

Trendsetters In Concrete Industry – Where Are We Leading?

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Ready Mixed Concrete (RMC) industry is poised for catching momentum in its growth in context of growing quantum of infrastructure needs in India. The nature of the infrastructure projects being conceived requires a need for high quality, durable and sustainable construction with a tremendous fast pace at an economical cost. RMC as a technology is the perfect complement for such demanding parameters to be achieved on consistent and long term basis. Indian RMC industry has set up a steady foundation in last 20 years by virtue of consolidation and upgrading technology. Leading cement manufacturers and corporate companies with strong financial backup have setup nationwide network of RMC plants covering more than 500 plants across 50 cities of the country. Starting from manually operated plants in the 1990s, the industry has graduated to fully automatic imported plants and eventually into completely integrated IT systems for dispatch and quality control. The industry has also been able to drive the development of required support industries like aggregate manufacturing, pumping contractors and decorative concrete applicators. The country has also witnessed the rise of RMC

manufacturer's association RMCMA, which has contributed much in the arena of knowledge dissemination and standardisation. Many RMC plants in the country are currently boasting of QCI certification and are getting ready for upcoming green product certifications. The future of RMC industry can be anticipated to go through many more dynamic changes considering the availability of vast knowledge base and technological advancements. Market leaders like UltraTech Cement are driving the advancement with a goal to be a step ahead in offering the construction industry the products, services and technologies needed to match its accelerated pace of world class specifications and constructability requirements. As the construction field targets to develop smarter, fast paced, modern structures with high serviceability, concrete technologists and designers are busy stretching their creative muscles further than ever. Team Ultratech views concrete to be much beyond just a bulky engineered stone, as traditionally incorporated into buildings using slow, manual, supervision dependent basic material. The generation next RMC is a high-performance material customized to produce a wide array of

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properties, thereby making inroads into value enhanced applications, which were previously achieved using other materials. The change is inevitable; the roadmap for the change is already taking shape. Here are some of the steps, which are the flagstones of the modern approach to concrete based construction.

Solutions Approach

Concrete as a material does not perform in vacuum. It is the most abundantly used building material across the globe. Depending on the ultimate end use of the structure as well as the technology used in construction, performance of concrete integrates with various project requirements. Versatility of concrete as a material has been explored to a great degree in recent decades and this enables to customize many more performance characteristics of this unique building material. Concrete can be designed for parameters beyond its strength to enable easier, durable and high performing structures. Additional characteristics like self-compaction, light density, thermal insulation, fire resistance and many more can be tapped in the design of concrete. Availability of advanced materials like supplementary cementitious materials, chemical admixtures, fibres present the designers with flexibility and dynamism to cross boundaries set by the traditional concrete making approaches. RMC industry acts as the incubator of concrete technologists and research professionals who can translate project requirements into a wet mass that becomes spinal cord of the architect's and the specifier's dream turning into a living body of an edifice. The industry has been moving away from just specifying grade of concrete like another commodity. Rather, many high-end projects tend to involve the leading RMC companies at the conceptual and pre-bid stage to evaluate potential product features and encourage upgrading of products. Specifiers have steadily switched from grade 40 to even up to grade 95 concrete because of such pre-bid meetings. Project management as well as contracting teams are often found exchanging ideas with RMC professionals to evaluate the possibility of time savings and reduction of manual labour by adopting concrete with modified properties. The maker of concrete is no more expected to just make a concrete product. He is expected to package inside the rotating drum mixer a plethora of solutions, which this magic material can discharge from those transit mixers. A brief list of a few such solutions offered by UltraTech RMC to the construction field have emerged as newer varieties of value added concrete with a potential to replace other alternative products is shown in the Table. This is only going to escalate in its momentum. As the complexities of design and performance increase, so will the

Construction Project Challenges	Solutions Offered by RMC
Intricate shaped structures and steel congestion with superior surface finish requirement and minimal compaction	Concrete which is self flowing, self compacting without segregation and bleeding - Self compacting concrete (UltraTech Freeflow)
Repair work requiring speedy re-commissioning of the structures	Concrete with enhanced rate of gain of compressive strength - High early strength concrete (UltraTech Rapid)
Backfilling work with reduced laying effort and ability for easy excavation	Low strength flowable concrete - Controlled low strength material (UltraTech Flowfill)
Laying of floors using floating and troweling machines with precise levels and planeness with reduction of primary reinforcement	Concrete with improved flexural strength, and reduced shrinkage properties - Fiber reinforced concrete (UltraTech Fibercon)
Low strength filling required in the building structures with minimal increase in dead weight, if needed with enhanced insulation properties	Lightweight concrete using Polystyrene beads or foam with density around 1000 kilograms per cubic metre - Lightweight concrete (UltraTech Litecon)

need for solution orientation. It is not going to be every one's cup of tea, as they say, but a drum of solutions!

Value Added Products

Creativity has had its side effects in the RMC industry. There has been a growing range of branded products within the RMC segments, which have been whole-heartedly embraced by various user segments. The seller of concrete is not only selling a B2B material, but he is offering a value proposition. More than 20 per cent of UltraTech RMC sales comprise of such value-added products. Other leading RMC manufacturers have also branded such products and





are able to increase the market share of concrete by replacing other materials for these applications. Typically, these value-added siblings of traditional concrete offer the construction industry and the end users improvements in a combination of factors like convenience, speed, service life, comfort and economy. Offering additional value to the customers is bound to become a win-win situation for both the buyers and the sellers because the enhancement of value creates financial advantages at both ends. Customer orientation has been changing across the business world in these decades. Apparently, RMC industry is not going to stay untouched with it. The leading companies follow the processes of mapping customer needs and capturing the voice of customer through a variety of surveys at various levels. The results from such market exercises are pushing their way into the desktops and laboratories of product developers. The signals seem very clear that those companies who pace themselves with the rising value expectations and satisfy those vacuums are going to be the winners of the long haul.

Green Products & Sustainability Imperatives

To meet the challenges posed by low entry barriers and possible dilution of product quality by unorganized players within the industry, the corporate RMC companies have embraced various quality and process certifications like ISO 9001, ISO 14001 and QCI. In future, it is anticipated that this trend will graduate into further scaling of processes, which are more focused towards green building construction and sustainable development. Being a major user of cement as well as alternative by-products like flyash, and slag, RMC manufacturers will be able to make tremendous contributions in this

area. Because of waste generation issues, the industry would be forced to innovate and implement mechanisms to utilize internal and external waste productively in times to come. Application of world class management models and green product certifications will be the next step, which the forward-thinking RMC manufacturers are expected to venture into in future. Already IGBC and RMCMA are in the process of shortly launching GreePro certification for RMC products. Concrete manufacturers would also be expected to engage with end users in knowledge sharing regarding usage of energy efficient varieties of concrete.

Indian RMC industry, led by industry leaders like UltraTech RMC, has shown an unusual enthusiasm and efficiency in catching up with the international forerunners in terms of technology and mindset even though it started late in the overall product timeline. It has been prompt in adjusting to changes in the technology and would be moving towards establishing a greater credibility amongst the end users locally and its RMC peers worldwide as leaders of change in the coming decades. ■



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