METCON STEEL update

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Quest for quality

ISI made a must for steel bars. But it is not enough

With the construction industry clocking an unprecedented rate of growth in India, the Central government has decided to enforce quality in building materials, especially steel rebars. As a first step, the government has issued a notification making it mandatory for 17 steel products to have the ISI mark. "Seventeen varieties of steel products must have ISI certification to conform to specified standards, failing which the steel producers would be punished under the Bureau of Indian Standards Act 1986," says the notification.

The materials include semis for re-rolling, long products used in infrastructure and construction, steel plates for pressure vessels and boilers, electrical steel sheets for electrical machines and tinplates for packaging food products.

The move is expected to tidy up the market, what with the players who seek to make a fast buck from the booming market being forced to either leave the scene or go in for quality improvement.

But experts say the move is too little, too late. "The government move is welcome and the BIS must ensure that all the products that reach the market conform to quality norms," says T M Behanan, a civil engineer and consultant to the steel industry. "But unfortunately, many products which have ISI mark do not pass the quality test."

The best way for a consumer is to go for a brand that he believes in. "With the regulatory mechanism in India not up to the desired level, consumers, who are building their dream structures, may go in for a brand which they value most," says Behanan. This is because branded products have to protect their standing in the market to ensure customer loyalty. They also invest in the latest technologies and go in for product upgradation to bring the latest to the benefit of the customer.

There are many ways for a customer to ensure quality. "Any engineering college with a civil engineering department can do a test to determine the quality of the rebar at nominal cost. Considering the importance of the quality in the longevity of construction, the cost involved would be negligible," says Behanan.

> When the poor quality rebar corrodes, the oxidation products (rust) expand and tend to flake, cracking the concrete and unbonding the rebar from the concrete.

To understand why quality is so important, one must also understand the role steel rebars play in the durability of concrete. Concrete has high compressive strength but little tensile strength. That is, it cannot stand forces applied laterally. Steel rebars in concrete make up for this, imparting tensile strength to the concrete structure. If the quality of steel is not up to the mark, the tensile strength will also be affected, and concrete will crack when a lateral force, such as an earthquake, is applied.

Rebars should also be immune to corrosion. When a rebar corrodes, the oxidation products (rust) expand and tend to flake, cracking the concrete and unbonding the rebar from the concrete. This would also result in the failure of the structure.

"For us, quality is key to our product strategy," says Mr Kurian Varghese, Managing Director of Metrolla Steel, manufacturers of Metcon brand TMT steel. "We have found that it pays to invest in technology, especially in a state like Kerala where consumers are conscious of their rights and are willing to make no compromise on quality."

What does the steel do in concrete?

Concrete is a mixture of cement and stone aggregate. When mixed with a small amount of water, the cement hydrates to form a microscopic opaque crystal lattice structure encapsulating and locking the aggregate into its rigid structure. It has high resistance to compressive stresses but will crack under tension.

Steel, with high tensile strength, is placed in concrete to make reinforced concrete. In it, the concrete resists the compression and steel resists the tension.

If the quality of steel is poor, then its ability to absorb tension will be impacted, resulting in the cracking of concrete under tensile forces.

"We'll arrange for the demolition of this nalukettu," said Appunni, the protagonist in the epochal Malayalam novel to his mother. "We will have a small house which allows air and sun." The Appunni syndrome caught a generation of Malayalees who said goodbye to all that was good about Kerala architecture, says Jayan Bilathikulam, the renowned designer. The present design tries to blend the old and the new, ending up as a shapeless one criminally wasting resources and comforts. Jayan points out the blunders that Malayalis commit while building their dream homes. You may agree or disagree, but listen to him. It's worth the while.

Building Blunders

House of dreams

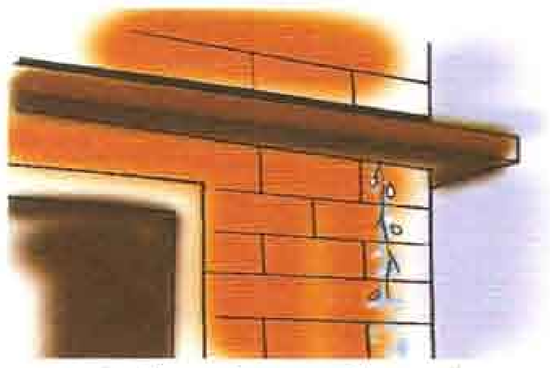
I will sacrifice anything to build my dream house.

People come to me demanding comforts that they will never use. Their argument is simple: I build only one house in my lifetime, and I do not want to compromise. They go for all kinds of extravaganza. In the end, the budget shoots up, making them debtors for the rest of their lifetime. In some cases, they have to sell their dream houses off to pay off the creditors. The dream house, or even a house, will remain a dream.

