

# Need of Effective RMC Plant Management (A Review)

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**Abstract – Mechanization and the installation of RMC plants on a commercial scale were assisted by the evolving situation, which helped to boost the speed of mechanisation. In 1993, RMC began commercial production in India with just one unit in Pune. It has achieved nearly 15% share of the total concrete produced in the country. In some major cities, like Bangalore, Hyderabad, Mumbai and Chennai the share of RMC has reached as high as 50% to 60%. RMC's development potential in India is huge if the regulatory authorities, customers, and decision makers offer the necessary assistance during its early years. In this project the critical factor causing improving productivity will indentify.**

**Keywords – RMC Plant, Critical Factor Productivity**

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## OVERVIEW:

Construction sites for dams like as Bhakra Nangal and Koyna first employed RMC in India in 1950. At the construction the transportation of concrete is done by either manually or mechanically using ropeways & buckets or conveyor systems.

The RMC in Pune in 1991. This factory, however, did not last long owing to a variety of issues, and it was shut down. During the year 1993, two RMC plants were established in Mumbai to commercially sell RMC to the projects in which they were placed within a short period of time. Unitech Construction set up one plant at Hiranandani Complex and Associated Cement Companies set up another plant at Bharat Diamond Bourse Commercial Complex.

These plants were later allowed to sell RMC to other projects also. Thus RMC was successfully established sometime after 1994 in India. RMC producers from outside India soon became interested in the Indian market

## PAST RESEARCH AND FINDINGS:

*“Ready Mix Concrete: Challenges & Opportunities in India”*, Dr. S. K. Dave ( 2018) , It is the purpose of this paper to explain the idea of RMC (Ready Mix Concrete), as well as the problems and opportunities it brings in India. RMC is the type of concrete that is often utilised in today's building sector, when time is of the essence and efficiency is critical. Most of the RMC plants are located in 7 large cities of India, where they contribute 30% to 60% of total concrete used in these cities. RMC, on all India basis contributes to about 5% of total concrete used. The

growing popularity of RMC in cities is for obvious reasons of constraints of construction space and need to control environmental pollution. This is inspite of about 12% to 20% higher cost as compared to site mixed concrete. The number of RMC plants in India, are growing rapidly and being relatively new ones having most up-to-date machinery and technology.

*“Present technology of ready-mixed concrete and future prospects”* M. Takeyama 2006, The first production of ready-mixed concrete (RMC) in Japan dates back to November 1949 at the Narihira-bashi Plant of Tokyo Concrete Kogyo Co. Obtaining RMC is now just a phone call away to any one of the RMC plants found all over the country. In recent years, however, the increase in the number of new RMC plants as well as the expansion of existing plants has led to an excessive increase in supply capacity compared with the demand, resulting in significant reduction in the operation rate. This threatens management of the industry, in some cases leading to bankruptcy. Most of the 5300 RMC plants in Japan are small busi-nesses, on whom all of the concrete-related projects rely. Stabilizing the industry's foundation is therefore a pressing subject.

*“Analysis of Sludge Formed in R.M.C Plant”* By Arjita Biswas 2013 With the growing demand for ready mixed concrete, the disposal of sludge water is becoming an increasing environmental concern. Each working day approximately 700–1300 litres of wash water are required for a single concrete Truck. Untreated sludge water cannot be lawfully released into urban sewers because of its high alkalinity and significant amount of suspended materials. Sludge water disposal typically involves the use of two

linked sedimentation basins. There is a first basin that collects waste concrete and wash water from the concrete factory and its vehicles. Each transit mixture is cleaned with around 120-200 litres of water to remove the sludge from the blades, walls, and floor of the transit mixer.

*“Failure Mode Effect Analysis Prof. Jyoti Trivedi 2018* There is an awareness and understanding about importance of risks and its management techniques in European countries. Operation managers on RMC plants in the European countries are likely to work on risk management at production plant and delivery sites. Risk management at the RMC plant is undervalued in India. India's RMC industry lacks a regular and effective risk management technique based on information obtained from RMC factories in Mumbai, Navi Mumbai, Pune, Bangalore and Noida. Unless the risks are addressed properly, the RMC industry in India shall not gain reliability, confidence of customers and will also cause reduction in profit margins. To identify the effective risk factors for the concrete production process for quality control using failure mode effect analysis (FMEA) tool, and to propose quality control model for ready mix concrete (RMC). This model will be valuable information to engineers for identifying failures of on process concrete production.

