



SHIELD INTERNATIONAL  
CONSTRUCTION

**PROJECT QUALITY PLAN**

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# PROJECT QUALITY PLAN

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# PROJECT QUALITY PLAN

## 1- INTRODUCTION

This Project Quality Plan of SHIELD INTERNATIONAL CONSTRUCTION is bound to satisfy not only the need but the expectation of the clients. This quality plan outlines the approach, policies and procedures for ensuring the delivery of high-quality steel structures to our clients. The aim is to provide a comprehensive framework for managing quality, reducing risks, and ensuring customer satisfaction.

## 2- SCOPE

This document is applicable to engineering, procurement, construction, and commissioning works to be carried out by SHIELD INTERNATIONAL CONSTRUCTION, the quality plan applies to all steel structure projects, including fabrication, erection, and installation of steel structures.

## 3- PROJECT SCOPE OF WORK SUMMARY

The following describes only a brief summary of the project. For detailed scope, reference can be made to the contract documents.

SHIELD INTERNATIONAL Construction has to perform Engineering, Procurement, Construction and Commissioning of a Marine Steel Structure single ground floor building, with cladding. This work shall comprise of the following facilities, systems and activities as a minimum:

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**1- Engineering:** This involve preparing a structural design to be sent to the client for approval and amendments, after the clients final approval, a detailed Tekla Model for the structural design is prepared, and then a detailed fabrication drawings are prepared to be sent for fabrication.

**2- Fabrication:** The steel components are manufactured in a factory or fabrication shop, using precision cutting, welding, and assembly techniques.

**3- Delivery and storage:** The fabricated steel components are then delivered to the construction site, where they are stored and protected until they are ready for installation.

**4- Erection:** The steel components are then erected on site, using cranes and other heavy equipment. This typically involves bolting, welding, or fastening the components together to form the complete structure.

**5- Finishing:** The final step involves adding any additional components, such as insulation, flooring, or cladding, to complete the structure.

*Each of these steps has specific faces, such as the design engineers, project managers, fabricators, erectors, and finishers, who are responsible for ensuring that the project is completed on time, within budget, and to the required quality standards.*



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## 4. DEFINITIONS

The following terms, which will be found in this Project Quality Plan, are defined to suit their purpose on this document only. Other major definitions are described at once in the relevant section where they appear.

