

Annexure D: General Quality Requirements for Contractor and Suppliers





TRANSNET

GENERAL QUALITY REQUIREMENTS FOR CONTRACTORS AND SUPPLIERS

Document Number	TNPA-QUAL-REQ-014.1
Version Number	02
Classification	Unclassified
Effective date	01 September 2023
Review date	31 August 2026



SUMMARY VERSION CONTROL

VERSION NO.	NATURE OF AMENDMENT	PAGE	DATE
110.		NO.	REVISED
1	Replacing Transnet Group Capital with Transnet		11/08/2020
2	Updated with ISO 9001:2015 referencing and adding clause numbering against requirements,		01/09/2023
3	Document number changed from TNPA-QUAL-STD-0001 to TNPA-QUAL-REQ-014.1		01/09/2023

Note: Only the latest amendments and/or additions are reflected in italics in the body of the document.

DOCUMENTATION SIGN-OFF SHEET

I, the undersigned hereby approve this procedure.

ROLE	CAPACITY/ FUNCTION	SIGNATURE	DATE
Process Owner	Quality Manager		01/09/2023

Accepts document for adequacy and practicability.

Comments:



Table of Contents

1.	PURPOSE	5
2.	DEFINITIONS / ABBREVIATIONS	5
3.	APPLICABLE DOCUMENTS	6
3.1	1 GENERAL	ε
3.2		
3.3		
4.	QUALITY SYSTEM	
4.1		
4.2		
4.3		
4.4	·	
4.5 4.6		
	QUALITY AUDITS	
5.1		
5.2		
6.	QUALITY CONTROL PLANS	g
6.1	1 QUALITY CONTROL PLANS	g
6.2	2 Intervention Points	g
6.3	3 FIELD INSPECTION CHECKLISTS	g
7.	INSPECTION AND TESTING	10
7.1	1 GENERAL	10
7.2		
7.3		
7.4		
7.5		
7.6	6 CANCELLATION OF INSPECTION	11
7.7	7 INSPECTION WAIVER	11
8.	FABRICATION PROCESS AND FACTORY ACCEPTANCE TEST	11
8.1	1 FABRICATION PROCESS	11
8.2	2 MATERIAL TRACEABILITY	12
8.3	3 MATERIAL CERTIFICATION	12
8.4	4 FACTORY ACCEPTANCE TEST	12
8.5	5 Inspection Release	13
9.	NON-CONFORMING PRODUCTS	13
9.1	1 GENERAL	13
9.2	2 DEFECTS	13
9.3	3 CORRECTIVE AND PREVENTATIVE ACTION	13
10.	CONCESSION REQUESTS AND TECHNICAL QUERIES	13
10.	0.1 Concession Requests	13
10.	·	
11.	INSPECTION, MEASURING AND TEST EQUIPMENT	14
11.	1.1 CALIBRATION	14
11.		
11.	,	



12.	QUALITY PERSONNEL QUALIFICATIONS	14
12	QUALITY RECORDS	15



1. Purpose

This Specification outlines the minimum requirements to ensure that products and services supplied to TRANSNET are manufactured, provided, constructed or installed in accordance with all specified requirements as defined in the Contract, all associated specifications, drawings, codes and standards.

2. Definitions / Abbreviations

Term, Abbreviation	Meaning
Contract:	Formal document evidencing agreement between <i>Employer</i> and <i>Contractor</i> for supply of on site or off-site services (generic term used for Purchase Orders, Contracts and Service Orders in this Standard).
Contractor.	The party to a <i>contract</i> that provides services to the <i>Employer</i> (Generic term used for Vendors, Suppliers, Contractors, Consultants, etc.).
Contractor Documentation Schedule (CDS)	A schedule specifying the <i>Employer's</i> requirements for the document types to be submitted by the <i>Contractor</i> at various stages of the <i>Contract</i> and the timing of the submissions.
Data:	All drawings/documents/data/information/DPs and IOMs required to be supplied under the <i>Contract</i> .
Data Pack (DP):	A compilation of manufacturing data, certification, inspection and testing records prepared by the <i>Contractor</i> to verify compliance with the Contractual requirements.
Employer.	The party to a <i>Contract</i> or Purchase Order to whom the goods are supplied or for whom the work or services are performed. In the context of this document, Transnet Capital Projects is the <i>Employer</i> .
Field Inspection Checklist (FIC):	A document that details the checks, requirements and test parameters for each type of equipment to permit field installation and pre-commissioning of the equipment
Inspection Release Report (IRR):	A document issued to the <i>Contractor</i> by TRANSNET advising release of materials for shipment. This does not relieve the <i>Contractor</i> of its obligations in accordance with the Terms and Conditions of the <i>Contract</i> .
Inspection Waiver Report (IWR):	A document issued to the <i>Contractor</i> by TRANSNET advising that TRANSNET has waived final inspection for the materials listed in this document. The issue of this report does not preclude further inspections by TRANSNET. It is issued without prejudice and does not relieve the <i>Contractor</i> from the guarantees and obligations included in the <i>Contract</i> .
Installation and Operating Manual (IOM):	A document prepared by the <i>Contractor</i> providing relevant information applicable to the installation and maintenance of the specific equipment, including data relating to consumables (e.g., Oils, etc.)
ISO 9001:2015 terms	"shall" indicates a requirement
Non-Conformance (NC)	Material, product or workmanship which is not in accordance with the requirements of the <i>Contract</i> .
<i>Non</i> -Conformance Report (NCR):	A document initiated by either TRANSNET or the <i>Contractor</i> advising that certain materials/products/workmanship provided by the <i>Contractor</i> do not conform to the required standards and specifications.
Project Quality Plan (PQP):	A document that outlines the <i>Contractor's</i> strategy, methodology, resources allocation, Quality Assurance and Quality Control coordination activities to ensure that Goods and Services supplied meet or exceed the requirements defined in the <i>Contract</i> drawings, codes and standards.



Term, Abbreviation Meaning

Quality Assurance (QA): A formal methodology designed to assess the quality of products or services

provided.

Quality Control (QC): A set of activities intended to ensure that quality requirements are being met.

Quality Control Plan (QCP): A document outlining specific manufacturing/construction inspection and testing

requirements, including responsibilities, test acceptance criteria, nomination of

witness and hold points.

Technical Query Note A document used by the *Contractor* to formally darify a Technical Query related

to the scope of supply. This should not be used where a Non-Conformance

Report has already been initiated.

TRANSNET: Transnet SOE Limited

Works Information: Refers to the Works Information as defined in the Contract

3. Applicable Documents

3.1 General

(TQN):

All work performed shall comply with the requirements of this Specification, the documentation referenced in the *Contract* and the latest revision/edition of the relevant Codes and Standards referenced herein.

3.2 Statutory Regulations

Occupational Health & Safety Act, Act No 85, of 1993 and Regulations as amended.

3.3 Codes; Standards and Procedures

Document No.	Title
ISO 9001: 2015	Quality management systems – Requirements
ISO 10005:2018	Quality Management systems- Guidelines for Quality plans
PROCEDURE 014	Contractor Management

4. Quality System

4.1 General

4.1.1 The Contractor will be responsible for all quality activities necessary to ensure the Work meets the requirements specified in the Contract and shall manage and coordinate all Quality aspects of the Work in accordance with the requirements of this Specification, together with the Contractor's PQP and QCPs once reviewed and accepted by TRANSNET.

