QUALITY MANUAL

Revised on: 01.04.2015

CONSOLIDATED CONSTRUCTION CONSORTIUM LIMITED
Registered Office: # 5, Second Link Street, C.I.T. Colony,
Mylapore, Chennai - 600 004,
Phone No.: +91 44 2345 4500, Fax: +91 44 2499 0225
E-mail: cccl@vsnl.com

REGIONAL OFFICES:

CHENNAI
# 13, West Sivan Koil Street,
Vadapalani,
Chennai 600 026
Phone No.: +91 44 2345 4600 / 01 & 23652901
Fax: +91 44 2365 2906 / 07
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HYDERABAD
# B16, Vikrampuri Colony, Vikrampuri
Secunderabad - 500 009
Phone No.: +91 40 2784 2681
Fax: +91 40 2784 2668
E-mail: ccclhyd@ccclindia.com

BANGALORE
# 173, 3rd Main Road, Dollars Layout
4th Phase, J P Nagar
Bangalore - 560 078.
Phone No.: +91 80 2511 6000
Fax no: +91 80 2658 4430
E-mail: ccclblr@ccclindia.com
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<td>Scope of Quality manual Operation defined for applicable regions.</td>
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## List of Abbreviations used

### Abbreviation Stands for

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<th>Abbreviation</th>
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<td>Q.M.</td>
<td>Quality Manual</td>
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<td>Q.S.P.</td>
<td>Quality System Procedure</td>
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<td>C.C.C.L.</td>
<td>Consolidated Construction Consortium Ltd.</td>
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<tr>
<td>C.E.O.</td>
<td>Chairman &amp; Chief Executive Officer</td>
</tr>
<tr>
<td>M.D.</td>
<td>Managing Director</td>
</tr>
<tr>
<td>DIR(O)</td>
<td>Director (Operations)</td>
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<tr>
<td>M.R.</td>
<td>Management Representative</td>
</tr>
<tr>
<td>G.M.</td>
<td>General Manager</td>
</tr>
<tr>
<td>G.M. (F)</td>
<td>General Manager (Finance)</td>
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<tr>
<td>W.I.S.</td>
<td>Work Instructions</td>
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<tr>
<td>W.P.</td>
<td>Work Procedure</td>
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<tr>
<td>S.O.P.</td>
<td>Standard Operating Procedure</td>
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<td>P.C.</td>
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<tr>
<td>P.M.</td>
<td>Project Manager</td>
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<tr>
<td>Q.A.E.</td>
<td>Quality Assurance Engineer</td>
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<td>R.E.</td>
<td>Resident Engineer</td>
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<tr>
<td>S.E.</td>
<td>Site Engineer</td>
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<td>Deputy Manager - Procurement</td>
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<td>H.R. M</td>
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<td>Indian Standard Code</td>
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<td>PLG. M.</td>
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<td>Q.M.S.</td>
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<td>S.H</td>
<td>Sector Head</td>
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<tr>
<td>R.M</td>
<td>Regional Manager</td>
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</table>

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3. **Introduction**

3.1 This quality manual describes the quality management system of CCCL.

3.2 This quality management system is established to ensure that product quality is achieved through control of processes and follows the structure of ISO 9001:2008 standard.

3.3 This quality management system applies to all the activities carried out at all the locations of CCCL to meet the customer's requirements.

3.4 **Company Profile**

3.4.1 Organisation & Address : Consolidated Construction Consortium Limited, 5, Second Link Street, C.I.T. Colony, Mylapore, Chennai 600 004.

3.4.2 Contact Person : Mr. S Sivaramakrishnan, Managing Director.

3.4.3 Annual Turnover : About **Rs.800** Crores for the year 2013-2014.

3.4.4 Number of Employees : Around **750**

3.4.5 Products : Civil, Structural, Mechanical & Electrical and Turnkey Construction
3.5 **Major Customers**

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<th>Infosys Technologies Ltd.</th>
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<td>Karnataka Breweries &amp; Distilleries Ltd.</td>
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<td>Intimate Fashions</td>
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<td>3.5.24</td>
<td>Foxconn India (P) Ltd.</td>
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<td>Airport Authority of India</td>
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<td>Bharat Electronics Ltd., Bangalore</td>
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<td>Caparo Engineering India (P) Ltd.</td>
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3.6 **Background of the Organisation:**

3.6.1 **Nature:**

3.6.1.1 CCCL is founded by a team of dynamic and experienced civil engineering professionals and staffed by equally young, dynamic and forward looking professionals.

3.6.2 **Year of starting operation:**

3.6.2.1 1997

3.6.3 **Management:**

3.6.3.1 CCCL is managed by a board of directors, headed by Mr. R. Sarabeswar, Chairman & CEO, Mr. S. Sivaramakrishnan, Managing Director and other directors.
### 3.6.4 Capability:

3.6.4.1 CCCL has already created many landmark buildings and industrial structures and is diversifying into water-supply, road and bridge projects.

### 3.6.5 Facilities:

3.6.5.1 Has Head Office at Chennai, and regional offices at Chennai, Bangalore, and Hyderabad.

### 3.6.6 Major Plant & Machinery:

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<td>Batching Plant</td>
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<td>Crawler Crane</td>
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<td>MAIT Rig</td>
<td>02 Nos.</td>
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<td>Earth Rammer</td>
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<td>Diesel Genset</td>
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<td>Tower Crane</td>
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<td>Mini Road Roller</td>
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Other major equipment are hired when more numbers are required.

### 3.6.7 Quality / Delivery Performance:

3.6.7.1 CCCL has a good track record of delivery performance on time; and in a few projects before time delivery.

3.6.7.2 CCCL has established a name for its high quality construction and has received appreciation from customers.
3.7 Structure:
3.7.1 The structure of this QM corresponds to the table of the contents and contains sections briefly describing procedures pertinent to each process.
3.7.2 Each section is provided with a unique number, company logo, documents title, section heading, section number, created / revised date and ISO 9001:2008 clause reference.

3.8 Approval and Issue:
3.8.1 QM is prepared by M.R and approved by M.D.
3.8.2 QM is posted in the company’s website and employees can view the documents by logging into the website.
3.8.3 When it is required to issue Quality Manual to external agencies where recall is not possible, compact disc containing only Quality Manual stamped “Uncontrolled Copy” is issued.

