

QUALITY ASSURANCE IN READY MIXED CONCRETE MANUFACTURING IN SRI LANKA

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Abstract

In Sri Lanka , concrete has become the dominant construction material for all types of buildings and other structures. Due to the significant growth in high-rise buildings, particularly in the urban and in suburban areas, the use of Ready Mixed Concrete has increased rapidly.

In this context, introduction of quality assurance is of considerable importance, such quality assurance system should be implemented in RMC industry in order to achieve high quality standards, automatically reducing the production cost long term.

In this research work presented in this report, How quality is being achieved in RMC industry in Sri Lanka. Further more recommending to implement ISO 9000 quality system for RMC industry as an entry to the quality improvement process. Since quality control is an integral part of quality assurance, a detailed literature survey is carried out to find definitions for quality, quality control, quality assurance, ISO 9000 quality standards and application to RMC industry and quality control techniques.

According to my knowledge no body has done research work on quality assurance of RMC in Sri Lanka and one research work found from Saudi Arabia.

It geared me to do further studies on this topic. Questionnaire survey is carried out to find the present production practices among RMC suppliers in Sri Lanka and it was found that they are not up to the required standards.(SLSI 1144, QSRMC 1995, BS 5328)Detailed case study is carried out for three major RMC suppliers in Sri Lanka and 28 day compressive strength data was analyzed. Results shows that the systems are not in control.

The critical areas which affect the quality of concrete where RMC suppliers most of the time try to pay less attention are identified as inspection and testing of raw materials, storage facilities and calibration of testing and measuring equipment.

Detailed comparison of ISO 9000 quality requirements and present practices among RMC suppliers also presented in this report. Based on the results obtained from this research work I have given the suggestion to implement ISO 9000 quality system to RMC industry

1.0 INTRODUCTION

1.1 BackGround

In Sri Lanka, concrete has become the dominant construction material for all types of buildings and other structures. Due to the significant growth in high-rise buildings, particularly in the urban and in suburban areas, the use of Ready Mixed Concrete has increased rapidly.

Ready Mixed Concrete (RMC) was first introduced in Sri Lanka during the construction of new Parliament site and today Ready Mixed Concrete industry has developed to 9 Ready mixed Concrete suppliers in Colombo. In other areas too the above suppliers have established RMC plants to supply concrete for a few major projects.

There is a world-wide emphasis on quality in all types of industries including concrete construction. Most developing countries face problems with regards to product quality. The nature of the problem differs depending on the phase of Industrial development in the country. There are several common factors impeding the improvements in quality in most developing countries, including shortage of goods, constraints on foreign exchange, incomplete infrastructure and inadequate knowledge.

Despite of these challenging circumstances, the need for quality in developing countries cannot be overemphasized. Improving the quality of concrete construction is necessary in order to save millions of rupees spent on rectifying defects and wastage of materials. This necessity is

most apparent in Sri Lanka where some of the failures in concrete structures are due to poor quality concrete and bad construction practice. With the current wide use and acceptance of RMC as oppose to site mixed concrete, it is believed that the potential for improving the quality of concrete used in construction work has substantially increased.

1.2 Objectives

The objectives of the study are:

1. To study the techniques used in assuring and controlling Ready Mixed Concrete
2. To study the quality Assurance and control practices among the Ready Mixed Concrete suppliers.
3. To carry out a case study using of a selected Ready Mixed Concrete suppliers for analyzing quality control practices of Ready Mixed Concrete production process using ISO 9000 standards.
4. To identify critical areas for improving the quality of RMC in Sri Lanka.