SOLUTION: When you dream, dream only practical dreams that your pocket also vets. You don't have to sacrifice anything for it. And they will remain with you.

Expensive low-cost house

I want to build a low-cost house. (At any cost!)



Low-cost housing advocates using locally available building materials and avoiding unnecessary structures; it does not prescribe a definite structure or design. But people often come with a set pattern and demand it. After the initial euphoria, problems set in, and peace of mind flees the place. This also illustrates Malayalis' herd mentality.

SOLUTION: Cut cost at the planning stage by incorporating the essentials and avoiding extravaganza. Don't try to announce to the world that it is a low-cost house.

The ubiquitous sunshade

Sunshades protect the windows, and add beauty to the structure.

Flat sunshades often have a small pipe to let the rain water out. After the first rain of the season, this pipe gets clogged and the water gets logged. Seepage begins, destroying the wooden windows below—the reverse of what is expected of it. There are accidents when people step on to the slippery sunshades to clean them. In extreme cases, there will be another structure just above the window, giving double protection!

SOLUTION: Make a slanting sunshade. The water will flow off. If you make a small tress work and then lay tiles on it, it will add beauty to the structure.

Window that never opens

The more the windows, the more natural it is.

Most windows have glass, which allow light and heat through. The more the glass, the more the heat inside the room. The middle door of the three-door window is seldom opened in Kerala. So it passes in heat, but no air, pushing up the room temperature.

SOLUTION: Always go for two-door windows if it is open to direct sunlight. And if possible, make the lower part a wooden one. If you can have a sliding wooden structure in the bottom half, it will let cool air in. The science: cool air rushes in more through narrow passes, than it does through big openings.

Flat or not

Flat roof results in seepage. Let me go in for a slanting one.

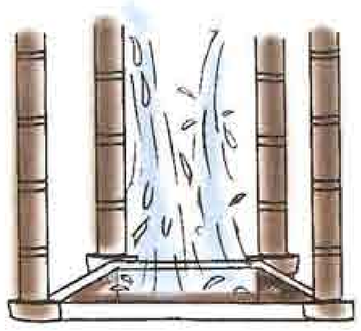
Concrete is a mixture of sand, granite, an adhesive agent like cement and water, along with steel rebars. Of these, water and cement flow down when the mix is spread on the slanting surface, leaving the jelly and sand on top. This results in the early break up of the concrete. And, since there is no air gap between the roof and the room, the temperature shoots up in a hot climate. Even a fan is helpless; it can only move the hot air around.

SOLUTION: Go for a flat concrete roof with a super structure of slanting roof made of iron tress work and tiles.

The space on top is a bonus: the air column there brings down the temperature. It can be used as a storage space or for drying wet clothes. Its is bit costly, but if taken care of at the planning stage itself, then cost can be cut down.

Past gone awry

We want rain, and nature, inside.



We want to see rain inside the house, people tell me. They forget the fact that the nadumuttam was a creation of the agrarian culture of yesteryear. Now, when we have a nadumuttom for a two-storey building, water falls down from a height of 28 feet. It would not be the sweet sound of rain but a flood of rushing water. The splinters would ruin the balconies. After the first flood of rains, you want to get rid of the 'nature' and will go for a fibre covering for the nadumuttom. It will make matters worse, for the sound of rain falling on the fibre roof will make your life hell.

SOLUTION: I have coined the word side-muttam where you can have nature, instead of a nadumuttam. Design it in such a way that it gives the feel of a nadumuttam, with-out the attendant ills.

Jumbo cabinets

I want my kitchen to look modern.

People fit kitchens with layers of cabinets, made of either costly wood or low-cost engineered wood which decays after some time. Most of these cabinets are never occupied. And the doors go out of shape in the course of time, allowing insects inside.

SOLUTION: A Kerala kitchen uses less than 50 items. All you need is a PET bottle for each of them, and not cabinets. Make one flat slab where you can keep them, and see the relief in the kitchen.

Floors that floor people. Virtually

My house should look like a mirror.

It might sound like an exaggeration if I say the number of floor accidents closely follows road accidents in Kerala. We go for ultra smooth floors even in bathrooms and kitchens, the places which have a high probability of being wet.

SOLUTION: Go for tiles with a grip. At least in the kitchens and bathrooms.

Guest room, waiting

It adds prestige to have a room for the guest.

New houses, especially those in the towns these days, have an addendum-- a guest room. In practice, even ghosts don't visit this special room on which we spend lakhs of rupees.

SOLUTION: Evaluate the need based on your guest arrivals. Make guests happy with your warm behaviour, and not with extravaganza. They won't mind being accommodated in a regular room.

Dust factory

I don't want to dispose old belongings. Let them be with me.

The slab will still keep the old radio your grandfather used. Old mixies, tri-wheeler cycles... the place will be stacked with stuff which you will never use again. It will now act as a virtual factory of dust, and you will never be able to keep your room clean with healthy air.