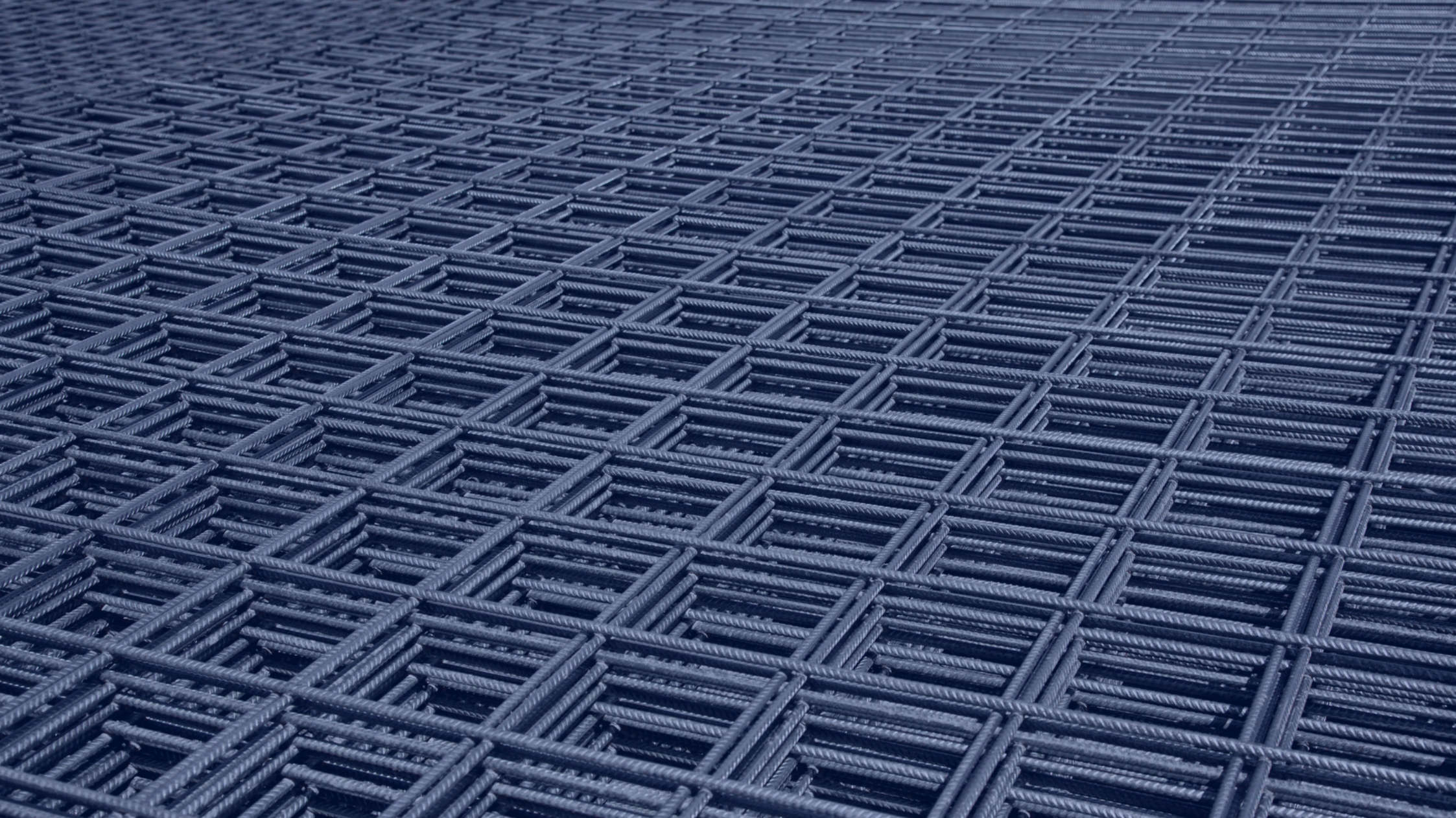
## 5. PROJECT ORGANIZATION

The company has a straight and understandable line of authority from the top down and vice versa with a clear job description and authority of the personnel in charge to initiate action to approve or reject the occurrence of product according to conformity or non-conformity.

The project is to be executed by SHIELD INTERNATIONAL Construction as a Steel Contractor. Accordingly, all works, services and activities will be carried out in a professional manner.

The management of SHIELD INTERNATIONAL Construction shall have an overall responsibility for the satisfactory completion of the Project in terms of safety, quality, time, efficiency and economy. The SHIELD INTERNATIONAL Construction Management shall also be responsible for appointing key personnel to the Project.







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## 6. PROJECT QUALITY MANAGEMENT SYSTEM

### 6.1 PROJECT QUALITY OBJECTIVES

- Ensuring the project quality policy and objectives are understood and implemented by all personnel within their departments.
- Ensuring that staff are familiar with the requirements of the company Quality management procedures and have ready and unlimited access to the same
- Ensuring that staff is adequately qualified and experienced in their relevant discipline to perform their duties of their position in a satisfactory manner
- Verifying that approved procedures are implemented within the department
- Comply with project's technical specification agreed upon.

### 6.2 PROJECT MANAGEMENT

A Project Team headed by the Project Manager is formed to manage the effective execution of all works in completing this project. The Project Manager shall take the lead in ensuring availability of adequate resources i.e. manpower, equipment's for engineering, procurement, construction and commissioning works.

SHIELD INTERNATIONAL Construction has a competitive staff whose aim is to select a range of products in conformity with rules and regulations enforced by international codes of practice.

Most importantly, the team will be directly coordinating with the client Project Team on a regular basis to report project progress and settle any contract and project disputes. Periodic contract review meeting will be held by the team to constantly monitor the project performance.

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## 6.3 DESCRIPTION OF KEY PERSONNEL

### 6.3.1 Sr. PROJECT MANAGER (PM)

Senior Project Manager will be located off-site. Sr. P.M's duties are to:

1. Monitoring of project performance in respect of cost and progress
2. Preparation of the detailed time schedule in coordination with the project Manager, particularly at the initial stage.
3. Overall responsibility for QA/QC
4. Follow up on contractual matters related to the project

### 6.3.2 PROJECT MANAGER / SITE MANAGER (PM)

PM shall be based on the construction site and will be responsible for organizing and managing all construction activities to achieve the efficient and economic completion of the agreement, within the agreed time scale whilst paying due regard to safety and quality.

His duties shall include, but not limited to:

1. Monitoring and advising on labor and material requirements and ensuring the efficient execution of project instructions.
2. Checking and reviewing all correspondence and documents which commit SIC legally, financially and morally before signing and submitting to client.