4.2 Contractor Quality System Requirements

4.2.1 The *Contractor* shall have and maintain a documented Quality Management System. The *Contractor* may be required to demonstrate its use to TRANSNET. The *Contractor's* Quality Management System should be in accordance with the requirements of *International Standard ISO 9001:2015 Clause 4.4.1 Quality Management System and its process.*

4.3 Kick Off Meeting

4.3.1 After the *Contract* start date, and prior to manufacture or construction activities, TRANSNET will require a Kick-Off Meeting with the *Contractor* to discuss fully the importance of meeting TRANSNET's quality requirements. This meeting may be held as part of the *Contract* kick-off meeting for each package or may be a separate meeting, subject to the critical or complex nature of the work. This requirement for a pre-inspection meeting may be repeated when Sub-Contractors of key equipment are engaged.

Note: The above requirement must be applied in conjunction with ISO 9001:2015 Clause 8.4.3



4.4 Contractor / Supplier Documentation Submittal Requirements

- 4.4.1 The *Contractor sha*ll make a formal submission of his Quality Documentation on award of the *Contract* and at the times defined in the *Contractor's* Documentation Schedule, included in the *Works Information* for the *Contract*.
- 4.4.2 The Contractor's responsibilities are defined in terms of *DOC-STD-0001* which outlines the standard requirements for preparation, submission, receipt, review, and collection of Technical and (or) Deliverable Documentation, as detailed in the Contractor Documentation Schedule (CDS).
- 4.4.3 TRANSNET uses the *Contractor's* Documentation Schedule (CDS), included in the *Works Information* for the *Contract*, to indicate those documents required to be submitted for information/review and/or acceptance.
- 4.4.4 The *Contractor* shall develop and maintain a comprehensive register of documents (*Contractor's* Documentation Register CDR) that will be generated throughout the project. The CDR includes all quality-related documents. The CDR is a 'live' document and is submitted to TRANSNET for review following each revision by the *Contractor*. The CDR indicates the dates of issue of the documents considering sufficient time to allow for the TRANSNET review/acceptance cycle prior to the document being required for use. A sample of a CDR (DOC-FAT-0002) is issued by TRANSNET at the start of every *contract*.

Note: The above requirements must be applied in conjunction with ISO 9001:2015 Clause 8.4.3 Information for external providers

4.5 Project Quality Plan

- 4.5.1 Where specified, the *Contractor* submits a PQP to TRANSNET within the period stated in the CDS and in any event not later than 28 days after the *Contract* start date. The PQP details how the *Contractor's* Quality System will be applied to the Scope of Work specified in the *Contract*, and shall address the following:
 - a) Satisfying the technical and quality requirements of the Contractor's Scope of Work, and relevant elements of the applicable ISO 9001:2015 standard and should be developed with the reference to ISO 10005:2013 Guidelines.
 - b) Include all quality activities relevant to the Scope of Work, identifying all procedures, reviews, audits, controls, objectives, and records used to control and verify compliance with the specified Contractual requirements.
 - c) Include a listing of all special processes (e.g., welding and non-destructive testing, cube testing etc.) envisaged for use, including confirmation of personnel certification as required.
 - d) Include all proposed method statements (for site-based work activities).
 - e) Include a description of the Contractor's project organisation, with key positions and responsibilities identified and individuals named. The organisation structure shall also indicate the resources committed to the management and coordination of QA / QC activities.
 - f) Include a listing of all Quality Control Plans (QCPs), and associated Field Inspection Checklists (FICs), as applicable.
 - g) Identify in the PQP any Sub-Contractor/Sub-Supplier work. Sub-Contractor/Sub-Supplier plans are approved by the Contractor, and a copy forwarded to TRANSNET for information.
 - h) Include the proposed Authorised Inspection Authority (where applicable for pressurised equipment and systems).
 - i) Include proposed quality records.
- 4.5.2 The PQP shall be controlled and re-submitted for approval when required to incorporate any change necessary during the *Contract* duration to ensure that the document is maintained as an effective control, change management and records. The change management will be done to an agreed policy or procedure.

Note: Where the *Contractor* is required to provide a PQP, no work shall commence until the PQP is accepted by TRANSNET.

Note: The above requirements must be applied in conjunction with ISO 9001:2015 Clause 8 Operations



4.6 Procedures

- 4.6.1 The *Contractor's* PQP and procedures shall address the system elements and activities appropriate to the Scope of Work, in compliance with the specified Quality Standard.
- 4.6.2 Where specified, the *Contractor* shall submit copies of Quality Procedures for review. In addition, the *Contractor* shall ensure that copies of all Procedures relevant to the Scope of Work are available for reference by TRANSNET at each work location.
- 4.6.3 These will include, as applicable, the following:
 - a) Document Control, the *Contractor's* PQP shall provide a description of how documents provided by TRANSNET to the *Contractor* are to be managed. The description shall address as a minimum:
 - Management tools and databases
 - Receipt, registration and maintenance
 - Internal and external distribution to Employer, third parties and Sub-Contractors
 - Management of Codes, Standards and Specifications
 - Internal review and approval routines and authorities
 - How it is ensured that the correct revisions of documents are available at the point of use including retention periods for all documentation

Note: The above requirement must be applied in conjunction with ISO 9001:2015 Clause 7.5 Documented Information

b) Design Control procedure, where the *Contractor* is responsible for any aspect of design related to the Scope of Work, the Quality Plan shall describe the *Contractor's* methods and procedures for the control of these design activities.

Note: The above requirement must be applied in conjunction with ISO 9001:2015 Clause 8.3 Design and development of products and services

c) Procurement procedure, where the *Contractor* is responsible for any aspect of procurement related to the Scope of Work, the Quality Plan shall describe the *Contractor's* methods and procedures for the control of these activities.

5. Quality Audits

5.1 Contractor Audits

- 5.1.1 The *Contractor* shall Carry out audits in accordance with its Quality System at its own and Sub-Contractor's facilities to ensure project quality requirements are being achieved.
- 5.1.2 The *Contractor* shall include a QA Audit Schedule in the *Contractor* PQP submitted to TRANSNET prior to commencement of the Scope of Work. The Audit Schedule shall include all audits to be implemented by the *Contractor* and Sub-Contractor during the execution of the *Contract*.
- 5.1.3 The *Contractor* shall, where stipulated in the *Contract*, perform an audit within three months after the *Contract* start date and thereafter at a minimum frequency of three months. Audit reports are submitted to TRANSNET at the completion of each Audit. Where unsatisfactory performance is evident, TRANSNET will direct the *Contractor* to perform additional audits.

Note: The above requirements must be applied in conjunction with ISO 9001:2015 Clause 9.2 Internal Audit

5.2 Transnet Audit

5.2.1 Upon the appointment of the Contractor, the project Quality Officer will schedule and conduct the QMS Audit at the contractor's head office to assess the *Contractor's* ISO 9001:2015 Quality Management System status.



