

PROMOTION OF STEEL USAGE

Why steel?

In today's ecologically aware times, steel wins hands down over wood and plastic. In earthquakes and bad weather, steel offers safety. Where speed in construction is the key, steel stands tall.

Some advantages of steel include strength, energy efficiency, design flexibility, fire resistance, ease and speed of assembly, material cost advantage, less deterioration over time, less maintenance, high quality homes, better resale value, a cleaner work site with less wastage, straight and uniform walls, and eco-friendliness.

The consumption of steel has been identified as an indicator of economic well being of a country. It reflects the growth in infrastructure and the maturity of the manufacturing industry of a nation. The present per capita consumption of steel has been stagnating in the range of 30 kg. per annum, whereas countries like China have surged ahead. The per capita steel consumption in China is about 132 kg. per annum and it produces 220 million tonnes and imports another 30 million tonnes; the total consumption being 250 million tonnes. However, steel consumption and production in India is approximately 30 million tonnes. This huge difference points to the need for strenuous efforts to promote steel consumption in our country, particularly in the rural areas where there is a tremendous amount of untapped latent demand. In order to give a thrust to steel usage particularly in the construction sector, the Ministry has promoted INSDAG on the lines of the SCI in UK. The Joint Plant Committee is also undertaking some promotional activities.

INSTITUTE FOR STEEL DEVELOPMENT & GROWTH (INSDAG)

The Institute for Steel Development & Growth (INSDAG), Kolkata was set up under the Societies Registration Act in 1996 with representation from SAIL, TISCO, Usha Ispat, RINL, JVSL, DCI&S and the Ministry of Steel. The Institute was set up on the lines of Steel Construction Institute (SCI), U.K. with a view to promote the usage of steel particularly in the construction sector. It has about 17 professionals including architects, designers, engineers, etc. who are initially concentrating on promotion of steel in construction by developing typical steel intensive designs &

technical support, design guidance handbooks and manuals and standards, life cycle cost studies, codes and standards, education and training including seminars and workshops as well as student award schemes. The Institute has about 800 members and it is presently receiving support from the JPC. It intends to be self-sustaining in a few years. A brief description of INSDAG's activities for promoting steel are given below :-

- i) **Typical Steel Intensive Designs & Technical Support** – INSDAG has developed several typical steel intensive designs; to name a few, multi storey steel framed residential buildings, steel intensive rural housing and schools, CRCP (Continuously Reinforced Concrete Pavements) roads, pressed steel water tanks, steel form work and scaffolding, steel framed puja pandals, steel intensive bus stands and bus terminus, rural foot bridges and culverts.
- ii) **Design Guidance Handbooks and Manuals** – Several handbooks, design guidebooks and manuals and refreshers for knowledge of structural engineers working for steel intensive structures have been prepared by INSDAG.
- iii) **Life Cycle Cost Studies** – INSDAG has completed life cycle cost studies for several structures like flyovers, bridges and buildings, stadiums, RCC roads, multistorey residential buildings etc.
- iv) **Codes & Standards** – INSDAG is instrumental in revision of several steel related Codes to incorporate modern design concepts and to make them more reliable and efficient. Drafts for important Codes like IRC-22: IRC-24, IS-800, IS-12778 has been almost completed. Without proper Code revision, steel application is difficult.
- v) **Education & training** – For upgrading skills and know-how and for creating awareness among potential users, besides spreading knowledge on steel based designs through its publications and advisory services, INSDAG has taken a 4 prong approach.
 - a) **“Refresher Courses” for Professionals** – 33 numbers held so far in different cities.
 - b) **6-days Short Term Training Programme (STTP) on Structural Steel Design** for Engineering faculty, with the objective to equip the students

with proper knowledge on use of steel are being conducted by INSDAG – 10 STTPs already conducted.

INSDAG has developed a Comprehensive Teaching Package on Steel Design for engineering college students in civil structural engineering. Efforts are on to include it in the syllabus of all engineering colleges, so that faculty and students are conversant with new concepts like limit state design, composite construction earthquake resistant design, etc.

- c) **Seminars** – INSDAG conducted nine seminars so far on topics related with new concepts of steel design and erection technology. One important National Seminar on Corrosion Protection of Steel Structures is planned to be held in December, 2004 in collaboration with NML, Jamshedpur.
- d) **Students Award Scheme** – To recognise students and professionals for their innovation and creativity in steel design / application, INSDAG conducts various competitions at the national level for the students of architecture (Architecture Award) and students of civil engineering (Civil/Structural Award) on an annual basis. So far, 4 architecture awards and 3 civil award competitions have been held. INSDAG has started an award scheme from the year for professionals for the best structure done in India using steel.
- vi) **Membership and Advisory Services** – INSDAG membership is growing day-by-day. Present figure has crossed 800 members. INSDAG's website acts as a storehouse of information, available free of cost. Queries are answered within 48 hours in most of the cases. On an average, 35 queries are answered per month on issues like steel sourcing, design guidance, corrosion protection, welding of steel, fire protection, etc.
- vii) **Marketing Initiatives** – Several marketing initiatives have been taken by INSDAG. For example, INSDAG is trying hard to introduce steel in all future Airports in the country. Preliminary design for a terminal building for Vizag Airport was submitted and series of meetings were held with decision making authorities at Airport Authority of India Ltd. Managing Director, Konkan Railways has been persuaded to construct all 8 railway bridges on the Jammu-Baramula sector of steel. The Border Roads Organisation and Sulabh