3.9 Amendments
3.9.1 Amendment is carried out as per documented procedures for document and data control and is approved by MD.
3.9.2 Amendments are carried out section wise and are identified by stating revised date.
3.9.3 Last change date is stated in the table of contents sheet.
3.9.4 The details of amendment are recorded in the amendment sheet of the QM.
3.9.5 The revised QM may be viewed by employees by logging into website.
**Quality Manual**

Sub: Management Responsibility

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ISO 9001:2008 Clause Reference: 5.5.1

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<td>6</td>
<td>Planning</td>
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<td>7</td>
<td>Management Review</td>
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C - Complementary
P - Primary

(Back to table contents)
## Management Responsibility

### Responsibility Matrix

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Document Title</th>
<th>MD</th>
<th>MR</th>
<th>DIR(O)</th>
<th>GM</th>
<th>SH/PC</th>
<th>PM/RE</th>
<th>TEN.M</th>
<th>DES.M</th>
<th>HRM</th>
<th>MTM</th>
<th>PRO.M</th>
<th>PLG.M</th>
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P - Primary

(Back to table contents)
5. **General Requirements**

5.1 CCCL has established, documented, implemented and is maintaining a Quality Management System, in line with requirements of ISO 9001:2008.

5.2 Quality Management System includes all functions and activities and resources which affect quality of construction.

5.3 Quality Management System is implemented and monitored to achieve planned results.

5.4 It is also monitored for its effectiveness.

5.5 By measuring and analyzing the processes necessary actions required for continual improvement are taken and are reviewed periodically.

5.6 Procedures have been documented for outsourced processes for conformity.

5.7 A list of such outsourced processes is maintained by PRO.M.
6. Documentation Requirements

6.1 CCCL has prepared a Quality Manual highlighting Quality Policy and Quality Objectives.

6.2 Quality Manual and System Procedures have been documented that are relevant to its activities.

6.3 All records required to be maintained by ISO 9001:2008 standard are mentioned in Master List of Records. Quality Manual has been established and is being maintained.

6.4 Scope of CCCL’s Quality Management System is included in the Quality Manual.

6.5 Documented Procedures are established and their cross references are mentioned against each section of this manual.

6.6 The interaction between processes is detailed in Para 7.07 and through responsibility and authority matrix.

6.7 Cross References of procedures are given at the end of each section.
7. **Scope Of Quality Manual**

7.1 Quality Manual describes the quality system that is set up in each area of activity of CCCL as required in ISO 9001:2008.

7.1.1 **Scope of Supply:**

7.2 The Quality Manual covers the operation of the company which has the Head Office at Chennai, and regional offices at Chennai, Bangalore, Hyderabad and other site operations spread at various locations.

7.3 This quality manual is supported by separate system procedures & WIS for each Department / activities at site complete with relevant formats that establish the functions of various departments.

7.4 The Management recognizes the need for a documented Quality Management System that focus all the elements as per ISO 9001:2008, so that our construction activities are understood by one and all and are done effectively.

7.5 The details of organization, persons, their responsibility and authority are described in this manual.

7.6 Interaction between the processes are described in this manual shown as 7.7
7.7 – Interaction of process and description

Quality Management System
Process description and interaction

Senior Management

Customer Requirement

Tender Process

Regional Manager Office

Planning Process

SCM Process

Quality Control

Plant & Machinery

Safety

Monitoring & Reviewing

Resource Planning (AM)

Project Site Execution Team

Process Monitoring

Site Planning

Quality Process

Safety Process

Customer Satisfaction
8. Control of Documents

8.1 Policy:
8.1.1 All documents relating to quality management systems shall be reviewed for correctness, approved by authorized personnel and controlled.

8.2 Scope:
8.2.1 All documents related to Quality Management System.

8.3 Responsibility:
8.3.1 Control of QM, QSP M.R.
8.3.2 Control of WIS/WP/SOP, QP Dir(O)
8.3.4 Control of Working Drawings Head - Design / Consultant
8.3.5 Control of External Origin Documents like Standards, Customer supplied drawings, etc. Head - Design / P.C./PM

8.4 Procedure:
8.4.1 QM and QSP are approved by MD.
8.4.2 All WIS/WP/SOP are approved by Dir (O).
8.4.3 Specifications and other supporting documents are reviewed for correctness and are approved by P.C.
8.4.4 A Master – List of documents is maintained by each department / site indicating the name of document, its current issue / revision status.
8.4.5 All documents are duly approved by concerned authority. All documents in soft copy can be viewed by users by logging into company website.
8.4.6 When there are changes / modifications / updates these are reviewed and updated as required and re-approved by authorized person.
8.4.7 The changes are incorporated in the documents and a new revision status is provided.
8.5 Responsibility, Procedure, Records maintained and references for document control are detailed in QSP P 0401.
9. **Control of Records**

9.1 **Policy:**

9.1.1 All Quality Records shall be maintained to demonstrate the conformance to specified requirements and effective operation of the quality system and retained for specified period.

9.2 **Scope:**

9.2.1 All Quality Records referred to in the QMS.

9.3 **Responsibility:**

9.3.1 Concerned person as per QSP / WIS

9.4 **Procedure:**

9.4.1 All records are ensured for legibility.

9.4.2 All records are suitably identified and stored in a manner that they are easily retrievable.

9.4.3 Records are protected from deterioration to last up to the retention period.

9.4.4 Retention period for all records are indicated in the Master – List of records.

9.4.5 Records are retained as per the retention period / contracted period.

9.4.6 Records pertaining to applicable statutory requirements are maintained as per their norms.

9.4.7 Records after the retention period are disposed off by the concerned department head.

9.5 **Responsibility, procedure, References, and Master List of Records maintained** are detailed in the Procedure for Control of Records in QSP No. P0403.
10. **Management Commitment**

10.1 Importance of meeting customer, applicable statutory and regulatory requirements is periodically communicated by CCCL through meetings, circulars posted in CCCL website employees portal, and our in-house magazine “**Consortium Chronicle**”.

10.2 Quality Policy and Quality Objectives have been established and communicated to all employees.

10.3 Management reviews are conducted periodically.

10.4 Management takes all efforts to ensure availability of resources.
11. Customer Focus

11.1 Policy:
11.1.1 Customer requirements shall be given topmost priority and all efforts are taken to enhance customer satisfaction.