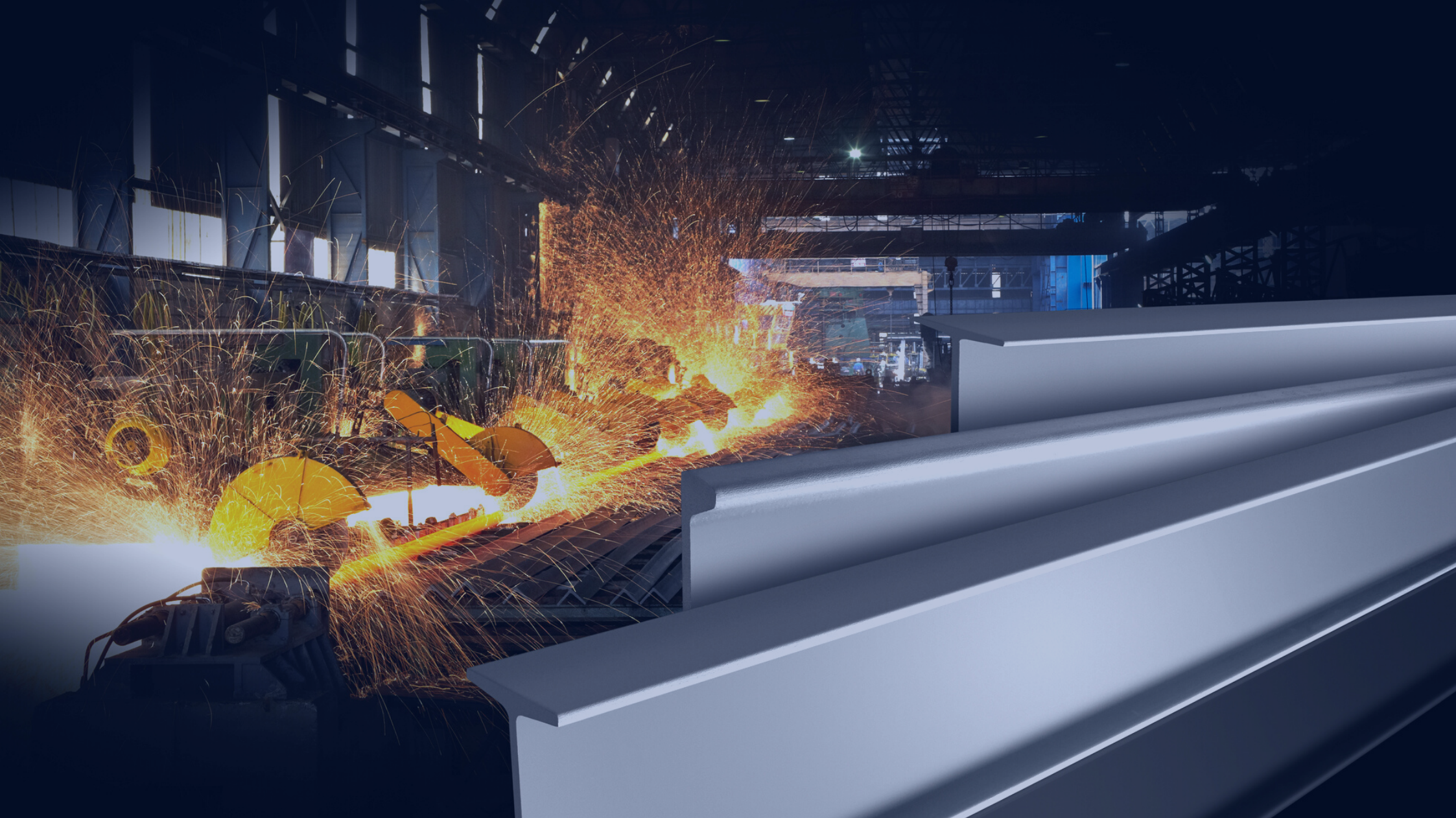


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3. Recording all outstanding subjects with client on a follow-up list and do all what is possible to settle them in the weekly meetings.
4. Reviewing weekly with the section managers the time schedule, Determining the delays occurred during the elapsed week, finding out the reasons and arranging that corrective measures which are Implemented by the parties concerned.
5. Controlling and directing through the respective Discipline Manager all activities such as:
  - Productivity of labor and staff
  - Progress and quality of work
  - Supply and cost of major material
  - Purchase Orders
  - Camps
  - Stores
6. Checking incoming and outgoing invoices jointly the administration manager

## 6.3.3 QA/QC ENGINEER

The QA/QC on behalf of SIC represents the final authority on quality matters. He is independent of production, although he reports directly to the PM, he has direct access to SIC management for all matters related to Quality. This ensures that where matters of quality and production may conflict, the quality matter receives the highest attention.



