interest.

Indian Standards & Steel Quality Control Orders

- BIS has published over 140 product standards on various steel and steel products.
- 53 standards/products notified under the quality certification marks scheme of BIS to mandatorily conform to the relevant Indian standards and bear Standard Mark under a licence from BIS.
- These constitutes 80-85% of total steel consumption in the country. By and large, all major non-alloy and stainless steel products have been covered leaving mostly alloy/special/niche steel products.
- Order applies to both Domestic Production and Imports and Foreign Mfgs are also required to obtain BIS Licence.

Genesis of Steel Quality Control Order

- The genesis of quality control of steel products dates back to **Public Notice** No. SC(C)-2(44)/63-II dated 4th January, 1965 and Public Notice No. SC(I)-2(44)/63-IV dated 26th March, 1971 issued by the MoS under the Steel Control Order, issued under the Essential Commodities Act covering 33 steel products.
- **DGFT Notification** No. 44 dated 11 Nov,2000: notified the 33 products to conform to IS when imported to India. Not found WTO friendly and withdrawn.
- Steel and Steel Products (Quality Control) Order,2007 issued by **Department of Consumer Affairs (DCA)**: Notified 17 (out of 33) steel products of which Order enforced on 7 products and 10 omitted.
- steel and Steel Products (Quality Control) Order, 2012 and Second Order,2012 issued by **Ministry of Steel**: Re-notified 7+9=16 products (in supersession of DCA Order).
- Orders amended, new products added from time to time and today, there are 53 products under the Quality Control Regime.

Legal Provisions and Implications

- Notified Products must **conform** to the relevant Indian Standards and **bear** Standard Mark of BIS.
- Production, import, storage, sale, distribution of notified products without BIS Mark prohibited.
- Sub-standard products not conforming to Indian standards to be disposed of as **Scrap**.
- Producers required to obtain **licence** from BIS for using Standard Mark of BIS on their products.
- Order applies to import as well as indigenous production and producers abroad are required to obtain BIS licence to use standard marks on licensed products under **FMCS scheme**, before exporting to India.
- BIS empowered as the **Certification and Enforcement authority** for implementation & enforcement of the Order.
- Provides **penalty** for contravention of the Orders under Section 29 of BIS Act.

Steel Quality Control Order: Aims/Objectives

- QCOs of 2007/2012: Products having direct bearing on human health & safety and critical to housing/construction/infrastructure were covered.
- Products cover TMT bars & Structural steel, boiler/pressure vessel quality steel plates, electrical steel sheets etc.
- 2015 and subsequent orders: Special Steel mainly for safety and security of engineering /automotive applications , particularly to restrict deceptive trade practices.
- Background Objective: **Making available Quality Steel products to consumers-** direct or indirect.
- QCOs also **empowers the Consumers** at large to take legal course against supply of sub-standard /defective steel products.

Problems & Issues and Way Forward

- *Amendment/Revision of old Indian Standards to meet need of hour.*
- *Prevalence of production/supply of notified steel products (TMT & Str Steel) without Standard Mark.*
- *Technological limitation of IF Units to refine steel to remove phosphorous present in inputs like DRI and Shortage of Scrap.*
- *Non-availability of in-house Testing Facilities/Qualified Quality Control Managers/staff.*
- *Use of Ship Breaking Steel Scrap for production of Steel.*
- *Disposal of Sub-standard steel products by steel plants.*
- *Import of Substandard/Seconds/Defective /Used steel products as Steel Scrap.*
- *Rationale of QCO on Steel, being intermediate products*

THANK YOU

Website: www.steelinds.in