11.2 Scope:
11.2.1 Applicable to all projects at various locations.

11.3 Responsibility:
11.3.1 Managing Director

11.4 Procedure:
11.4.1 All customer requirements are analyzed and customer needs are understood in clear terms.
11.4.2 All applicable statutory, regulatory and any additional requirements in relation to the project are communicated to the customer.

11.5 Responsibility, procedure, references and records maintained are detailed in customer related processes QSP No.P.0702.
12. Quality Policy

12.1 The Quality Policy and objectives of CCCL are discussed, agreed upon and formulated by CEO and Managers.

12.2 The text of Quality Policy and objectives are given below:

12.3 Quality Policy:

12.3.1 We at CCCL are committed to provide quality construction and services to meet customer’s need fully.

12.4 Quality Objectives and Strategies:

12.4.1 To achieve the Quality Policy, we shall

12.4.1.1 Effectively implement and maintain the Quality Management System.

12.4.1.2 Impart Quality consciousness among all employees though proper training.

12.4.1.3 Strive to execute the task right, first time and every time.

12.4.1.4 Develop Quality vendors & instill in them a sense of pride, of associating with us.

12.4.1.5 Make continual improvement in quality, delivery and performance.

DATE: 01.09.2001

R. Sarabeswar
Chairman & CEO

12.5 This quality policy and objectives are communicated to all employees in both English and local language and reviewed for its suitability.
<table>
<thead>
<tr>
<th>13.</th>
<th><strong>Quality Objectives</strong></th>
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<tbody>
<tr>
<td><strong>13.1 Policy:</strong></td>
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<tr>
<td>13.1.1</td>
<td>Quality Objectives shall be formulated appropriate to the function of CCCL activities, measurable and consistent with Quality Policy.</td>
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<tr>
<td><strong>13.2 Scope:</strong></td>
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<tr>
<td>13.2.1</td>
<td>Applicable to all employee of CCCL.</td>
</tr>
<tr>
<td><strong>13.3 Responsibility:</strong></td>
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<tr>
<td>13.3.1</td>
<td>All according to their level of activity.</td>
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<tr>
<td><strong>13.4 Procedure:</strong></td>
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<tr>
<td><strong>13.4.1 Quality Objectives:</strong></td>
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<tr>
<td>13.4.1.1</td>
<td>Top Management has set a Quality Policy &amp; Objectives which are related to the construction business.</td>
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<tr>
<td>13.4.1.2</td>
<td>Functions to be performed by various levels of personnel are shown in the Organisation Chart.</td>
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<tr>
<td>13.4.1.3</td>
<td>Quality objectives are broken down into departmental objectives that are measurable. Various measures to evaluate achieving of Quality Objectives are listed in QSP. These measures are evaluated periodically to assess achieving of Quality Objectives. Details of performance, cost and customer satisfaction are captured and evaluated.</td>
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<tr>
<td>13.4.1.4</td>
<td>Management Representative who is a member of Organization’s Management has been appointed at the rank of Senior Manager, and his responsibilities and authority are detailed in the Procedure Manual.</td>
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<tr>
<td>13.4.1.5</td>
<td>He reports to MD.</td>
</tr>
<tr>
<td>13.4.1.6</td>
<td>When changes are made to the Quality Management System, due to various changes in business environment, it is ensured that integrity of Quality Management System is not disturbed but maintained.</td>
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</table>
14. Quality Management System Planning

14.1 Policy:
14.1.1 The Quality System is established & maintained in order to meet the various requirements given in ISO 9001:2008 standards.

14.2 Planning:
14.2.1 The Quality Management System is followed by providing a quality manual which addresses all clauses applicable to the organization. Exceptions are detailed with suitable justification.
14.2.2 QM is further explained by quality system procedure.
14.2.3 QSP is further supported by Work Instructions, Work procedures and Standard Operating Procedures which clearly indicate how the work is carried out.
14.2.4 The responsibility and authority of all individuals who perform duties which affect quality and their reporting structures are explained.
14.2.5 Management representative is appointed and he is responsible for ensuring QMS is carried out throughout the organization.
14.2.6 All documents are reviewed & controlled as per documented procedures.
14.2.7 All records are maintained as evidence of activity & retained as per master list.
14.2.8 Resources required are planned & provided by the concerned personnel.
14.2.9 All activities / operations are carried out as per QSP / WIS.
14.2.10 Verification / checking are carried out at appropriate stages.
14.2.11 Only calibrated equipment are used for measurements. Persons performing jobs are ensured for necessary competence & training.
14.3 Quality System Document

14.3.1 The following documents are used as a means of ensuring that the product conforms to customer requirement:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Document</th>
<th>Purpose</th>
<th>Review Authority</th>
<th>Approving Authority</th>
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<tr>
<td>1</td>
<td>QM</td>
<td>Lays down Quality Policy &amp; Objectives</td>
<td>MR</td>
<td>MD</td>
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<tr>
<td>2</td>
<td>QSP</td>
<td>Details Quality System Procedures in line with QM</td>
<td>MR</td>
<td>MD</td>
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<tr>
<td>3</td>
<td>WIS/WP/SOP</td>
<td>To amplify QSP to suit individual activities</td>
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<td>Dir(O)</td>
</tr>
<tr>
<td>4</td>
<td>Formats</td>
<td>Form records to provide evidence</td>
<td>DEPT. HEAD</td>
<td>Dir(O)</td>
</tr>
</tbody>
</table>

14.4 Responsibility, procedure, references and records maintained are detailed in Product Quality Planning Procedure in QSP No. P0501
15. Responsibility & Authority

15.1 Policy:
15.1.1 Top Management shall ensure that responsibility and authority are defined and communicated to all concerned.

15.2 Responsibility:
15.2.1 MD is responsible for fixing the responsibility & authority & MR is responsible for communication.