- 5.2.2 TRANSNET reserves the right to perform quality audits or participate as an observer in *Contractor* audits to verify compliance with the Contractual requirements. The *Contractor* shall, within the time frame as agreed upon, correct any adverse audit finding advised by TRANSNET.
- 5.2.3 The *Employer* may, at own discretion, require a Quality Audit of sub-contractor(s) to ensure that the sub-Contractor(s) have the necessary management, facilities, skilled staff, and quality control facilities to carry out the Works to ensure compliance with the Works Information.

6. Quality Control Plans

Note the of requirements of 6.1 to 7.7 9must be applied in conjunction with ISO 9001:2015 Clause 8.5 Production and Service; ISO 10005:2018

6.1 Quality Control Plans

- 6.1.1 The *Contractor* shall prepare and submit QCPs to TRANSNET for review in accordance with the requirements of the Contract and PQP.
- 6.1.2 QCPs must clearly identify all inspection, test and verification requirements to meet the Contractual obligations, specifications, drawings and related details including destructive and non-destructive testing, acceptance criteria, witness and hold points.
- 6.1.3 The *Contractor* shall NOT commence fabrication or manufacture prior to review and approval of the applicable QCP by TRANSNET.
- 6.1.4 QCPs shall include reference to all tests specified in the Works Information.

6.2 Intervention Points

6.2.1 The QCP identifies points in the fabrication, manufacturing and/or installation process that are selected for inspection. These points are denoted by the following inspection codes:

a) Hold Point (H)	Inspection points in the manufacturing cycle, beyond which work shall not proceed without the specified activity, work or function being witnessed. Hold points require written notification to TRANSNET.
b) Witness Point (W)	An inspection point in the manufacturing cycle that will be witnessed or verified. If TRANSNET confirms it is unable to attend after being provided with the written notification, then manufacture may proceed. Witness points require written notification to TRANSNET.
c) Review Point (R)	A point at which products and quality records are verified and endorsed. Review points are not points that require notification to TRANSNET.
d) Surveillance (S)	An inspection point in the manufacturing cycle during which any activity, work or function is observed. No formal notification is required.

6.3 Field Inspection Checklists

- 6.3.1 For site installation and construction activities, the *Contractor* shall prepare Field Inspection Checklists (FICs) to permit inspection and testing of installed equipment and constructed facilities in accordance with the respective QCPs.
- 6.3.2 FICs are used to record the results of inspection and testing (where applicable). On completion, FICs are submitted to TRANSNET to confirm satisfactory completion of the tests and inspections at nominated QCP witness and hold points.



7. Inspection and Testing

7.1 General

- 7.1.1 Inspection means all activities such as measuring, examining, testing, gauging one or more characteristics of material or service and comparing these with specified requirements to determine conformity.
- 7.1.2 TRANSNET may, at its discretion, perform surveillance inspections at the *Contractor's* premises, the premises of any Sub-Contractor or at the location of the Scope of Work.
- 7.1.3 Dependent on the nature of the Scope of Work and the frequency of inspections, TRANSNET may elect to have inspection personnel resident at the place of manufacture, fabrication, or assembly.
- 7.1.4 The Contractor shall ensure free entry and access is given to TRANSNET, certifying authorities and statutory authorities to inspect the Scope of Work and review procedures and quality records at all parts of the *Contractor's* and Sub-Contractor's premises, or at the location of the Scope of Work while any work or test is in progress.
- 7.1.5 The *Contractor* shall provide TRANSNET with all necessary tools, calibrated measuring equipment, safety equipment and workspace to verify or witness tests in progress.
- 7.1.6 While TRANSNET is at the *Contractor's* premises, the *Contractor* shall provide, free of charge, reasonable facilities including office facilities and reasonable access to a telephone, facsimile machine and computer connection point.
- 7.1.7 The *Contractor* shall provide written notice within a time frame as agreed upon, to allow the attendance of TRANSNET and other representatives at nominated witness and hold points.

7.2 Schedule of Inspection

7.2.1 The *Contractor* shall submit a Schedule showing the proposed dates for inspections and tests nominated in the QCP where witness and hold points are required. The Schedule shall be regularly updated with progress and issued to TRANSNET to show the current inspection and test status.

7.3 Contractor's Inspection

- 7.3.1 The Contractor shall, as a minimum, carry out the inspections as detailed in the Quality Control Plan and maintain the required records for verification by the Employer and/or Third-Party Inspection Authority.
- 7.3.2 For sub-contracted material or services, the Contractor shall ensure that controls are effective, including, where necessary, monitoring of the Subcontractor's works and retention of the necessary records.
- 7.3.3 Signing-off of the Quality Control Plan progressively by all relevant parties is a mandatory requirement following the indicated inspection activity.

7.4 Readiness for Inspection

- 7.4.1 Material or services shall be deemed ready for inspection by the Employer and/or Project Manager only when:
 - a) The Contractor has firstly carried out his own inspection at the stage identified on the relevant Quality Control Plan and is satisfied that material, workmanship and services meet the specified requirements. Documented evidence shall be maintained by the Contractor including signingoff the Quality Control Plan.
 - b) The Contractor shall ensure that the latest revisions of approved drawings and/or procedures with evidence of acceptance by Transnet, his nominated representative or Third-Party Inspection Authority are available.



7.5 Inspection Notification

7.5.1 The *Contractor* shall notify TRANSNET in writing for inspections or tests within the country, arrangements are confirmed at least two working days before the event. For inspection and tests outside of the country, arrangements are confirmed at least seven working days before the event.

Inspection notifications include the following essential information:

- Contract Number
- Location of Inspection or Test
- Nature of Inspection or Test
- Date and Time of Inspection or Test
- Name and telephone number of the Contractor's Representative.

7.6 Cancellation of Inspection

7.6.1 Contractors are advised that it is a condition of Purchase / Contract that all costs of Employer's representative and/or Third-Party Inspection Authority will be passed on to the Contractor for cancellation of inspection visits.

7.6.2 A visit is considered cancelled if:

- a) The Contractor advises "readiness" for inspection and upon arrival of Employer's representative or Third-Party Inspection Authority, the material, or Services and/or the associated documentation is not ready; or
- b) If Employer's personnel identify that material or services are to specification such that the Contractor's Inspector should have identified the non-conformity prior advising readiness for Employer's or Third-Party Inspection Authority inspection.

7.7 Inspection Waiver

7.7.1 Any Employer's Witness, or review or Hold point may, at the sole discretion of Employer, be waived, which will be followed by an inspection waiver report.

8. Fabrication Process and Factory Acceptance Test

8.1 Fabrication Process

- 8.1.1 It is the *Contractor's* responsibility to ensure that all processes which require prequalified procedures and/or work methods are tested and qualified before work begins at the manufacture's premises. This typically covers such activities as welding, non-destructive testing, special fabrication techniques and painting. When such procedures are requested, no work shall commence at the manufacturer's premises until procedures are approved by TRANSNET.
- 8.1.2 It is the *Contractor's* responsibility to ensure all operators are qualified for the processes in accordance with the procedure and/or applicable standards. Records of qualification of operators shall be maintained by the *Contractor* and made available to TRANSNET when requested.
- 8.1.3 Records of qualification of procedures and processes shall be maintained by the *Contractor* in accordance with the applicable procedure or code.
- **8.1.4** The Employer's representatives are also required to do inspections during fabrication to ensure that the fabrication process is in accordance with the designs, specifications, and standards to ensure the work meets the requirements specified in the Contract.**8.1.1** Welding Procedures
- 8.1.5 Where the *Contractor's* Scope of Work includes fabricated weldments, Welding Procedure Specifications (WPS) defining the method, preparation and sequences to be adopted to achieve a satisfactory welded joint shall be provided for all weld types required in the execution of the *Contractor's* Scope of Work. The procedure shall only be submitted to TRANSNET when requested in the *Contract*.



