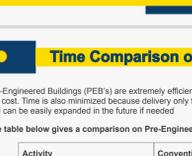


DIRECTOR'S EPISTLE


Arvind Nanda
 Founder Director & CEO

Gautam Suri
 Founder Director & CTO

Dear Readers,

We hope you all had a great time this festive season. In this edition of the newsletter we wanted to highlight the reader, how time can be saved using pre-engineered steel buildings. We have also focused on how fire protection is done in steel buildings and how customer can ensure quality of raw materials.

Thanks & Regards,

Arvind Nanda & Gautam Suri

Time Comparison of Pre-Engineered Buildings V/S RCC construction

Pre-Engineered Buildings (PEB's) are extremely efficient to produce and quick to construct. They offer very good architectural design can easily be achieved at a low cost. Time is also minimized because delivery only takes an average of 6 to 8 weeks. The erection process is fast and easy & furthermore PEB's are flexible and can be easily expanded in the future if needed.

The table below gives a comparison on Pre-Engineered Buildings Saves Time over RCC construction:

Activity	Conventional RCC / Site fabrication system (A)	Pre-engineered steel Building system (B)	Time Saving (A-B)
Finalization of Building concept and layout	4 weeks	2 weeks - with inputs from PEB company.	2 weeks
Preparation of approval drawings	2 weeks	2 weeks	Nil
Preparation of BOQ & fabrication / site execution drawings	6 weeks	2 weeks	4 weeks
Sourcing of material	6 weeks	Nil with existing plant inventory.	6 weeks
Actual Fabrication / Construction at site/plant	10 weeks at site	6 weeks under controlled plant environment.	4 weeks
Final Site execution	14 weeks	10 weeks	4weeks
Total Schedule	42 weeks	22 weeks	20 weeks

* Time & Schedule Comparison between pre-engineered steel building and conventional method of construction: For a 50000sqft warehouse or factory building: (Does not include foundations and other associated works)

Reduce Pollution by Using Pre-Engineered Steel Buildings:

One of the major concerns which is disturbing us is the air pollution quality in major cities, it is causing irreparable harm to us and our families.

Air Pollution rises due to RCC Construction

Construction activities that contribute to air pollution include: land clearing, operation of diesel engines, demolition, burning, and working with toxic materials. All construction sites generate high levels of dust (typically from concrete, cement, wood, stone, silica) and this can carry for large distances over a long period of time. Construction dust is classified as PM10 - particulate matter less than 10 microns in diameter, invisible to the naked eye.

Research has shown that PM10 penetrate deeply into the lungs and cause a wide range of health problems including respiratory illness, asthma, bronchitis and even cancer.

However in case of a Pre-engineered steel building technology concrete, cement and other harmful material are not used and fabrication is done in controlled environment inside a factory where it does not cause any pollution.

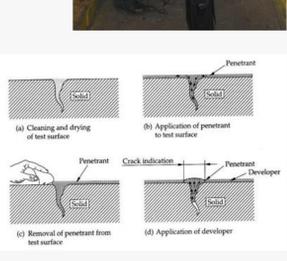
Minimal site nut and bolts are used for erection, hence causing almost negligible or very minimal pollution to air in comparison to RCC construction. This is one of the main reasons why almost all construction activities in countries like US, UK, Australia, and New Zealand etc. are done using steel buildings.



Quality Control at Interarch : Testing of Raw Materials before Manufacturing

The materials used in manufacturing are first tested to ensure the quality and strength of impeccable standards. Some of the materials testing methods which are used are as follows:

- Ultrasonic Testing:** It is a non-destructive testing (NDT) method in which beams of high frequency sound waves that are introduced into the material being tested are used to detect surface and sub-surface flaws. The sound waves travel through the materials with some attenuation of energy and are reflected at interfaces. The reflected beam is detected and analyzed to define the presence and location of flaws. Cracks, laminations, shrinkages, cavities, burrs, flakes, pores, bonding faults and other discontinuities can easily be detected.
- Liquid Dye Penetrant test:** Dye penetrant inspection (DPI), also called liquid penetrant inspection (LPI) or penetrant testing (PT), is a widely applied and effective method used to locate surface-breaking defects in all non-porous materials (metals, plastics, or ceramics). LPI is used to detect casting, forging and welding surface defects such as hairline cracks, surface porosity, leaks in new products, and fatigue cracks on in-service components.
- Visual test:** This is a general inspection process by the inspection engineer who carefully analyzes the material visually and by sampling techniques to ensure the quality of the material and avoid any defects.
- Coating thickness test of priming:** The coating undergoes several destructive and non-destructive tests to ensure the optimum coating thickness of the primer.



Project Spotlight – JSW Steels Ltd.

JSW Steel Ltd. is an Indian steel company owned by the JSW Group, one of India's largest business conglomerates, with a strong presence in the core economic sector based in Mumbai. JSW Steel, after merger of ISPAT steel, has become India's largest private sector steel company with an installed capacity of 14.3 MTPA. JSW has 6 manufacturing facilities in India Vijayanagar Works, Salem Works, Dohri, Visnadi, Tarapur & Kalmeshwar.



Project Name	Vijayanagar Works (JSW Steel Ltd.)		
Project Location	Toranagattu, Bellary		
Building Usage	ACL Service Centre		
Project Area	14500 Sq. M		
Building Tonnage	1500 MT		
Building	Area 1 (Main Building)	Area 2 (Main Building)	Area 3 (Lean To)
Width	72 M + 36 M	8 M + 14.5 M	8 M + 14.5 M
Length	144 M + 88 M	88 M + 16 M	88 M + 16 M
Height	13 M	6.5 M + 11 M	6.5 M + 11 M
Special Features	<ul style="list-style-type: none"> 36 m clear span Laced Column with multiple cranes from 15 MT to 30 MT capacity 8 nos. of cranes from 15 MT to 30 MT capacity 1 no. of mono rail considered with 5 MT capacity in full width of the building for hoist maintenance 8 nos. monorail maintenance platform with 6 mm checkered plate 800 mm projected steel bracket on every column to support utility pipes & cable tray having live load of 150 Kg/RMT 1000 mm walkway with opening of 450 mm*2100 mm in roof leg for man movement Crane Rail CR100 supplied and erected by Interarch Multiple mezzanine areas with live load from 150 Kg/m² to 1500 Kg/m² Mezzanine area of 296 Sq. M considered on Lean to Building with live load of 1000 Kg/M² & additional load of 150 Kg/M² on beam and joint for false ceilings 1 M height fascia considered all around building 3 nos. of rafter considered from rafter in each width module to support electrical light fixture of self-weight 15 Kg 150 mm wide stiffeners @ 1000 mm spacing considered in crane beam to support DSL Crane beams with knife edge arrangement Diagonal Angle bracing, X-Bracing & Portal bracing considered 0.80 mm TCT Hi-Rib sheet in roof in single length of 54 m with site roll forming 		



FAQ for Pre-Engineered Steel Multi-Storey Buildings: How is fire protection done in Tall Steel Buildings?

Pre-Engineered Steel has now become the most preferred framing material for multi-storey buildings, with proven sustainability benefits. Steel can be naturally recycled and re-used, and offers a wide range of additional advantages such as health and safety benefits, speed of construction, quality, efficiency, innovation, off-site manufacture and service and support.

Tall steel buildings require fire protection for the primary framing. There are various coatings & techniques available which can be used to provide fire protection to the steel structure. The material is chosen as per the requirement and usage of the buildings; for example fire rating (in hours) for multistoried car parking would be less than that for an office building.

