

Quality: A Challenge in Indian Construction

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Abstract—This article has been result of a QA/QC Manager 37 years of experience, working in various construction site in INDIA & Abroad. To maintain right quality at first time is a very tough task for any quality manager in India. Here author has try to narrate few of tough task. In India to tech the famous quote of Greek Philosopher ARISTOTLE -“Quality is not an act, It is a habit”

What is quality?



Quality can be defined as a trait which proves that an object or an event has achieved the goal it is intended for, looking aesthetically.

Quality: What is that

MOST COMMONLY USED & MOST DIFFICULT TO DEFINE

According to Deming (The Quality Guru) **PREDICTABLE DEGREE OF UNIFORMITY, DEPENDABILITY, AT LOW COST SUITED TO THE MARKET**

According to Juran- **FITNESS FOR USE**



Quality: As per ISO 9001-2008

Defined as “the totality of characteristics of an entity that bears on its ability to satisfy stated and implied needs”



What is stated needs

Stated needs may be available in the form of specifications, Conditions or bill of quantities

What is implied needs-?

Not defined

Sometimes not even expressed

Even may be unspoken wish. (It is something 1+1)

Lack of Right / Knowledgeable Manpower.

Right manpower is also required in the construction industry nowadays because, at different stages of construction, qualified manpower is required. As we saw in the pandemic situation, because of the lack of right manpower, delays in projects.

Another aspect is lack of interpretation various Codes/ Standards/ Specification by site Quality Manger (SQM) at various occasion. It is also observed that SQM miss the special requirements stipulated in General Condition of Contract (GCC) and Special Condition of Contract (SCC) of a particular project.

There is a lots of changes happened in various GCC & SCC of contract documents since last five years. Example given below.

Earlier Requirements for Lead Quality & Lead NDT engineer	Present Additional requirements
<p>LEAD WELDING / NDT ENGINEER</p> <p>Degree in Mechanical Engineering/ Metallurgy with minimum 15 years of experience in Welding/NDT (Non-Destructive Testing) plus Level-II in RT (Radiographic Testing). (Refer Note-1 also)</p> <p>or</p> <p>Diploma in Mechanical Engineering / Metallurgy with minimum 20 years' experience in Welding / NDT plus Level-II in RT. (Refer Note-1 also)</p>	<p>1. For Mechanical, Composite, EPC or EPCC Contracts of value more than Rupees 20 crores, the Lead Welding/NDT Engineers shall also possess Certified Welding Inspector qualification from American Welding Society or CSWIP3.1 Welding Inspector qualification from The Welding Institute, UK.</p>
<p>LEAD QA/QC MANAGER</p> <p>Degree in Engg. with 15 years OR Diploma in Engg. with 18 Years of Construction Experience. Out of the experience, at least 5(Five) years should have been as a QA/QC Manager. (Refer Note 2 also)</p>	<p>2. For Mechanical, Composite, EPC or EPCC Contracts of value more than Rupees 20 crores, the lead QA/QC Engineer shall be a qualified internal auditor of ISO 9001.</p>

While bidding for particular project, project team miss the above lines, which is one of the challenge. If skilled manpower is not available then it can affect the quality of the project, which is something that you don't want to compromise in this time. Therefore, the lack of right qualified manpower is also a major problem for the construction industry in India.

Besides lack of training provided to the construction workers further hampers the timeline and quality of the constructions. Focused attention is needed to speed up the skills and knowledge level of the workers.

India is at a tipping point, both in terms of economic growth and in the human development of its more than one billion citizens. The country is the fifth largest economy in the world,

According to the world economic forum's report, more than half of Indian workers will require reskilling to meet the talent demands of the future. They will each require an extra more than 100 days of training on average.

Poor Sub-contractor Performance

The factors above have two significant impacts on the performance of construction projects: the risk of going over budget and the risk of failing to deliver within specified timelines.

Rising and volatile costs and raw material cost issues force large projects to exceed budgets.

“According to a KPMG survey, 31% of contractors managed to remain within 10% of their budget. Furthermore, only 32% of project owners maintained a “high level of trust in their contractors,” while 69% of owners pinned “poor Sub-contractor performance” as the “biggest reason for project underperformance.” [QUOTE]

In-spite of strong and proven Sub-contractor selection criteria, project execution team get worst sub-contractor, who does not have right infrastructure, right manpower and right motivation. Hence, forced to compromise QUALITY factor.

Right resource planning against natural disaster.

In this scenario we see two aspect. One construction company having all necessary machinery of theirs own to tackle situation like huge rain fall, flood etc. But due to improper planning cannot utilise complete machinery at the nick of time. In other hand various construction company depends totally on sub-contractor and poor performance of said sub-contractor leads the delay of project. Right advance safety planning may avoid such delay.

The above condition is directly related to project quality performance.

Implementations of Quality Management System

Need for Quality Management in Construction until the emergence of globalization, the construction industry in most countries was sheltered from international competition. In the absence of direct international competitive pressure there was little motivation for the domestic construction industry to strive for quality improvement. But during last few decades there has been a significant rise in customer awareness towards the quality. Open economy that provided access to goods and services of international quality standards, also educated the customers about

the quality.

The following three key factors responsible for raising the customers' expectations for quality.

- i. Customers are increasing their quality requirements sharply
- ii. As a result of this increased demand customers expect higher quality products and services
- iii. In the era of competitive business, the companies have no option but to evolve and implement an effective quality management system. The above stated factors stand valid for construction industry across the world. Thus management of quality in construction projects becomes one of the most important aspects that can contribute to face the challenge of achieving Quality in any project.

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