- 8.1.6 WPS includes all welding essential and non-essential variables for each process used, including appropriate test results. WPS comply fully with the standard or code pertaining to welding required in the execution of the *Contractor's* Scope of Work.
- 8.1.7 When requested in the *Contract*, a suitably marked "weld map" is completed by the *Contractor* for all items to be fabricated. A summary of WPS is prepared and, when used, is identified on the weld map.
- 8.1.8 Where TRANSNET approval is required, fabrication is not to commence until written approval of WPS and Welding Procedure Qualification Records (WPQR) is received by the *Contractor*. No welding fabrication will be accepted that is not covered by a TRANSNET approved WPS/WPQR.
- 8.1.9 Welding Procedure Qualification (WPQ) tests may be witnessed by TRANSNET and/or an independent inspection authority. Testing of the specimens prepared during the WPQ Tests is carried out by an approved testing laboratory, independent of both TRANSNET and the *Contractor*. In certain instances, a certificate to EN 10204 3.1 B may be required which will be darified at Tender review and clarification stage.
- 8.1.10 Where actual weld deposit analysis and weld metal physical properties are required for procedure qualification, the information is taken from the procedure qualification tests. Data listed in the catalogues of the manufacturer of welding consumables is not acceptable.
- 8.1.11 Welders/welding operators are qualified in accordance with the relevant welding code prior to commencing production fabrication. Specific Welder Qualification (WQ) records will be reviewed by TRANSNET in the *Contractor's* works and should NOT be submitted for review.
- 8.1.12 A register of welders qualified to work shall be maintained by the *Contractor*.

8.2 Material Traceability

- **8.2.1** Where, and to the extent that material traceability is required, the *Contractor* shall provide its procedures for the maintenance of material identification throughout all phases of manufacture. Methods of identification, routines for re-stamping or stenciling as appropriate shall be defined and agreed with the *Employer*.
- 8.2.2 Adequate records shall be maintained throughout construction enabling traceability of key materials from final product back to original material certificates. The material traceability records shall form part of the DP.
- 8.2.3 The *Contractor* shall prepare a schedule of materials and equipment that are subject to traceability requirements.

8.3 Material Certification

- 8.3.1 Where specified in the Contract the following certificates shall be provided to TRANSNET and included in the DP.
 - a) Type A: A Contractor's certificate of compliance with the Contract. This certifies that the goods or services are supplied in compliance with the Contract without mention of any test results (EN10204 certificate 2.1).
 - b) Type B: A certificate issued by a laboratory or test facility independent of the Contractor's works. It shall quote test results carried out on the product supplied and state whether compliance with the relevant technical standard, code, etc., has been complied with. (EN10204 certificate 3.1B).
 - c) *Type C:* The same as Type B, the tests are to be witnessed by a third party (EN10204 certificate 3.1C).

8.4 Factory Acceptance Test

- 8.4.1 The factory acceptance test (FAT) is a process that evaluates the equipment during and after the assembly process by verifying that it is built and operating in accordance with design specifications.
- 8.4.2 The Contractor shall conduct a Factory Acceptance Test for all Plant's to be installed as part of the Works to be executed in this Contract prior to delivery to site. The Factory Acceptance Test shall be conducted in the presence of the Employer's representatives (Quality, Engineering and/or the Third-Party Inspection Authority).



8.5 Inspection Release

- 8.5.1 At completion of the Scope of Work, either in total or in phases, TRANSNET may issue an Inspection Release Report (IRR) or an Inspection Waiver Report (IWR).
- **8.5.2** The issue of either an inspection release or waiver of inspection does not relieve the *Contractor* of its obligations under the *Contract.* The *Contractor* ensures that a copy of the release note and final expediting release note for transport, where appropriate, is attached to the delivery docket and accompanies the Work to the designated destination indicated in the *Contract.* Items delivered to TRANSNET without a copy of these documents may not be accepted.
- 8.5.3 A copy of the inspection release or waiver of inspection is included in the DP.

9. Non-Conforming Products

9.1 General

Note the requirements of 9.1 to 9.3 must be applied in conjunction with ISO 9001:2015 Clause 10.2 Nonconformity and Corrective action

- 9.1.1 The *Contractor* shall establish and maintain procedures to control material or products that do not meet the specified requirements.
- 9.1.2 All Contractor product and/or materials identified as not conforming to requirements shall be dealt with promptly as follows:
 - a) If the *Contractor* discovers material or product which is not in accordance with the requirements of the *Contract*, i.e., a non-conformance, the *Contractor* shall immediately initiate the non-conformance procedure in terms of the *Contractor's* Quality Management System, advise TRANSNET promptly, and provide a copy of the non-conformance report (NCR) to TRANSNET
 - b) If TRANSNET or its agent identifies a non-conformance, a TRANSNET NCR may be raised.
- 9.1.3 Originals of all closed out NCRs shall be included in the DP.

9.2 Defects

9.2.1 The project Quality officer will notify the NEC supervisor / Construction Manager of any defects observed and long them on the snag list.

9.3 Corrective and Preventative Action

- 9.3.1 If the Contractor proposes a disposition of any non-conforming materials or product which varies from the requirements of the Specification or *Contract*, such a proposal shall be submitted in writing to TRANSNET whose decision on the proposal shall be obtained in writing before the non-conforming material or product is covered up or incorporated into the Works, or is the subject of any other disposition.
- 9.3.2 The disposition of non-conformances which do not vary the requirements of the *Contract*, specification or drawings may be approved by the *Contractor* following discussion and agreement with TRANSNET.

10. Concession Requests and Technical Queries

10.1 Concession Requests

- 10.1.1 Where a *Contractor* requests a Concession to deviate from the requirements of the *Contract* or specified requirements, the *Contractor* raises the request for TRANSNET review and approval.
- 10.1.2 The Concession Requests shall clearly identify all elements of the proposed deviation together with any resulting technical, commercial and/or schedule impacts.
- 10.1.3 Completed original Concession Requests shall be included in the DP.



Note: The above requirements must be applied in conjunction with ISO 9001:2015 Clause 8.7 Control of Non-Conforming outputs

10.2 Technical Queries

- 10.2.1 For clarification of technical issues (only), the *Contractor* may submit a Field Engineering Query (FEQ) to TRANSNET in accordance with the *Contract*.
- 10.2.2 The FEQ shall clearly identify all elements of the query, and all supporting documentation and/or drawings shall be attached where appropriate.

Completed original FEQ's shall be included in the DP.

11. Inspection, Measuring and Test Equipment

Note the requirements of 11.1 to 11.3 must be applied in conjunction with ISO 9001:2015 Clause 7.1.5.1 &7.1.5.2 General and Measurement traceability

11.1 Calibration

- 11.1.1 The *Contractor*, including its Sub-Contractors/Sub-Suppliers, shall ensure the calibration of test and measuring equipment is performed and maintained in accordance with the relevant *Contractor* procedures and/or the equipment manufacturer's specifications.
- 11.1.2 Where calibration is required by an external laboratory, the *Contractor* shall ensure that the facility selected for calibration possesses current certification. Calibration certificates shall contain a statement that the test equipment is accurate to within specified tolerances.
- 11.1.3 The Contractor should establish the frequency of calibration for each item of equipment (including jigs, fixtures or templates) and record the details in a 'Measuring and Test Equipment Register' (or similar).