15.3 Procedure:
15.3.1 The set up of the organization is shown in the organization chart (See Annexure - I in page-54).

15.4 Responsibility & Authority:
15.4.1 Chairman & Chief Executive Officer:
15.4.1.1 He is ultimately responsible for the entire operation of CCCL.
15.4.1.2 To establish contact with customers & securing business.
15.4.2 Managing Director:
15.4.2.1 He is responsible for the day to day activities of the organization.
15.4.2.2 He is the ultimate authority to decide on various business related activities.
15.4.3 Director (Operations):
15.4.3.1 He is responsible for overall implementation of all projects. He also handles a few important projects directly. Authority to sanction work order / purchase up to Rs.5 lacs and he reports to MD.
15.4.4 **Management Representative:**
15.4.4.1 To ensure that quality management system is established, implemented and maintained in accordance with organization, policy & objectives and as per ISO 9001:2008 standard.
15.4.4.2 He is also responsible for conducting of management reviews & reports to management.
15.4.4.3 Also responsible for managing Internal Audit.
15.4.4.4 To liaise with external certification agencies for certification process.
15.4.4.5 Responsible for conducting various Training Programmes.
15.4.4.6 MR reports to MD.
15.4.5 **Project Manager / RE:**
15.4.5.1 He is responsible for all the activities related to the specific site. Reports to the respective Project Coordinator.
15.4.5.2 Authorised to sanction purchase at site up to a limit of Rs.2500/-.
15.4.6 **Manager - Tendering:**
15.4.6.1 He is responsible for collecting, reviewing the bid document for technical / commercial terms and conditions and offering the bid and negotiation with client for securing the contracts
15.4.6.2 He reports to MD
15.4.7 **Head – Supply Chain Management:**

- **15.4.7.1** He is over all responsible for purchase of materials and procuring all outsourced processes. He reports to Dir (O).

15.4.8 **Head – Design:**

- **15.4.8.1** Responsible for all in house Structural Design. He reports to M.D.

15.4.9 **Regional Planning Manager/ Engineer:**

- **15.4.9.1** He is responsible for planning and scheduling for all the projects and arriving the requirements of resource, of men, materials & plant & machinery etc.,.

- **15.4.9.2** He reports to Regional Manager/ Sector Head.

15.4.10 **Deputy General Manager – (HR&A):**

- **15.4.10.1** He is responsible for recruitment & assessing training needs based on performance appraisal. He reports to MD

15.4.11 **Head - Maintenance:**

- **15.4.11.1** He is responsible for maintenance of all plant, equipment, machinery and instrument. He reports to DIR (O).

15.4.12 **Regional Manager/Regional Sector Head:**

- **15.4.12.1** He is responsible for the entire operation of respective region. Reports to DIR (O).

15.4.13 **Sector Head:**

- **15.4.13.1** He is Responsible for the entire operation of respective Construction sector. He reports to RM.
## 16. Management Review

### 16.1 Policy:
16.1.1 The Policy is to systematise the review of quality system by involving its members at fixed intervals.

### 16.2 Scope:
16.2.1 Applicable to all quality management systems and procedures.

### 16.3 Responsibility:
16.3.1 MD is the chair person of review.
16.3.2 MR is responsible for the operation.

### 16.4 Procedure:
16.4.1 The Management Review is done once in three months as per documented procedure for Management Review.
16.4.2 Management Review is made up of a committee consisting of Managing Director, Director(Operations), Vice-President, CFO, Management Representative, Regional Heads, Manager-Tendering, Head – design and Head – SCM.
16.4.3 MD is the chairperson of the meeting.
16.4.3 The Organization Policy, Objectives and their suitability, adequacy, and effectiveness of the system are discussed and action plan chalked out with target dates.

**16.4.5 The agenda for Management Review is as follows:**
- 16.4.5.1 Internal Quality Audits and ISO 9001:2008 External Audits
- 16.4.5.2 Customer feedbacks
- 16.4.5.3 Process performance and Product conformity
- 16.4.5.4 Status of Corrections, Corrective actions and Preventive actions
- 16.4.5.5 Follow – up action from previous Management review
- 16.4.5.6 Various statutory, business environmental changes, that affect Quality Management System.
- 16.4.5.7 Recommendations for improvement

**16.4.6 The output from Management Review and action to be taken are minuted with following points:**
- 16.4.6.1 Improvement to the effectiveness of QMS
- 16.4.6.2 Improvement to the product related to customer requirements
- 16.4.6.3 New resources needed to meet changing needs.

16.5 Responsibility, Procedure, Records and references regarding management review are detailed in Procedure for Management Review in QSP No.P0502
17. Resource Management

17.1 Policy:
17.1.1 CCCL shall determine and provide the resources needed to implement and maintain the QMS and continually improve its effectiveness and to enhance customer satisfaction by meeting customer requirements.

17.2 Scope:
17.2.1 This covers human resources and infrastructure resources.

17.3 Responsibility:
17.3.1 MD

17.4 Procedure:
17.4.1 Provision of Resources:
17.4.1.1 Top Management represented by M.D. determines and provides the resources needed to implement and maintain the QMS and continually improve its effectiveness and to enhance customer satisfaction by meeting customer requirements.

17.4.2 Human Resources:
17.4.2.1 Personnel performing work affecting conformity to product quality requirements are ensured to be competent on the basis of appropriate education, training, skills and experience.

17.4.3 Competence, Training and awareness:
17.4.3.1 Employees are recruited based on their educational qualifications and experience for specified positions.
17.4.3.2 Training needs are identified through Performance Appraisal.
17.4.3.3 Training dept prepares a list of training requirements for various employees and arranges training for identified employees.
17.4.3.4 Employees are evaluated for competence by tests for specific role.
17.4.3.5 Other persons performing specific activities are informed/trained on importance of their activities and how these contribute to quality objectives.
### 17.4.4 Infrastructure:

17.4.4.1 Management decides requirements of infrastructure like buildings, workspace, associated utilities, plant & equipment including electronic and communication equipment and supporting services like transport, communication or information system based on size of project, duration, location, specific need of customer, etc.

17.4.4.2 Process equipment like concrete mixers, vibrators, DG Power generators, bar bending machines, compactor are made available and proper maintenance is ensured for continuous availability.

### 17.4.5 Work Environment:

17.4.5.1 PM/RE determines arrangement needed to get the work done in case of rain, power cut or any other environmental factors that affect product quality.

### 17.5 Responsibility, Procedure, references, and records maintained are detailed in the following:

17.5.1 Procedure for provision of resources QSP No: P0601
17.5.2 Procedure for competence, training & awareness QSP No: P0602
17.5.3 Procedure for training QSP No: P0603.
18. Planning of Product Realization

18.1 Policy:
18.1.1 All the processes that affect quality shall be planned, facilities provided and operated as per the planned manner.