SOLUTION: Inculcate the habit of disposing unwanted stuff. If you have sentimental attachment to an article, keep it in good condition in the living room; let people appreciate it. Don't stack them in your bedroom. The slanting roof mentioned above will be an ideal storage space.

Store room. For what?

It's a place where we will keep our essentials.

Kerala's agrarian economy demanded a place to store products like paddy, bananas and tubers. These days, we buy them from the supermarket as and when necessary. For keeping 10 kg rice, we need not build a storeroom.

SOLUTION: Let the supermarket be our storeroom.

The balcony trap

We want to enjoy the space outside.

I have seen houses with a balcony for every room in the first floor. In practice, the doors to these balconies are never opened. In the rare case when one uses it, the response from the neighbour will not be so encouraging. The result: valuable space which could have been used for practical purposes is wasted.

SOLUTION: Build balconies only when you are sure of the view outside, and have the practice of using them.

Staircases for elephants

Staircase adds to the beauty, so let's go for the best.

Most houses have staircases built with 6-inch concrete. This would be enough for an elephant to strut around. The maximum load the stair carries at a given point in time is less than 200 kg. This is because a lot of our residential building norms are based on PWD framework, prepared for public places. Remember, the wooden stairs even in colleges have lasted more than a century.

SOLUTION: Use a combination of steel and wood for the staircase. It will be very elegant and cost effective. If you go for a concrete one, cut the concrete in it.

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Kitchens à la mode

Not convinced by designer Jayan's ideas? A guide for those who prefer modular kitchens

A kitchen is no longer a place where the woman of the house toiled for hours on end, making meal after meal. It now doubles up as a mini dining space for quick snacks or breakfasts and as a home work supervision area (while mom is making dinner). With open kitchens becoming the norm, the kitchen can longer afford to look or smell bad. Modular kitchens emerged to offer a perfect option, and more and more people in Kerala are now turning to it for fulfilling the new age demands of this space.

A modular kitchen is essentially made up of several modules or units, for the floor and wall, pre-fabricated in a huge array of materials. The units are usually deep to house electrical appliances and kitchen utensils of varied shapes and sizes. Irrespective of the size and make of the kitchen, most people go for wood and laminate for the cabinets and shutters, and sturdy material like marbles or granite for the worktops.

The trend started more than 10 years ago, says interior designer Nirmala Nair, and the demand has been going up ever since. There are several national and international players in the modular kitchen arena like Donna Rossi, Hacker Kitchens, Godrej Interio and Prestige. Prices of an entire kitchen vary widely among the various models and companies. Prestige caters to the value-for-money segment; its cost for a 10 ft x 8 ft modular kitchen would work out to Rs 1 lakh, including a chimney and hob. On the other hand, a basic model from Hacker for the same area would cost nearly Rs 2 lakh. A 15 ft x 20 ft kitchen from Hacker could cost you a hefty Rs 15 lakh to Rs 20 lakh.

One can also opt to buy accessories and standalone modular fittings from companies like Hafele. The price of a chimney ranges between Rs 5,000 and Rs 90,000 while a burner can set you back by Rs 7,000 to Rs 90,000. "Here, people are willing to shell out Rs 2 lakh to Rs 3 lakh for a complete kitchen," says Nirmala.

Should you go for a branded one or a local make? "Cost, rectification, replacement and repair is easier if the kitchen is done up by a local player," she says. "Branded companies have their fixed designs, from which one has to choose. Many people in Kerala are apprehensive about using MDF material in kitchens as they prefer conventional hardwoods like teak. They are ready to try out laminated marine plywood as a second option, as it costs less."

How to go modular

Choose from, Hacker, Lispo, Godrej Interio, Prestige TTK

Cost (for 8ft x 10 ft area)

Rs 75,000 to Rs 4 lakh

Time taken

Branded modular kitchen companies take about 30 days after the order is placed to deliver the material to site. At site they need 3 to 5 days to assemble the whole kitchen. A local carpenter takes anything from three weeks to a couple of months. Remodelling by a carpenter takes even longer

Features of a modular kitchen

Soft-shutting/sliding cabinets, storage carousals that can turn around 360°, tempered glass shutters

Tip

For a utilitarian and aesthetic kitchen which is easy on the pocket, strike a balance between modular units and carpentry work done locally. A good interior designer can help you with this

Doing up your kitchen? There are tips that can make your job worthwhile.

- Make sure that the leg of the work triangle, made of the sink, refrigerator and stove, is not shorter than 4 feet or longer than 9 feet.
- Keep the dishwasher close to the sink so that loading it will be easy.
- The choice of two sinks is not bad; you can store the soapy dishes in one and rinse in the other.
- Leave space for a safe oven area and sufficient grocery area.

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