11,2 Use of Inspection, Measuring and Test Equipment

- 11.2.1 The *Contractor* shall ensure that authorized equipment users:
 - a) Use the equipment in accordance with manufacturer's instructions, and accepted industry practices
 - b) Ensure the equipment is covered by a current calibration certificate
 - c) Conduct the measurements or tests in accordance with the equipment manufacturer's specifications or other relevant specification
 - d) Prior to commencement of each inspection or test activities:
 - Identify the measurements to be made
 - Determine the accuracy required
 - Select the appropriate inspection, measuring or test equipment for the scope of work.

11,3 Verification of Previous Test Results

- 11.3.1 Where the calibration status of the equipment is unknown, expired or has doubtful accuracy, the equipment shall immediately be quarantined, and tagged according to *Contractor's* Quality System procedures. The *Contractor* shall then arrange for either in-house or external calibration, and:
 - a) review all previous test results associated with the suspect equipment;
 - b) identify the inspections, measurements or tests required to re-validate the results;
 - c) ensure that suitable re-testing is performed with calibrated equipment;
 - d) record the results of the re-testing on the respective inspection and test documentation.

12. Quality Personnel Qualifications

12.1.1 The contractor shall nominate/appoint a Quality officer with minimum experience and qualifications specified in the Tender documents.



- 12.1.2 The Contractor shall submit the CV and relevant qualifications of its nominated/appointed quality representative for the Project Manager's review and approval.
- 12.1.3 Should the approved qualify officer be no longer available, the contractor will notify the Project Manager in writing and upon agreement the contractor will provide the CV and qualifications of the proposed resource that is equivalent to the previously approved.

Note: The above requirements must be applied in conjunction with ISO 9001:2015 Clause 7.2 Competence

13. Quality Records

- 13.1.1 *Contractors* shall maintain Quality Records necessary to provide objective evidence that demonstrates and verifies achievement of the QA / QC requirements associated with the Scope of Work.
- 13.1.2 All Quality Records, including original source material test certificates and non-destructive test reports, shall be retained by the *Contractor* during the project, and be provided to TRANSNET at the times, and in the quantities specified in the *Contract*.
- 13.1.3 The *Contractor* shall collate all quality records in the Data Pack (DP) and submit the DP to TRANSNET in accordance with the *Contract* and all referenced standards and specifications. This DP shall be compiled progressively and shall be available for review at all phases of manufacture or construction activities.
- 13.1.4 The Scope of Work shall not be complete until the *Contractor's* DP, including the quality records from Sub-Contractors/Sub-Suppliers, has been reviewed and accepted by TRANSNET.
- 13.1.5 The *Contractor* compiles the DP progressively during the execution of the Scope of Work and makes the DP available for review by TRANSNET as required.
- 13.1.6 The *Contractor* shall retain a copy of all Quality documentation generated during the *contract*, including a copy of the complete DP, for his own records for a minimum period of five years after the completion of the work.

Note: The above requirements must be applied in conjunction with ISO 9001:2015 Clause 7.5.3 Control of Documented Information



Annexure E: Document Management and Control

Contractor Documentation Submittal Requirements

DOC-STD-0001

Prepared by:	R. Herholdt	21/09/2009 Date
Reviewed by:	N Uys, Q Koen, G/Whyte	6/07/2009, Date
Approved by:	Mesch A. Wilson	13/10/09 Date

	Date	Revision Details
0	15/12/2008	ISSUE FOR REVIEW
01	23/01/2009	CORRECTIONS
02	18/05/2009	CORRECTIONS
03	25/08/2009	NEC Requirements checked



Table of Contents

1.	Purpose	. 1
2.	Scope	. 1
3.	References	. 1
4.	Definitions / Abbreviations	. 2
	4.1 Definitions4.2 Abbreviations	
5.	Responsibilities	. 4
	5.1 Contractor	
6.	Procedure	. 4
	6.1 Documentation to be Submitted 6.1.1 Contractor Documentation Schedule (CDS) (DOC-FAT-0001) 6.2 Contractor Documentation Register (CDR) (Annexure B) 6.3 Format in which Documentation is to be submitted 6.4 Documentation Preparation Requirements 6.4.1 Quality. 6.4.2 Standards and Codes 6.4.3 Language. 6.4.4 Units and Dimensions 6.4.5 Sizes of Documentation 6.4.6 Documentation with Multiple Sheets 6.4.7 Details Required on Documentation 6.5 Electronic Documentation Requirements. 6.5.1 Table 1: Acceptable File Formats 6.5.2 Security. 6.5.3 Scanning Requirements. 6.6 Documentation Numbering.	
7.	Revising Documentation	L2
	 7.1 Revision Notes 7.2 Indicating Revisions 7.3 As-Built / Final Revisions 	13
8.	Documentation Submission	L3
	8.1 Documentation Submission Format. 8.2 Electronic Transmission. 8.3 Hard Copy Transmission. 8.4 Transmittal Notes (Annexure A). 8.5 Formats and Quantities of Documentation. 8.6 Address for Submission.	13 14 14 14
9.	Review and Acceptance of <i>Contractor</i> Documentation	L4
	9.1 Contractor Review Label (CRL)	15 15





Contractor Documentation Submittal Requirements

9.1.2 Review of Documentation	15
9.1.3 Review Period	16
9.1.4 Revised Documentation	
10.As-Built / Final Documentation	17
10.1 Definition of Final and As-Built Status of Documentation	17
10.1.1 "Final" Documentation	
10.1.2 "As-Built" Documentation	17
10.2 Preparation of As-Built Documents	17
10.2.1 Projects Documents	
10.2.2 Design, Supply and Install Contractor Documents	18
11.Installation, Maintenance and Operating Manuals and Data Books	18
12.Cancelling and Superseding Documentation	19
12.1 Superseding	19
12.2 Cancelling	19
13. Records	19



Contractor Documentation Submittal Requirements

1. Purpose

This standard outlines the documentation requirements that are to be implemented by the *Contractor* for the preparation, submission, receipt, review, and collection of Technical and (or) Deliverable Documentation, as detailed in the Contractor Documentation Schedule (CDS).

Contractor documentation is of the utmost importance for the in-house Engineering activities as the information contained in the *Contractor's* documentation interfaces with several other disciplines for the Engineering, e.g., Mechanical, Structural, Piping, Control and Instrumentation, Electrical, etc.

The supply of high quality documentation within the time required as defined in the 'Works Information', Contractor Documentation Schedule (CDS), and Contract must be considered as one of the main objectives by the Contractor.

2. Scope

This scope defines the *Contractor's* responsibilities in terms of the preparation of all the *Contractor* Deliverables required for each *Contract*.