18.2 Scope:
18.2.1 All the processes which affect construction activities.

18.3 Responsibility:
18.3.1 SH / PM /PLG.M

18.4 Procedure:
18.4.1 Planning of Product Realization:
18.4.1.1 The aim of this activity is to do things right first time & every time.
18.4.1.2 The Quality System has been documented to ensure all activities leading to product quality are done as per the established processes that are as per the documented procedures mentioned below.
18.4.1.3 All processes are carried out by right persons whose individual designation, authority & responsibility are as given in the responsibility matrix.
18.4.1.4 Verification, use of equipment, monitoring inspection & testing are carried out at all stages of activities as per QSP.
18.4.1.5 These activities start from identifying the right supplier and end when the product delivered to the customer.
18.4.1.6 Acceptance criteria have been identified in the relevant document / record and are authorized by designated person.
18.4.1.7 The production and measuring equipments used for the construction activities are ensured for suitability of use and are maintained properly by preventive maintenance.
18.4.1.8 Quality Control Equipment are calibrated periodically to ensure their accuracy.
18.4.1.9 Records are maintained to provide evidence that the planned activities related to product realization are performed to meet the designed requirement.
18.4.2 Quality Plan

18.4.2.1 Quality Plans are prepared for incoming materials and in process activities.

18.4.2.2 Controls are exercised at each and every stage of activities from product design to product delivery.

18.4.2.3 Use of Plant and proper equipment are ensured to meet the specifications.

18.4.2.4 It is ensured that the planned activities are carried out at each and every stage as per WIS and are cleared for next stage of work.

18.4.2.5 Inspection is done by concerned authority and reported.

18.4.2.6 Final product quality is ensured and delivered to customer.

18.4.2.7 Internal audit is done to ensure QMS works effectively.

18.5 Responsibility, Procedure, references and records maintained are detailed in procedure for product realization QSP No.P0701.
19. Customer Related Process

19.1 Policy:
19.1.1 All customer requirements, drawings and specifications shall be reviewed for its adequacy and variations agreed upon and capability and capacity ensured and communicated.

19.2 Scope:
19.2.1 All tenders, Specification, drawings provided by customers.

19.3 Responsibility:
19.3.1 Tender Head

19.4 Procedure:
19.4.1 Determination of requirements related to the product:
19.4.1.1 The customer requirements are specified in the form of tender, architectural drawings or letter furnishing overall broad specifications.
19.4.1.2. The tendering department interacts with other departments as detailed in QSP.
19.4.1.3 Industry standards and applicable statutory and regulatory requirements for stated / implied needs for efficient and effective performance of the building / structure are considered by CCCL before start of construction.
19.4.1.4 Also other additional requirements that are needed for effective performance and utilization.

19.4.2 Review of requirements related to the product:
19.4.2.1 The tender / drawings are reviewed for its completeness in terms of product requirement.
19.4.2.2 If there are any differences between tender and tender drawings, clarification is requested from customer / architect and accordingly incorporated in our offer.
19.4.2.3 The organization’s capacity and capability to meet the requirements are ensured. This includes regulatory requirements also.
19.4.2.4 Wherever customer provides no documented statements of requirements, drawing / specification are developed by CCCL and customer approval is obtained.

19.4.2.5 Wherever changes are made the relevant drawings like structural drawings, specification are revised and customer/consultants approval obtained before start of operations and these are communicated to project coordinator / Project manager / Purchase Manager.

19.4.3 Customer Communication:

19.4.3.1 All product information like specification, cost & delivery are communicated in written form.

19.4.3.2 All enquiries, submission of contracts and order acceptance and amendments are communicated to customer by MD/Regional Head.

19.4.3.3 Customer response / acceptance are recorded.

19.4.3.4 Any change in the agreed norm between CCCL and customer for any reason is further discussed and agreed upon and recorded.

19.4.3.5 Changed customer requirements / customer complaints, if any, are recorded in the customer instruction register/customer complaints register maintained at the site office.

19.4.3.6 Any customer complaint received by the H.O. / R.O. is acknowledged and referred to the Project Coordinator / Project Manager/Regional Manager for resolution and resolve..

19.5 Responsibility, Procedure, references and records maintained are detailed in customer related processes procedure QSP No. P0702.
20. Design & Development

20.1 Policy:
20.1.1 CCCL shall plan all activities related to Design & Development to ensure the construction satisfies customer requirements fully.

20.2 Scope:
20.2.1 This is applicable for CCCL in-house design activities.

20.3 Responsibility:
20.3.1 Head - Design

20.4 Procedure:
20.4.1 Design & Development Planning:
20.4.1.1 The design activity is defined for each project detailing the activities and personnel responsible for the same and appropriate sequence of verification activities like design review, validation, design changes and testing.

20.4.1.2 The design & development plan includes the specific design skills, educational and experience requirements and arrangements for necessary training input.

20.4.1.3 Various resource requirements like people, equipment and person’s specific responsibility, authority, reporting structure & inter relation with groups are shown in the Design department Manual.

20.4.1.4 Design output is verified with respect to input.

20.4.1.5 Design is reviewed by MD for its correctness.

20.4.1.6 Design is verified / validated by means of alternative method of calculation, reference to similar projects or by other group having competence, as appropriate.

20.4.1.7 Whenever design change occurs due to customer requirement / any other reason design is to be reviewed, verified and validated and approved by concerned authority before release, in the same way as done for the original design and development activity.
20.4.2 **Design & Development Input:**

20.4.2.1 The following points are considered at design input stage:

20.4.2.1.1 Customer requirements, customer drawings are taken as prime input.

20.4.2.1.2 In case customer drawings are not available, CCCL arranges to represent customer requirements and get necessary approval from customer and other agencies.

20.4.2.1.3 Due consideration and implementation are ensured to follow statutory and regulatory requirements related to product as appropriate.

20.4.2.1.4 Various customer requirements mentioned in the tender / drawings are incorporated in the design.

20.4.2.1.5 Suitable personnel are identified for the design and development work.

20.4.2.1.6 Information / results gained from past experience is also used as input.

20.4.2.1.7 Various / specific processes / environment is also considered as input.

20.4.2.1.8 If design work is outsourced it is checked by CCCL for its correctness & suitability.

20.4.3 **Design & Development Output:**

20.4.3.1 In arriving at the output, it is ensured that it meets requirements in terms of customer specification / Architect drawing / CCCL drawing (design input).