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His duties shall include, but will not be limited to:

- Implementation and maintenance of the Project Quality Plan and fulfillment of Client's requirements in respect of QC and procedures.
- Identifying and advising on the resolution of non-conformities
- Ensuring that accurate quality records are maintained and distributed as required
- Liaison with Client's quality representatives
- Complete inspection and to record and endorse the results
- Auditing the project Quality System to determine its suitability and effectiveness, and the level of implementation being applied to determine where improvements are needed and recommending investigation and the necessary and appropriate corrective action.

## 6.3.4 SITE SAFETY OFFICER

His duties shall include, but not limited to:

- Periodically, or as circumstances dictates, modify and expand the Safety Policy in conjunction with the Site Manager.
- Assist in investigations of accidents, injuries and or near miss incidents. Analyzes circumstances for "root cause" leading up to & /or
- To explain new rules, regulations and recommendations
- Conducts audits of Safety Performance at job sites to determine the adequate incorporation, implementation and compliance of the Safety Program
- To develop reports and evaluations of Safety performance audits.
- Attend, assists, monitors, and evaluate Safety meetings conducted at jobs site

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## 6.4 ENGINEERING

Design and development shall be carried out based on Company's requirements, national and international codes and standards. Full consideration shall be given to the FEED documents and to the Camp Contractor's previous projects of similar scope. In the execution of the engineering scope of work;

### Drawing:

- Maintaining record of drawings received and the safekeeping of originals for reference
- Distribute copies to persons concerned
- Co-ordination and preparation of all shop/construction drawings  
in conjunction with SHIELD INTERNATIONAL CONSTRUCTION, structural design engineers.

Significant part of the engineering activities is the issue of material requisitions to the Procurement Department based on approved specifications and material take-offs. In executing this activity, the Camp Contractor's standards forms shall be used and records maintained.

Master list of engineering deliverables will be submitted separately to the clients and thereafter will be updated on a weekly basis to reflect the progress and actual status of each document



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## 6.5 PLANNING AND CONTROL

The planning and control team is responsible for elaborating and up-dating the construction schedules, preparing weekly and monthly progress of the different sections and departments involved in the realization of the project.

The project is divided into sections and each section into activities. The activities are reflected on the sections and each section into activities. The activities are reflected on the section schedule and planned on a daily and weekly basis. The work progress per activity is cumulate and reflected on the monthly progress report. The comparison between the man hours per activity and the work progress for this activity allows for a tight control of productivity.

## 6.6 DESIGN & FABRICATION

### Engineering

An engineering team will take responsibility to perform the following:

- i. Prepare all the engineering drawings and detailed shop drawings according to project technical specification.
- ii. Prepare a full Tekla Model for the building.
- iii. Prepare detailed fabrication drawings.
- iv. Prepare Erection drawings.
- v. Prepare working schedule
- vi. Take-off quantities for the procurement department





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## Procurement

The procurement department will take the responsibility to check all the quotations against price for the raw material , and specifications of the material required in order to proceed and issue a purchase order with the required quantities as per the engineering take-off material.

## Fabrication

Material delivered is checked & approved for compliance with specification and distributed on the production lines as follows:

- Steel section for steel structure fabrication of the walls, roof and floor to form the internal skeleton of the unit. Which includes all
- Prefabrication of Built-Up Sections, or Hot Rolled Sections, or Cold Formed sections, using automatic welding machines
- Aluminum Doors & windows. And all plumbing and sanitary fixtures, kitchen etc.
- Carpentry section for false ceiling, floor tiles, and internal partitions.
- Other type of Claddings, example: Alucobond, Sanding Seam weather proof, or others.

In the fabrication of Pre-Engineered Built-Up sections, the following machines are commonly used:

1. Plate Roll Machine: Used for rolling and forming steel plates into specific shapes, such as cylindrical sections or conical sections.
2. CNC (Computer Numerical Control) Cutting Machine: Used for precision cutting of steel plates into specific shapes, such as beams, columns, or purlins.

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3. Drilling Machine: Used for drilling holes in steel plates for bolts and other fasteners.
4. Punching Machine: Used for punching holes in steel plates for fasteners or other components.
5. Welding Machine: Used for welding the steel plates and sections together to form the complete structure.
6. Sandblasting Machine: Used for removing surface contaminants and preparing the steel surfaces for painting or other finishing treatments.
7. Painting Equipment: Used for applying paint or other coatings to the steel surfaces for protection against corrosion and weathering.