3. References

• ISO 9001:2000 - Quality Management Systems Requirements

• SANS 10111 - Code of Practice for Engineering Drawings

• SANS 10143 - Building Drawing Practice

DOC-FAT-0001 - Contractor Documentation Schedule (CDS)

• DOC-FAT-0002 - Contractor Documentation Register (CDR)

• DOC-FAT-0003 - Contractor Review Label (CRL)

DOC-FAT-0004 - Contractor Review Label (CRL) for drawings



4. Definitions / Abbreviations

4.1 Definitions

`As-Bui l t' Document	Is a final record of what was actually installed / constructed according to the Fabrication / Construction <i>Contractor</i> , and includes all deviations or changes from the approved AFC document(s). As-Built document(s) are required to reflect the same degree of detail as the original document(s). As-Built document(s) shall be done by all <i>Contractors</i> .
Contract	Formal document evidencing agreement between <i>Employer</i> and <i>Contractor</i> for supply of on site or off site services (generic term used for Purchase Orders, Contracts and Service Orders in this Procedure).
Contractor	The party to a contract that provides services to the <i>Employer</i> (generic term used for Vendors, Suppliers, Contractors, Consultants, etc.).
Controlled Document	Any document where its revision and distribution are recorded to ensure that Project Team Members holding a copy of the document have the current revision, and will receive future revisions, subject to a formal review and approval process.
Documentation	Collective term used to describe drawings and documents, e.g., letters, faxes, drawings, specifications, reports, manuals, standards, publications, software, etc.
Document Control	The function that ensures systematic registration, distribution, retrieval, status reporting, and storage of revision controlled documentation, typically Technical and (or) Deliverable documentation.
Document Management	Is the over-arching term used to describe the management of documentation on a Project.
Employer	The party to a Contract or Purchase Order to whom the goods are supplied or for whom the work or services are performed. For this project Transnet National Ports Authority is the <i>Employer</i> .
Employer's Documentation	Shall mean all documentation issued to <i>Contractors</i> by the Project.
Engineering Deliverables	Technical documentation generated by Engineering, i.e. drawings, drawing registers, Engineering Document Registers, calculations, requisitions, equipment lists, design specifications, etc.



`For Record' Document	A set of record drawings / documents conforming to the marked up prints, drawings and other data, handed over to the <i>Employer</i> as part of the Project Handover Procedure.						
Master Document	he original wet signed (signature) document which is held by roject Office Document Control.						
Native/Source Document	Original electronic file format of documentation.						
Project Deliverables	Is any document, drawing, report, register, task, etc.						
Project Manager	The Project Manager is appointed by the <i>Employer</i> , and his role to manage the Contract for the <i>Employer</i> .						
Squad Checking	The review of technical documentation by multiple Engineering disciplines in order to ensure co-ordination, communication and interface between the various disciplines; done in an area specifically allocated for the review of documentation; the process / activity is controlled by Document Control but the work is executed by the Engineering Team.						
Tender Document	The formal document that expresses the terms, both Commercial and Technical, against which a Tenderer submits its Tender for Contracts.						
Transmittal	Is documented evidence of the formal distribution of documentation to recipients which display Transmittal No., Title, Date, Issue Reason, Revision No. etc. It is evidence of distribution and receipt of documentation.						
Uncontrolled Document	Any copy of a document where distribution is not required to be recorded, and that does not require revision control or formation.						
Working Document	The main working copy of an original document where proposed changes are recorded for incorporating into subsequent revisions.						
`Works Information'	Shall refer to the Works Information as defined in the Contract						

4.2 Abbreviations

AB

AFC	Approved For Construction			
CDR	ontractor Documentation Register			
CDS	ontractor Documentation Schedule			
CRL	Contractor Review Label			
DC	Document Control			
DCIS	Document Control Instruction Sheet			
EDMS	Electronic Document Management System			
FN	Final			
RE	Responsible Engineer			

5. Responsibilities

5.1 Contractor

The *Contractor* is responsible for submitting all documentation, required by the Contract, via Document Control to the relevant *Project Manager*, to comply with the requirements of this standard.

The *Contractor* is responsible for setting up and maintaining his own internal Document Control Process to ensure traceability and accountability for all information submitted to the *Project Manager*, and all information issued to Sub-Contractors.

5.2 Sub-Contractors

The *Contractor* is responsible for providing the *Sub-Contractors* with all the relevant information, and for ensuring that the *Sub-Contractors* applies the Standard, and submit their data via the *Contractor* for formal submission to the *Project Manager*. (If the *Contractor* sub-contracts work, he is responsible for providing the Works as if he had not sub-contracted.)

6. Procedure

6.1 Documentation to be Submitted

6.1.1 Contractor Documentation Schedule (CDS) (DOC-FAT-0001)

The CDS states the Employer's requirements for:



- The document types to be submitted by the *Contractor* at various stages of the Contract
- The timing for documentation to be submitted by the Contractor
- The Project Manager completes the Contractor Documentation Schedule (CDS) and includes it with the Enquiry and Contract as an attachment / annexure to the 'Works Information' document. The Contractor submits documentation as required by the Contractor Documentation Schedule (CDS), within the time specified in the Contract All documentation shall be submitted according to the dates specified in the Contractor Documentation Schedule (CDS).

6.2 Contractor Documentation Register (CDR) (Annexure B)

The Contractor Documentation Register (CDR) is a list of documentation that the *Contractor* is to submit in accordance with the *Contract*. The *Contractor* is to use the Contractor Documentation Schedule (CDS) as the basis for developing the Contractor Documentation Register (CDR). The CDS is the minimum requirement, and the *Contractor* is still responsible to include all documentation on the CDR required for the successful completion of the contract even if no CDS has been included in the *Contract*.

The title of the documentation shall adequately define and describe the facility and equipment where applicable. The Contractor Documentation Register (CDR) must be submitted within 2 weeks of the *Contract* award date, unless otherwise indicated on the Contractor Documentation Schedule (CDS) or in the Contract. Once the Contractor Documentation Register (CDR) is submitted, the *Project Manager* in conjunction with Document Control assigns document numbers to each document. The Contractor Documentation Register (CDR) is reviewed and returned to the *Contractor* as defined elsewhere in this Standard. The *Contractor* is to use the exact document numbers and titles as provided and listed by the *Project Manager* on the Contractor Documentation Register (CDR), on each of the documents.

The Contractor Documentation Register (CDR) is a 'live' document that shall be updated and re-submitted by the *Contractor* on a regular basis to reflect any changes made, e.g., updated planned / actual submission dates or addition of new documents requiring new numbers. Changes to a row(s) of the register shall be highlighted in colour across the entire row(s).

The Contractor Documentation Register (CDR) shall be submitted in Excel (electronic format) as well as PDF format upon each submission to the Project, and shall also be submitted with the final documentation, unless otherwise agreed as per par 6.3.

The forecast and actual submission dates shall reflect the dates of the next issue of the documentation, and once this submission reaches conclusion the dates are to be updated to reflect the next issue, i.e., the as-built documentation submission dates.

6.3 Format in which Documentation is to be submitted

Although the aim of this Standard is to encourage all documentation to be managed and submitted electronically the *Contractor* can apply to the *Project Manager* to have these requirements changed to accept only paper copies of all documentation



6.4 Documentation Preparation Requirements

6.4.1 Quality

Documentation shall be of the highest quality to allow immediate and accurate use by the Project Manager, i.e., without any need for interpretation due to possible illegibility, or prints / copies of poor quality.