20.4.3.2 Output is in the form of general arrangement drawings and structural drawings.

20.4.3.3 Drawings clearly specify various production, purchase, utility and service requirements & relevant specifications (BIS Codes).

20.4.3.3 Drawings also clearly mention various dimensions & specifications and are verified and approved prior to release.
20.4.4 Design & Development Review:

20.4.4.1 Design review is done by Head - Design for its adequacy of requirements to meet the drawing / customer specification / requirements.

20.4.4.2 During design review feasibility to execute the project is also considered.

20.4.5 Design & Development verification / validation:

20.4.5.1 The verification of design is done at appropriate stages.

20.4.5.2 The verification is done in any one or more of the following methods:

20.4.5.2.1 Design Comparison
20.4.5.2.2 Alternative Calculation
20.4.5.2.3 By External Agency / Customer Representative
20.4.5.2.4 Computer Aided Design
20.4.5.2.5 Comparison with established design codes
20.4.5.2.6 As per contract review

20.4.5.3 Design is validated with reference to “As built” drawings.

20.4.6 Control of Design & Development Changes:

20.4.6.1 The design change occurs whenever customer requirement changes. Changes are reviewed, verified / validated, approved by customer / architect / DES. M before implementation, as done in the case of original design and development activity.

20.5 Responsibility, Procedure, references and records maintained are detailed in Design & Development Procedure QSP No. P0703.
### Purchasing

#### Policy:
21.1.1 All purchases shall be done from approved sources and shall conform to specification.

#### Scope:
21.2.1 For all building materials, items, sub contracted processes, important consumables, tools, spares, machinery, equipment, and shuttering and scaffolding materials.

#### Responsibility:
21.3.1 PRO.M – for material supplies & outsourced processes
21.3.2 PM / RE – for bulk materials purchased at sites.

#### Procedure:

**21.4.1 Purchasing Process:**
21.4.1.1 All the suppliers are evaluated, approved and a list of approved suppliers is maintained by PRO.M
21.4.1.2 Evaluation of sub contractors is done either by site visit / inspecting their products / based on their past performance with us / competitors / similar industries.
21.4.1.3 If consecutive supplies are rejected due to quality problems, the supplier is reviewed, deleted from the approved list and blacklisted.
21.4.1.4 If supplies are continuously accepted without any quality problem for one year frequency of inspection is reviewed and reduced.
21.4.1.5 Construction materials are purchased only from approved source / authorized dealers.

**21.4.2 Purchase Information:**
21.4.2.1 Purchase order is ensured for its completeness as regard to product, process and QMS by PRO.M– before release.

**21.4.3 Verification of Purchased Product:**
21.4.3.1 All the purchased products are verified as per Quality Plan.
21.4.3.2 If customer needs verification of product at supplier’s premises, the same is also mentioned in CCCL’s Purchase Order.

### Responsibility, procedure, references and records maintained are detailed in the following:

- Purchase procedure QSP No. P0704
- Supplier evaluation procedure QSP No. P0705
- Verification of purchased product procedure QSP No. P0706
22. **Production and Service Provision**

22.1 **Policy:**

22.1.1 All the processes that affect quality shall be controlled, ensured and operated in a controlled manner.

22.2 **Scope:**

22.2.1 All the construction processes done by in-house operation / all sub contracted processes.

22.3 **Responsibility:**

22.3.1 Project Manager / Resident Engineer – For laying down system & allocating resources & proper maintenance of equipment.

22.3.2 QA Engineer – For monitoring of product at all stages.

22.4 **Procedure:**

22.4.1 **The following steps are ensured before actual production is started.**

22.4.1.1 Ensuring correct drawings / specification details.

22.4.1.2 Laying down the process approval & deployment of proper equipment for production & measurement.

22.4.1.3 Ensuring compliance with applicable statutory & regulatory requirements like approvals from local bodies, environmental clearances etc.

22.4.1.4 Ensuring production & measuring equipment used are maintained continuously suitable for use.

22.4.1.5 Provision for suitable verification at intermediate stages as applicable & delivery by authorized person.

22.4.1.6 Various after sales services as per the industry applicable standards till defect liability period.

22.4.2 **Process Planning:**

22.4.2.1 The following activities are planned for production.

22.4.2.1.1 Preparation of Bill of materials

22.4.2.1.2 Availability of all materials at site.

22.4.2.1.3 Availability of all machinery at site.
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23. **Identification and Traceability**

23.1 **Policy:**
23.1.1 All the materials and products shall be identified at suitable stages for future traceability.

23.2 **Scope:**
23.2.1 Applicable for major input basic materials and sub contracted processes.

23.3 **Responsibility:**
23.3.1 Project Manager/RE – for construction / suppliers processes/materials used in the construction PRO.M/Stores incharge – for providing identification in the purchased materials.

23.4 **Procedure:**
23.4.1 Project will be identified by its Name and Location and continued to be identified till handing over of the project.

23.4.2 Major input materials going to the construction will be identified by Brand Name / supplier.

23.4.3 Various sub contracted processes (including proprietary processes) are identified in the respective building/structure.

23.4.4 Person responsible for each stage of production / inspection / delivery are traceable from pour card, and handing over report.

23.4.5 Special customer traceability requirements if any, that is specifically mentioned in the contract is maintained for mutually agreed period.

23.5 Responsibility, procedure and references and records maintained are detailed in identification and traceability procedure QSP No. P0709
24. Customer Property

24.1 Policy:
24.1.1 All Customer properties including personal data shall be stored, preserved, used and accounted for properly.

24.2 Scope:
24.2.1 All materials related to construction supplied by customer, construction equipment if any given in the project and drawings given by the customer.

24.3 Responsibility:
24.3.1 Project Coordinator / Project Manager/ R.E – for implementation as per contract agreement.
24.3.2 QA Engineer / Stores –in-charge – for verification & storage & reporting to Project Manager /R.E on deficiency.

24.4 Procedure:
24.4.1 Identification, verification, preservation and safe guarding of such item against loss / damage / theft and safe handling are discussed and agreed upon with the customer.
24.4.2 Any loss, damage or unsuitable for construction is intimated to customer in writing.
24.4.3 Records for loss or damage are maintained.

24.5 Responsibility, procedure and references and records maintained are detailed in customer property Procedure QSP No. P0710.
25. Preservation of Product

25.1 Policy:
25.1.1 All materials used for construction shall be preserved properly and used for the construction without losing its properties in order to maintain conformity to requirements.