Depending on the fire rating requirement the following methods can be used to achieve desired fire rating:

- Intumescent coatings/paints
- Vermiculite Spray
- Boards (Gypsum/Cement) encasing
- Encasing of steel structure with concrete

1. **Intumescent coatings** are paint like materials which are inert at low temperatures but which provide insulation as a result of a complex chemical reaction at temperatures typically of about 200-250°C. At these temperatures the properties of steel will not be affected). As a result of this reaction they swell and provide an expanded layer of low conductivity char that insulates the steel section. Typical expansion ratios are about 50:1, i.e. a 1mm thick coating will expand to about 50mm when affected by fire.

Intumescent coatings can be applied either on-site or off-site and can be used to achieve attractive surface finishes. If a decorative or bespoke finish is required, this should be included in the specification. Thin film intumescent has the added advantages that they can easily cover complex shapes and post-protection service installation is relatively simple



2. **Vermiculite Spray** is a tough, hard and highly stable passive fire protection coating applied to structural steel by spraying. Low pressure spray applied commercial and industrial structural steel fire protection products use exfoliated vermiculite to improve the application characteristics and to impart a high degree of fire resistance.

Exfoliated vermiculite is very efficient at retaining moisture, and in the event of a fire this turns to steam which has a cooling effect on the steel substrate and thus delays its temperature rise. Vermiculite concentrate is also used in the production of fire resistant gypsum plasterboard (drywall or wallboard).



3. **Gypsum/Cement boards** are being effectively utilized as fire protection system in steel buildings and are easy due to providing up to 180 minutes fire resistance to structural steel columns and beams. Installation is quick and easy due to the use of simple clip fixings to secure the framing sections. The system will protect column and beam sections with flange thicknesses between 6mm and 28mm.



4. **Concrete** is a mixture of cement, mineral aggregates, sand, and water. Its ability to delay the transfer of heat can be utilized to protect structure through exterior encasement of the section. However it provide rating for less time

Interarch Young Builder Program:

Young Builder Program gives an insight and educates Young Architects & Engineers about the Indian Pre-Engineered Steel Industry, various applications & nomenclature of Metal buildings.

Interarch conducted Young Builder Program for the students of Sharda University, Greater Noida on 18 Nov '15 followed by Site visit. The session was conducted by Mr. Sandeep Koul (AVP of Sales & Marketing).



Customer Testimonials:

We appreciate the effort put in by Interarch at all stages, resources dedicated and cooperation extended for the satisfactory and timely completion of the project. We wish them success for all their future assignments.



For M/s. SAB Miller India Ltd.

(Name)
(Seal)

New Projects Wins

- Asian Paint Ltd in Harjaya
- Hindustan Unilever Ltd in Rajasthan
- Apollo Polyvinyl Pvt Ltd in Tamil Nadu
- Chiripal Industries Pvt Ltd in Gujarat
- Alok Bansal & Vijaya Bansal in Madhya Pradesh



Projects Completed

- Tata Motors Limited in Maharashtra
- Ashirvad Pipes (P) Ltd. in Karnataka
- Glenmark Genetics Ltd. in Madhya Pradesh
- Continental Conveyor in Rajasthan
- Surin Automotive Pvt. Ltd in Tamil Nadu



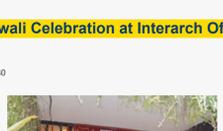
Did you know : How many buildings has Interarch Building Products delivered for the Automotive Sector across India

- 100-200 buildings
- 200-400 buildings
- 400 - 500 buildings
- Above 500 buildings

Kindly log on to <http://www.facebook.com/interarchbuildings> and provide the correct answer

Diwali Celebration at Interarch Offices and Plants

Head Office – B-30



Pant Nagar, Kichha Plant & Chennai plants



Event Participation: Interarch Participated at Excon'15 in Bangalore



Health Tip: How to take care during winters

- Boost Immunity
- Exercise Regularly
- Eat Healthy
- Protect your Skin
- Avoid Alcohol & Smoking
- Stay hydrated

Tech Zone –Role of Network in Organization

- To Protect Company's Assets
- To Comply with Regulatory Requirements and Ethical
- Responsibilities
- For Competitive Advantage
- For Cost reduction by sharing
- To secure success of the organization



