

Adoption of GREEN Specifications & Items for Construction Practices – Need of the hour

Dr.Girish S.Kulkarni

- The construction industry in the 20th century, inadvertently violated a fundamental rule in materials science that there exists a close connection between nature and building.
- The primary greenhouse gas is carbon dioxide and, during the 20th century, its concentration in the environment has risen by 50 percent.
- To build environmentally sustainable structures, it is clear that instead of strength, the 21st century construction practice must be driven by considerations of sustainability.

Solution To Problem

- The transition can be achieved by major paradigm shifts in the selection of eco friendly materials, mixture proportions, and construction practices.

Green Building Techniques and Materials are Resource Efficient:

- **Durable**
- **Salvaged for reuse, refurbished, remanufactured, or recycled**
- **Easily recyclable or reusable when no longer needed**
- **Manufactured from a waste material (such as straw or fly ash) or a waste-reducing process**
- **Sustainably harvested from renewable resources**
- **Minimally packaged and/or wrapped with recyclable packaging**
- **Able to reduce or eliminate the need for another material (e.g., panel construction, or finished concrete flooring)**
- **Locally extracted and processed**
- **Energy efficient in use**
- **Use less energy in extraction, processing, and transport to the job site (low embodied energy)**
- **Generate renewable energy**
- **Water-efficient**
- **Manufactured with a water efficient process**

Present practice in the Indian construction industry

- The construction industry in India is mainly dominated by Govt. Bodies like CPWD, PWD, MJP, ID, MHADA, Municipal Corporations, Other Civil Bodies and Builders & Developers, Architects, Engineers, etc.
- For effective implementation of Green Building material usage there is no adequate availability of technical information, wording of items and specifications for inclusion in the estimates and tender papers.
- mostly due to incorrect and ambiguous wording of green specifications in the items of tender papers and in some cases due to not adhering to the details in the drawings the effective implementation of green building application is yet to be achieved.

Green Building Materials & Technologies those can replace existing Items for work and Standard Specifications in the DSR/Standard specification book

- 1.Pozzolana Material content**
- 2.Sand and aggregates obtained from sintered fly ash and pulverized construction / demolition**
- 3.Steel**
- 4.Components made of Ferro cement**
- 5.Ready Mix Concrete**
- 6.Curing agents**
- 7. For Masonry**
- 8 For Plastering**
- 9 For Roofing and Ceiling**
- 10 For Flooring, Paving and Road Work**
- 11 Windows, Doors and Openings**

It is necessary to include Green Building Materials and Specifications in the standard specification books and DSR's of Govt. Bodies like CPWD, PWD, MJP, ID, MHADA, Municipal Corporations, Other Civil Bodies and Builders & Developers, Architects, Engineers, etc.

Item as per current DSR

Item suggested for replacement using Green Products

BDT 12 A

Providing and fixing country teak wood double or single leaf second class panelled 35 mm thick shutter & 25 mm thick paneled door with 60 x 110 mm frame without ventilator as per detailed drawig including the door frame iron oxidised fixtures & fastenings & finishing the woodwork with oil painting 3 coats complete

Providing and fixing Eco FReCh single leaf paneled Doors made out of Eco Friendly Recycled Chip board materials Single Mold Solid & sturdy enough to withstand attack of Pests or Weathering Effect of Nature. Consisting of the Raw **Material used to manufacturing of the doors Non – Degradable in Nature with 35mm thick shutter and 25mm thick pannels with 60 x110 mm frame** without ventilator as per detailed drawing including the door frame iron oxidized fixtures and fastening and finishing complete.



CONCLUSION

- For effective implementation of Green Building Design, extensive efforts need be taken by every element associated
- Building industry to make use of eco-friendly materials in the construction process for sustainable future.
- The public institutions like CPWD, PWD, MJP, ID, MHADA, Municipal Corporations, Other Civil Bodies and Builders & Developers, Architects, Engineers, etc. imparting technical standards and specification need to make necessary changes for eco-housing constructions in their procedures and codes.