25.2 Scope:
25.2.1 All construction materials.

25.3 Responsibility:
25.3.1 Project Manager / R.E – Materials at site before incorporating into works and after incorporation Stores – In charge – Materials while being stored.

25.4 Procedure:
25.4.1 All raw materials, semi finished / finished products are handled, stored, preserved and delivered in a proper condition to ensure customer satisfaction.
25.4.2 The raw materials received are inspected immediately & stored in their respective ear-marked locations where adequate space is available at site.
25.4.3 Similar materials from different suppliers are identified and checked for condition & suitability for product and are stored according to space availability.
25.4.4 Proper material handling equipment is used to safe guard properties of the material.
25.4.5 Materials are stored in a suitable environment that does not deteriorate quality of materials stored.

25.5 Responsibility, procedure, references & records maintained are detailed in Procedure for Preservation of Product QSP No. P0711.
26. Control of Monitoring and Measuring Equipment

26.1 Policy:
26.1.1 All the inspection and testing equipments shall be controlled, calibrated and maintained to ensure accuracy.

26.2 Scope:
26.2.1 All the measuring and testing equipment used in the site.

26.3 Responsibility:
26.3.1 Project Manager / RE / QAE

26.4 Procedure:
26.4.1 Inspection and test equipment are calibrated at predetermined interval or prior to use by using equipments / master equipment of known accuracy / value and traceable to national / international standards.
26.4.2 Whenever new inspection / test equipment are purchased calibration certificate are received and verified for correctness.
26.4.3 Calibration status is provided on each equipment by unique number indicating current status and subsequent due date for calibration.
26.4.4 Equipment which needs adjustment are done with respect to known master equipment by the original supplier of equipment / authorized dealer.
26.4.5 Care is taken to ensure unauthorized adjustments are not possible.
26.4.6 All equipment are stored and are handled with due care to ensure its repeatability and responsiveness.
26.4.7 In case of non-conformity during calibration the action taken for the nature of uncertainty of measurement is ensured as per Procedure QSP No. P0712.
26.4.8 Records of calibration are maintained with acceptance criteria.

26.5 The responsibility, procedure, references and records maintained are detailed in Procedure for Control of Monitoring & Measuring Equipment QSP No. P0712.
27. Measurement, Analysis and Improvement

27.1 Policy:
27.1.1 CCCL shall measure, analyse and improve the processes.

27.2 Scope:
27.2.1 Product and QMS

27.3 Responsibility:
27.3.1 MR is responsible for the overall operation.

27.4 Procedure:
27.4.1 Data related to conformity to product requirements are monitored and analysed.
27.4.2 Conformity of QMS are analysed through result of Internal Audit.
27.4.3 Management shall continually improve the effectiveness of QMS.

27.5 Responsibility procedure, records maintained and references are detailed in procedure for Measurement, Analysis and Improvement QSP No. P0801.
28. Customer Satisfaction

28.1 Policy:
28.1.1 All Customers satisfaction level shall be measured.

28.2 Scope:
28.2.1 All CCCL Customers.

28.3 Responsibility:
28.3.1 MD / DIR(O)/RM

28.4 Procedure:
28.4.1 Customer satisfaction is measured by any one or more of the following methods:
28.4.1.1 By appreciation letters received by CCCL from customer.
28.4.1.2 References for new projects from satisfied customer / consultants.
28.4.1.3 Receipt of repeat orders from customers.
28.4.1.4 By sending questionnaire to existing customer, and getting feedback.

28.5 Responsibility, procedure, references and records maintained are detailed in procedure for Customer Satisfaction QSP No.P0802
29. Internal Audit

29.1 Policy:
29.1.1 Internal Audit shall be conducted to verify whether QMS related activities are carried out as per planned arrangements and to determine the effectiveness.

29.2 Scope:
29.2.1 Planning, scheduling, implementing Internal Audits / verifying timely CA / PA and follow up actions.

29.3 Responsibility:
29.3.1 Management Representative

29.4 Procedure:
29.4.1 Internal Audits are conducted at planned intervals to ensure that the QMS is in force and the activities are effectively implemented and maintained.

29.4.2 Internal Audits are scheduled on the basis of status and importance of the activities.

29.4.3 Internal Audits are planned and recorded in the yearly calendar of activities.

29.4.4 Internal Audit is done by internally trained / external auditors; auditors shall not audit their own work.

29.4.5 If non-compliance is noticed during audit, NCR is raised against each Non-Conformity.

29.4.6 The concerned department head ensures that timely Corrections, CA/PA is taken for all NCs, and report is sent to MR for Management Review.

29.4.7 During follow up audit, the auditor verifies to ensure that all previous NCs are corrected and closed in an effective manner.

29.4.8 Records are maintained for audit plan, audit, auditor, NCR’s & CAPA.

29.5 Responsibility, procedure, references, and records maintained are detailed in the procedure for Internal Audit QSP No. P0803
30. Monitoring and Measurement of processes

30.1 Policy:
30.1.1 CCCL shall monitor & measure the effectiveness of various processes.

30.2 Scope:
30.2.1 Suppliers efficiency, Internal Audit, Delivery.

30.3 Responsibility:
30.3.1 Suppliers efficiency-PRO.M
30.3.2 Internal Audit – Management Representative
30.3.3 Delivery performance – Project Manager / Resident Engineer
30.3.4 The above factors are monitored and measured
30.3.5 The results of the above are audited and reported to management once in 3 months.
### 31. Monitoring & Measurement of Product

#### 31.1 Policy:
Monitoring and Measurement activities shall be carried out at stages of material receipt, construction & delivery.

#### 31.2 Scope:
- All materials on receipt, product in process & final product

#### 31.3 Responsibility:
- **Receipt of Material:** QA Engineer / Stores In-charge
- **Process of Material and Final Product:** Project Manager / Resident Engineer / QA Engineer

#### 31.4 Procedure:

##### 31.4.1 Receiving Inspection & Testing:
- All materials are inspected / tested on receipt to verify that materials conform to specified requirement before being taken up for further process.
- If items are rejected, those are immediately returned to suppliers.
- Quality Plan & Test Instructions / IS Codes are used for inspection.