Any illegible or indecipherable drawings will be systematically rejected and returned to the *Contractor*, who shall in no case allege documentation being rejected and returned as a reason for any delay affecting delivery.

All documentation shall have sufficient borders for punching as required for filing purposes.

6.4.2 Standards and Codes

All documentation shall conform to the latest revisions of the following, i.e.,:-

SANS 10111 - Code of Practice for Engineering Drawings, or

• SANS 10143 - Building Drawing Practice, or

• ISO 9001:2000 - Quality Management Systems Requirements

6.4.3 Language

All drawings and documents shall be in English.

6.4.4 Units and Dimensions

All units and dimensions on the *Contractor's* documentation shall be in SI units, unless otherwise specified.

6.4.5 Sizes of Documentation

6.4.5.1 Drawings

The following standard drawing sizes shall be used:

• A3 - 277 x 420mm

• A2 - 420 x 594mm

• A1 - 594 x 841mm

• A0 - 841 x 1189mm

Note:

- Drawings wider than A0 are not acceptable to the Project Manager
- Hard copy drawings shall be printed out at actual size, e.g., shall not print A1 size when drawing size is A0
- A4 drawings are prohibited unless issued as part of a document.



6.4.5.2 Other Documents

All the *Contractor's* documentation other than drawings shall be prepared on standard A3 or A4 size sheets suitable for insertion into an A4 (W71) hard-core binder (file).

All documentation shall have sufficient borders to allow for punching.

6.4.6 Documentation with Multiple Sheets

6.4.6.1 Drawings

If a series of drawings of a particular area is produced by the *Contractor* (e.g., loop diagrams which may have fifty (50) or more sheets) one sequential drawing number shall be used with a series of sheet numbers.

Where more than one sheet is used, the first sheet (numbered 01) shall incorporate an index for all the other sheets in the series, including their current revision status and date.

6.4.6.2 Documents

The *Contractor's* documents with several sheets (e.g., data sheets, reports, etc.) shall be compiled as sets, i.e., a multi sheet document identified as a single document with a single document number. Thus, each sheet is identified individually, e.g., "sheet 10 of 15" and all documents shall be numbered from page 2 onwards.

Each set shall include a Table of Contents and the identification data shall as a minimum contain the following, i.e., the document number, revision number, page number and continuation information shall appear on every page of the multiple page documents. The front sheet of each document shall be page 1; however the number or wording "page 1" is not shown on the first page.

6.4.7 Details Required on Documentation

Each drawing and document shall be identified with the following information, i.e.,:-

- Project Name and Number
- Contract Number or Purchase Order Number
- Equipment Tag Number(s) (if applicable)
- Manufacturer's model / type (if applicable)
- Official Name of *Contractor's* Company
- Contractor's Reference Number
- Project Document or Drawing Number
- Electronic File Name (identical to the *Employer's* Document or Drawing Number and not the *Contractor's* Document or Drawing Number)
- Identification and signature of Originator, Checker, Approver, PR Eng, etc.
- Complete Descriptive Title
- Revision

Date

6.5 Electronic Documentation Requirements

No "Protection" or "password" will be placed on electronic files.

Electronic submissions shall conform to the minimum quality standard as listed below, i.e.,:-

- File Formats to be submitted
- All deliverables submitted by the *Contractor* must be supplied in the formats listed below, and be editable using the software listed in Table 1. Only exceptions that have prior approval from the *Project Manager* will be accepted. Software used shall be the latest generation, and where appropriate, shall be regularly upgraded.

Note:

All electronic documents shall be submitted in Adobe Acrobat (PDF) format and the 'Native' file shall be included at the final submission.

6.5.1 Table 1: Acceptable File Formats

Document Type	Description	
Drawings	Native: Micro Station 2003 or later	
	Published In: Adobe Acrobat (PDF) version 7 or later	
Data Sheets (other	Native: MS Excel 2003 or later	
than instrumentation)	Published In: Adobe Acrobat (PDF) version 7 or later	
Data Sheets (Instrumentation)	Native: As per software used or as otherwise specified in Contract	
	Published In: Adobe Acrobat (PDF) version 7 or later	
Engineering Data Lists	Native: MS Excel 2003 or later	
	Published In: Adobe Acrobat (PDF) version 7 or later	
Calculation Outputs / Results	Native: As per software used or as otherwise specified in Contract	
	Published In: Adobe Acrobat (PDF) version 7 or later	
Document Viewers – Redlining	Adobe Acrobat v7 minimum with "Comments" enabled	
All Reports	Native: MS Word 2003 or later	
	Published In: Adobe Acrobat (PDF) version 7 or later	
Report supporting Data including: Calculations, Charts,	Native: As per software used or as otherwise specified in Contract	



Graphs, Indexes, etc.	Published In: Adobe Acrobat (PDF) version 7 or later					
Manuals	Native: MS Word 2003 or later					
	Published In: Adobe Acrobat (PDF) version 7 or later					
General Documents	Native: MS Word 2003 or later					
	Published In: Adobe Acrobat (PDF) version 7 or later					
Presentations	Native: MS PowerPoint 2003 or later					
	Published In: Adobe Acrobat (PDF) version 7 or later					
Colour Photographs / Scanned Images	Native File format: JPG Compression level 1%					
Graphic Imagery	Published images in: TIF uncompressed or WMF					
	Native image format: Corel Draw 7 CDR file					
	Adobe Photoshop 7.0 PSD					
	PowerPoint 2000 PPT file					
Project Schedules	Native: Primavera P6 (preferred)					
	Native: MS Project					
	Published In: Adobe Acrobat (PDF) version 7 or later					
Databases (preferred)	MS SQL Server 2000					
Databases (non- preferred)	ODBC compliant					
	Microsoft Access 2003					
Data Compression	Software: WinZip 8.0					
Other General Project Data	Native: Microsoft Office 2003 application or later					
	Published In: Adobe Acrobat (PDF) version 7 or later					

6.5.1.1 Native File

Native files shall be clean of all extraneous fonts, formats and styles to ensure inadvertent reformatting and format adjustments or difficulties that do not eventuate in downstream handling of documents.

6.5.1.2 Adobe Acrobat (.PDF) Files

PDF files shall be of a high quality and without dark background shading as definition may otherwise become lost.

The quality of Adobe Acrobat (.PDF) files shall be such that a hardcopy of a laser printed A1 Adobe Acrobat (.PDF) drawing can clearly be read in A3 size. Similarly A3 and A4



Adobe Acrobat (.PDF) file quality shall be such that hardcopy of a laser printed A3 or A4 Adobe Acrobat (.PDF) document can clearly be read in A4 size.

The Contractor shall physically test and confirm this prior to transmitting Adobe files.

PDF files shall be saved as "Reader Extent" to make provision for the use of electronic signatures.

PDF files shall be "Optimized" to improve Quality and then "Reduce File Size" through Adobe.

6.5.1.3 Databases

Databases shall be presented in compatible format on CD Rom as specified in Table 1. Multi format documents (created from several files) shall be combined and submitted as a single Adobe Acrobat (.PDF) file.

6.5.1.4 Drawing Files

These shall be submitted in Adobe Acrobat (.PDF) and the 'Native' file format shall be submitted on the final submission unless otherwise specified. 'Native' files shall include reference / border files, etc.

