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Innovation spurs energy efficiency movement



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Newer, better, faster -- these terms aren't unfamiliar to any industry constantly pivoting within an ever-evolving marketplace, but they're certainly applicable to the product improvements and overall design trends taking shape within the industrial construction field.

Recent industry changes occurring within industrial and commercial construction are taking advantage of improved science and technology efforts. These include upgraded energy and efficiency systems with new building designs, new high-strength bending and product load support concrete floor products and lower cost, more efficient LED light fixtures.

One of the factors pushing the energy efficiency movement for building designs is that the regulatory requirements are being upgraded. As of Jan. 1, commercial construction facilities in Illinois are required to be more efficiently designed and constructed with greater thermal and insulation characteristics than ever before. The Illinois Capitol Development Board in conjunction with the Department of Commerce and Economic Opportunity, updated the required code from the 2012 International Energy Conservation Code to the 2015 International Energy Conservation Code.

This change generally moves the required exterior building wall insulation value to a R-17 from previous industry practice of a R-14 and the building roof insulation value to a R-30 from a R-25. Depending on the project size, there is a 5 to 8 percent increased cost associated with the change. However, that cost is made up relatively quickly with the energy efficiency savings.

More and more interior and exterior concrete flooring and paving requirements facilitate choosing Ductilcrete as a substitution for conventional concrete. Ductilcrete is a patented product that is approximately 10 years old and has over 64,000,000 square feet of product in the industrial and warehouse market.

More than 220 projects have been completed using this system throughout the country. Ductilcrete is a composite concrete system providing many performance benefits when substituted for conventional concrete. Installed by trained and licensed applicators, this product results in less slab curling, fewer control joints and heavier loading performance capabilities with smaller paving and floor slab thicknesses. Floors are designed and constructed to resist storage rack point structural forces generated with warehouse racks loaded with pallets six or seven levels high. The Ductilcrete floors can also be designed and constructed to support two and three level working mezzanine floors or platforms with complete reconfiguration flexibility for future rearrangement.

Most conventional warehouse and manufacturing concrete floor slabs require foundation supports at each mezzanine support post which have to be abandoned and reinstalled in the event the mezzanine is reconfigured with a different support post layout.

The revised energy code and the advancements in concrete flooring and lighting are just some of the exciting and impactful enhancements being implemented into industrial and commercial construction in 2016.

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