##### 31.4.2 In process inspection:
- Inspection is done after marking, excavation, laying P.C.C and back filling.
- Inspection is done after placing shuttering and reinforcement and before placing concrete.
- During process, samples of concrete are taken & inspected for compressive strength.
- IS codes are used as verification standards.
- Subsequent processes are carried out only after the test samples are inspected & accepted are certified by customer.

##### 31.4.3 Final Inspection & Testing:
- Finished constructions are inspected as per specification / check list.
- Before final inspection satisfactory completion of all previous inspection activities are verified.
- Conforming products are only released to customer.
- No positive recall is applicable.

##### 31.4.4 Inspection & Test Records:
- All inspection & test records are authorized by Resident Engineer / Project Manager.
- Only accepted products are authorized for use by Project Manager / R.E.

#### 31.5 Responsibility, procedure, records, and references are detailed in the following:
- Procedure for monitoring and measurement of product QSP No. P0804
- Procedure for verification of purchased product QSP No. P0706
- Procedure for in process inspection and final inspection QSP No. P0707.
32. Control of Non-Conforming Product

32.1 Policy:
32.1.1 All non-conforming products shall be prevented from its unintended use or delivery to customer.

32.2 Scope:
32.2.1 NC Products identified at all stages.
32.2.2 Items which are incorporated / to be incorporated into works alone are covered by this procedure.

32.3 Responsibility:
32.3.1 PRO.M – for purchased materials
32.3.2 QA Engineer / RE / PM – for in process activities

32.4 Procedure:
32.4.1 Raw materials / products which are found non-conforming during receiving inspection & testing are rejected and returned to supplier.
32.4.2 When an item is found non-conforming at later stage, this item is identified & shifted to a specifically ear-marked area to avoid its unintended use.
32.4.3 If any product / activity is found non-conforming during in process testing it is recorded in a NC report by site engineer / QA and Project Manager is informed and PM takes further action to prevent further processing on NC Product / process.
32.4.4 Non-conformities or deviations in the products / processes are jointly reviewed by Project Manager / Site Engineer & remedial / disposal action is decided.
32.4.5 If any deviation is noticed in the works which does not conform to specification, it is reported to customer.
32.4.6 When rework / repair is done it is re-inspected as per original requirement before further operation / delivery.
32.4.7 Item accepted as re-graded is authorized by customer / Project Manager.
32.4.8 Customer complaint on delivered product is recorded & CA/PA is taken.

32.5 Responsibility, procedure, records are detailed in the procedure for control of NC products QSP No. P0805.
33. **Analysis of data**

33.1 **Policy:**
33.1.1 Data shall be collected and analyzed to demonstrate the suitability and effectiveness of QMS.

33.2 **Scope:**
33.2.1 Data related to customer satisfaction, conformity to product requirements, trends of processes and supplier performance.

33.3 **Responsibility:**
33.3.1 Customer Satisfaction – MD / DIR (O).
33.3.2 Conformity to product requirements – PM / RE.
33.3.3 Trends of Processes – Concerned Department Head.
33.3.4 Supplier Performance – PRO. M.

33.4 **Procedure:**
33.4.1 Data related to the following are collected & analyzed for working towards continual improvement.
33.4.2 Customer satisfaction level as shown in QM – MD / DIR (O).
33.4.3 Conformity to product requirements (NC) – Project Manager / Resident Engineer
33.4.4 Characteristics trends of processes & products, including opportunity for PA – PC / PM.
33.4.5 Supplier trend on supply, on time delivery, cost and training needs – PRO.M / by Dept. Heads.
33.4.6 These trends are made as report and sent to MR for Management review meet.

33.5 Responsibility, procedure, records, maintained are detailed in procedure for analysis of data QSP No.P0806.
34. Continual Improvement

34.1 Policy:
34.1.1 CCCL shall continually improve the QMS by reviewing Quality Policy, objectives, Audit results, CAPA and Management Review.

34.2 Scope:
34.2.1 Applicable to the entire QMS.

34.3 Responsibility:
34.3.1 M.D.

34.4 Procedure:
34.4.1 The following data will be used for review:
34.4.1.1 Audit results
34.4.1.2 CA / PA
34.4.1.3 Management Review points
34.4.1.4 Customer Complaints
34.4.1.5 Bench marked results

34.5 Responsibility, procedure, references and records maintained are detailed in continuous improvement procedure QSP No. P0807
35. Corrective Action

35.1 Policy:
35.1.1 Causes of non-conformities shall be identified, analysed and corrected.

35.2 Scope:
35.2.1 All Non-conformities.

35.3 Responsibility:
35.3.1 Incoming products – PRO.M
35.3.2 In process – Project Manager / Resident Engineer
35.3.3 Customer Complaints – SE / Project Manager / RE/RM/PC

35.4 Procedure:
35.4.1 Non Conforming products / Process / Customer Complaint as and when noticed / received it is entered in a register.
35.4.2 NC / Complaints are reviewed and cause for NC is analyzed by involving concerned Dept. personnel.
35.4.3 Corrective actions are decided to avoid recurrence.
35.4.4 Records of CA’s are maintained.
35.4.5 Effectiveness of CA is verified and subsequently reported for Management Review.
35.4.6 Necessary changes in drawing / Process / QMS are made as per document control procedure.

35.5 Responsibility, procedure, references and records maintained are detailed in handling customer complaints Procedure QSP No. P0808 & corrective action Procedure QSP No. P0809.
<table>
<thead>
<tr>
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<th>36. Preventive Action</th>
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<tbody>
<tr>
<td>36.1 Policy:</td>
<td>36.1.1 Potential causes of Non-conformities shall be identified and preventive measures taken.</td>
</tr>
<tr>
<td>36.2 Scope:</td>
<td>36.2.1 All NC observed.</td>
</tr>
</tbody>
</table>
| 36.3 Responsibility: | 36.3.1 MD/DIR(O) is responsible for coordinating the activities.  
36.3.2 Department Heads are responsible for identifying potential non-conformities in the respective Dept. |
| 36.4 Procedure: | 36.4.1 Determine the potential non-conformities and their causes through group discussion.  
36.4.2 The need for preventive action is determined to prevent occurrence and non-conformity.  
36.4.3 Actions need to be taken are determined.  
36.4.4 The results are recorded.  
36.4.5 Review preventive action taken is effective & report to MR for Management Review. |
| 36.5 | Responsibility, procedure, references, and records maintained are detailed in preventive action procedure QSP No. P0810. |