*“A Brief Study of Ready-Mix Concrete: In 2013, Md. Nazmul Haq* authored Traditionally, each of these elements was acquired separately and blended at the construction site to form concrete, which is a mixture of Portland cement and water, as well as sand and gravel or crushed stone. The production of ready-mixed concrete is computer-controlled, and it is then delivered and deposited on site with high-tech equipment and procedures. RMC promises its consumers a wide range of advantages. The growth of RMC is predominantly driven by demand from the metro cities in cities like Dhaka. RMC is particularly used when building activity is located in congested sites where small space is available for sitting the mixer and for stock piling of aggregates and for the construction of high rise building. The investigation examines the recent trend, use of Ready-Mix Concrete, various manufacturing companies, a thorough survey on these companies, lab reports showing the comparison of strength gain of various companies and consumers of Ready-Mix Concrete in Bangladesh, as well as presents the cost comparison between various Ready-Mix Concrete manufacturer companies of different compressive strength.

*“Quantization of risks involved in supply of ready mix concrete in Construction industry in Indian scenario”, In 2017, Mohd Amir Khan* wrote this. Today, one of the most difficult parts of ensuring timely delivery of commodities to dispersed clients is the synchronisation of just-in-time (JIT) production and transportation. JIT supply networks are more fragile because of several risk variables, and construction still need tools for assessing and comprehending supply chain risks. To analyse supply chain risks,

identify vulnerabilities, and estimate the impact of interruptions in a ready-mix concrete supply chain, this article uses an FMECA tool and a discrete event simulation. Analysis was based on data collected from concrete batch plant managers and current statistics on demand, production, and delivery performance.

*“A study on customer preferences and perceptions on quality In 2014, L R Manjunatha* wrote This study examines how customers perceive the quality and service of ready-mixed concrete. Concrete consumers, including architects and engineers as well as builders, were surveyed in order to get information about their perceptions of concrete's supply and growth as well as its long-term durability and market potential. Based on the demographics of the respondents, the study was conducted. The responses they provided were studied in order to derive findings that may be utilised to establish the marketing strategy for RMC and to enhance RMC goods and services. This study examines the preferences and opinions of customers in the construction industry in Bengaluru, Karnataka, regarding the quality and services of RMC and SMC. Buildings, contractors, developers, and promoters are all customers of RMC, and their impressions of the product are critical to its growth and promotion.

*“Time Management in RMC Plant” By Professor SS Deshpande* in 2017 RMC factories are springing up all throughout the country to bridge the gap between demand and supply. Time management of an RMC plant will assist investors or any other individual or organisation make investment decisions about an RMC plant in this study report. To aid with investment and capital generating decisions, the RMC plant cash flow has been calculated in this study. The cost of operating and maintaining the RMC plant, as well as the cost of commissioning and installing the RMC plant, have been gathered from the manufacturers through market research. A significant portion of RMC's Time Management is spent on transit mixers, which are an integral aspect of the company's manufacturing process. Monte Carlo simulation has been used to estimate the number of transit mixers that would be needed on the RMC facility to meet the daily demand from various Mumbai locations. The RMC plant's Time Management was then calculated. This research may also be used to determine the Time Management of any other RMC plant capacity and then choose the most cost-effective alternative based on requirements and capital availability..

*“Qualitative Analysis of Internal And External Risks For Ready Mix Concrete Plants – ”, authored in 2017 by R.C. Walke* The global need for ready-mix concrete (RMC) is increasing, and India is no exception. The RMC business, like many others, faces a wide range of potential threats from several angles. To ensure that the RMC sector is credible, clients have faith in it, and profit margins are

expected, these risks need to be adequately managed. The RMC sector has both internal and external risk sources. This research presents a simple yet efficient method for qualitative analysis of hazards connected to RMC plants that are both internal and external. Qualitative analysis of the hazards will allow for the development of effective response plans.

### CONCLUDING REMARK:

RMC operations are highly mechanized and fully controlled through electronic controls and hence reduce the probability of errors in various operations. It is also environmentally friendly and brings down pollution due to dust at construction can also be accelerated with the use of the RMC. The present study developed a framework which contributes to sort out the problem which is faced by the director of RMC plant.

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