These machines are typically operated by skilled technicians and fabricators who are trained in their use and maintenance. The use of these machines ensures that the Pre-Engineered Built-Up sections are manufactured to precise specifications and with high levels of quality and accuracy.

## 6.7 CONSTRUCTION

Construction shall be carried out based on the clients approved for construction designs, procedures, materials and other relevant standards and documentations. Necessary work permits shall be obtained prior to commencing any relevant construction activity.

The construction team is consisting of knowledgeable and highly motivated field Supervisors, and engineers able to provide a full project facility for structural and building services.



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## 6.8 COMMISSIONING

Commissioning shall be carried out based on Company-approved commissioning/SAT procedure and equipment manuals. This activity will be carried out to ensure that the system is safely and efficiently operational as required in the contract.

Testing, Pre-commissioning, commissioning, and putting into service operations are undertaken by a specialized team working in conjunction with the construction group within SHIELD INTERNATIONAL CONSTRUCTION. At this stage, remedial defects are corrected, functional checks conducted, test certificates completed and operating and maintenance manuals are issued.

The full service includes:

- Post-delivery inspection
- Steel Testing Key Phrases
- Material Strength Test: Yield, Tensile, and Elongation.
- Ultrasonic Testing for Defects.
- Charpy V-Notch Test for Toughness
- Brinell Hardness Test.

At the time of commissioning the client staff and personnel are fully conversant with and able to take over.

Relevant commissioning records shall be collated and submitted to the Company as part of the handover documents. Appropriate approval shall be obtained from the Company after the successful commissioning works. Index of relevant standard formats is also available.

Ultimately, an operational acceptance certificate will be obtained from the Company upon successful completion of all commissioning works and related documentation works.



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## 6.9 SUPPORTING QUALITY PROCEDURES

### 6.9.1 INSPECTION AND TEST PLANS

To describe in details the activity, inspection and documentation requirements in performing the EPC works described above, an Inspection and Test Plan (ITP) has been specifically prepared.

Separate ITPs to cover the entire scope of work shall be generated and submitted to the Company prior to start of relevant construction activities. See ITP, s Attached – ATTACHEMENT - 2

### 6.9.2 EXAM AND TREATMENT OF NON CONFORMING PRODUCT

If there are disagrees with the specifications, during the works and control phases, this activity is stopped and non-conforming products are identified. The deficiencies can be found both from the workers and from the workers in control phases.

The Manager of the Quality Service, check of a disagree product, has to report it in the “Report Of Non Conformity” where the following items are prevailed:

- Identification of “Report of Non Conformity”
- Refer to offer
- Identification of Non Conformity product
- Description of the solution
- Others

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The non-conformed item is identified with a red label, signed by the Manager of the Quality Service with identifications relative to the offer or other.

The non-conformed product, in case of substitution with other, and when possible is addressed in a different place till the solution of the disagrees

The solution to the particular disagrees can be:

- Reworking to satisfy the specification
- Discard and substitution

After the solution to the non-conformity condition is done, a new check to verify the fixed action taken towards the satisfactory corrections. If the check results are positives, the Service Manager has to report it in the “Report of Conformity” and sign the documents of acceptance.

If the results of the check are not satisfactory, the Service Manager has to report it in the “Report of Non Conformity” and program a next date for checking and a copy of the same is given to the people that have the out lasted one.

The General Manager is informed through the proper channels about the results of these actions.



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## 6.9.3 MANAGEMENT REVIEW MEETING

Management review meeting will be held every 2 months to verify the effectiveness of the Quality Management System and its continuing suitability to the project. Agenda of the meeting shall include, but not limited to, review of Company's feedback, quality status of the project, audit findings and analysis, corrective and preventive actions, improvement plans and others. Minutes of the meeting shall be maintained as quality records.

### **NOTE:**

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## 7. ACCESS TO WORKPLACE

The Client may, at any time, visit the Camp Contractor's work premises including head office, warehouse and project sites to inspect quality and progress of works and to ascertain compliance with the project requirements or contract scope of works.

Free access is also provided for conducting pre-award quality assessment, quality audits wherein these audits are not be limited to documented procedures only. Company has the full access to all workspaces and records, including in- process works and records.

Client may also check activities of Subcontractors and Vendors at any given phase of their activities to ensure their compliance with this document, and other documented procedures approved by the same.



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