International have also been approached for adopting the steel option in their projects.

JOINT PLANT COMMITTEE (JPC)

The Joint Plant Committee (JPC) has been undertaking the following activities for promotion of steel usage in the country ;-

- (i) **Metal bin promotion and distribution** – The JPC provides subsidy @ 25% for construction of metal bins for storage of grains under the Save Grain programme. Presently, about 26,000 bins have been distributed in 8 States under the programme.
- (ii) **Rural marketing** – The JPC has been trying to promote usage of steel in rural housing, construction of agricultural implements, rural public health engineering and irrigation channels. An initial meeting was held with Rural Development Secretaries of States but this initiative has still to take shape.
- (iii) **Rural industrialisation** – JPC is helping in the establishment of rural fabrication centres through promotion of training and supply of essential tools and equipment. One project is under way in the State of Jharkhand.
- (iv) **Cycle trolley** – In association with SRI, Ranchi and TISCO, a training programme has been successfully completed for encouraging construction of cycle trolleys in the rural areas.
- (v) **Promotion of steel truck body** – Initially, the work has been started with Ashok Leyland for design of steel truck body. The programme is scheduled to be completed in 2004-05.
- (vi) **Misc. works** – JPC is also trying to promote use of steel in cyclone relief centres, GP Water tanks and generally popularise use of steel as a versatile product.

STEEL AUTHORITY OF INDIA LIMITED(SAIL)

SAIL has appointed authorised dealers for specified products to widen the reach of such products to a larger section of customers spread across the country. The products currently being sold to authorised Dealers are Tor / TMT, GP/GC Sheets and structurals. During the period April 2003 – March 2004, 87 authorised dealers spread over 40 locations were able to sell over 627 thousand tonnes of steel materials.

- **Tapping Rural Market**

In order to reach SAIL products to the vast untapped market in the rural segment and to improve its market share, SAIL has established distribution outlets in the rural areas by appointment of Rural Dealers at specific locations. The items presently being covered under the scheme are TMT Bars / Tor Steel, Wire Rods, Light Structural, GP/GC and HR/CR Sheets. During the period April 2003 – March 2004, about 48 thousand tonnes of materials were sold through 117 Rural Dealers at 93 locations.

- **Focus on High Value Steel Products in Domestic Market**

In order to develop a niche market, SAIL is trying to focus on the following high value products

End Use

Products	End use
Plates	Boilers, Pressure Vessels, Plant & Machinery for bridges, Industrial & Commercial Structure, Galvanising Pots, Ship Building & Railways
CR Coils & Sheets,	Automobile Components, Bicycle Components and White goods, Drums and Barrels, Corrosion Resistant steel for Railways and others
Pipe & Tubes	Cylinder Manufacturers, Pipe manufacturing for Petroleum Products, Transmission Towers, Corrosion Resistant products
Construction	Steel for Construction in Coastal Regions
Rails	For Indian Railways
Wire Rods	For Electrodes

Promotion of steel in construction segment

SAIL in association with INSDAG is promoting the advantages of steel in the construction segment.

TATA IRON & STEEL COMPANY (TISCO)

Tata Steel has formed the **Construction Solutions Group** to look into the possibility of offering steel intensive solutions to the construction sector; communicating the benefits of such solutions, and developing a supply chain to service the needs that emerge.

In view of the acute housing shortage in the country, Tata Steel has embarked on a project to offer aesthetic, low-maintenance, quick construction, steel intensive buildings. It has signed an MOU with Minaean Habitat (India) Ltd. (MHI), a wholly owned subsidiary of Minaean Ventures of Canada, an established name in this form of construction. Based on this form of construction, Tata Steel has started its application in its own backyard with the completion of a series of buildings – a community hall and two bungalows. The Construction Solutions Group, there after, has ventured out of Jamshedpur and are pursuing projects in different parts of the country.

Alongside this, Construction Solutions also offers products in the Economy Segment of the housing sector targeted specially at the Rural requirement for housing and safe grain storage in steel. In this segment, Construction Solutions offers quick build and economical steel houses and steel bins and silos.