A single file shall be submitted per document, i.e., under no circumstances shall different drawings with different numbers appear on one sheet under one file name, nor shall a drawing with multiple sheets be saved into one electronic file.

All CAD drawings shall be contained in one single merge file, any form of ex Ref or Reference File will not be accepted.

6.5.1.5 Sketches

These shall be A3 or A4 size scanned as Adobe Acrobat (.PDF) file.

6.5.1.6 Text Documents

Each page of a single document shall be collated into one file. (The "wet" signature Contractor Review Label (CRL) coversheet, where required, is inserted at the beginning of the document prior to review).

6.5.1.7 Tables / Diagrams

These shall be A4 and A3 size only.

6.5.1.8 Reports

Reports containing Word, Excel, DGN, DWG, brochures, etc., shall be compiled as one Adobe Acrobat (.PDF) file.

Note:

Original colour hardcopies shall be scanned in colour to ensure all details of paper documents.

6.5.1.9 Photo's / Video's

Prints should be submitted of conventional photographs or prints and digital files of electronic images, or as specified by the Project Manager.

6.5.2 Security

Files shall be clear of known viruses and extraneous (irrelevant) macro's. The *Contractor* shall at all times have the latest generation of virus protection software. The *Contractor* shall ensure appropriate security systems are in place to prevent unauthorized electronic distributions and (or) unauthorized editing or manipulation of electronic files.

6.5.3 Scanning Requirements

Where possible 'native' files shall be converted to PDF rather than scanned from hardcopy.

Where this cannot be done all drawings and documents shall be manually scanned black and white except where colour image and fonts are required or necessary.

The settings below should be adhered to where possible and may vary depending on scanning software used. Where images rendered with these settings are unreadable, operators shall use their discretion, and adjust colour depth and resolution accordingly.

6.5.3.1 Scan Settings

· Resolution:-

Black and White - 200 dpi

Colour - 100 dpi

Fine Line Drawings - 300 dpi

Image Type:-

Black and White - 1 Bit

Colour Line Drawings - 8 Bit (256 colours) minimum

Colour photos and rendered images - 24 Bit

Use automatic threshold to determine the white and black points

Other Criteria to Adhere to:-

Rotate to correct reading (i.e., viewable at correct orientation)

De-skew (i.e., straighten if on a slant)



De-speckle (i.e., remove background dirt)

Optimized (i.e., reduce file size)

Note:

When a scanned drawing is printed to be re-scanned, subsequent to, e.g., mark-ups or signatures, then it shall be scanned at a setting of 400 dpi.

6.6 Documentation Numbering

Once the Contractor Documentation Register (CDR) has been submitted by the *Contractor*, Document Control will allocate the *Employer's* documentation numbers on the Contractor Documentation Register (CDR) and return it to the *Contractor*.

A unique sequence number is allocated to each document and remains the same for each submittal of that specific document.

The *Contractor* shall use the *Employer's* document numbers and titles exactly as per the Contractor Documentation Register (CDR) on all documentation submitted.

Electronic file names for all documentation shall be exactly as per the *Employer's* documentation numbers, including the revision number.

7. Revising Documentation

All documentation carries a revision block, which must be completed in full before submitting to the *Project Manager*, and typically denotes the following:-

• NO. - Revision Number, e.g., 00, 01, etc.

• DESCRIPTION - Describes the status, e.g., Issued for Tender and a brief description of the changes made.

• BY - Person responsible for revising the document

• CHK'D - Person responsible for checking the revised document

APP'D - Person responsible for approving the revised document

DATE - Date of the revised document

7.1 Revision Notes

The revision block should record each change in revision with a brief but specific description of the changes made.

Terms such as "Minor Revision" or "General Revisions" shall be avoided in favour of a more specific notation.

More than one line may be used but only the revision number and date together with the relevant initials shall appear in the top line.



7.2 Indicating Revisions

Revisions shall be clearly identified by placing a revision triangle with the correct revision number in the right hand column in the case of documents, and is adjacent to the area on the document that has been changed.

All revisions made on drawings shall be enclosed by a cloud except in cases where to add a cloud detracts from the readability of the drawing. At subsequent revisions all clouds and revision triangles from the previous formal revision shall be removed from the drawing.

7.3 As-Built / Final Revisions

Should documentation require changes upon completion of Construction, it shall be revised to an "As-Built" status, as well as bear the wording "Certified As-Built", which is indicated in the revision block of the documentation.

Should documentation not require any changes upon completion of Construction, it shall be revised to a "Final" status, as well as bear the wording "Certified Final", which is indicated in the revision block of the documentation.

8. Documentation Submission

8.1 Documentation Submission Format

All documentation shall be submitted under cover of a Contractor's Transmittal Note.

8.2 Electronic Transmission

The Contractor Documentation Schedule (CDS) defines which documentation shall be transmitted electronically. All electronic documentation shall be transmitted on CD ROM unless otherwise agreed as per Par 6.3.

Documentation submitted on CD ROM shall be contained in a zip file with the Transmittal Note enclosed.

Note:

In the event of documentation required urgently and the *Contractor* is not able to submit a CD ROM and (or) hard copy format timeously, then e-mail transmission may take place (but in extreme cases only)

Per e-mail - the file size may not exceed 5 MB and the Transmittal Note shall be attached.

The *Contractor* is still required to submit the relevant CD ROM to Document Control without delay.

When sending an e-mail the *Contractor* shall ensure that the subject field of the e-mail is completed as follows, i.e.,:



• Contract Number – *Contractor's* Transmittal Number and Description of documentation transmitted.

8.3 Hard Copy Transmission

Documentation shall be submitted in printed hard copy format unless otherwise stated on the Contractor Documentation Schedule (CDS).

8.4 Transmittal Notes (Annexure A)

All documentation shall be submitted under cover of the *Contractor's* Transmittal Note indicating all *Contract* references (i.e., Project No, *Contract* No, etc.), Project Documentation Number(s), Revision Number, Title and Chronological listing of transmitted documentation.

The *Contractor's* Transmittal Note shall state the purpose / issue reason of the documentation submission.

Documentation for different purposes must be sent on separate *Contractor* Transmittal Notes. The *Contractor* shall note that documentation will be rejected if this requirement is not met.

The *Contractor* Transmittal shall be signed, date stamped and returned to the *Contractor* by Document Control.

8.5 Formats and Quantities of Documentation

The required number of copies and formats of documents / drawings shall be specified in the Contractor Documentation Schedule (CDS).

A typical example of quantities and formats would be as follows:-

Pre-Construction – Hard copy and PDF (to be specified in 'CDS')

Construction – Hard copy and PDF (to be specified in 'CDS')

As-Built – Red Lined – Hard copies (Normally 3 off) (to be specified in CDS')

 Certified As-Built / Final – Hard copies (full size) and CD ROMs containing PDF and 'Native' file formats (to be specified in 'CDS')

8.6 Address for Submission

The address of submission will be as specified in the *Contract* and all submissions will be identified with the Contract Number, and the responsible *Project Manager*. All deliveries will be made to Document Control who will distribute the documentation to the relevant *Project Manager*.

9. Review and Acceptance of *Contractor* Documentation

The *Contractor* submits documentation as the *Contract* requires to the *Project Manager* via Document Control for review and acceptance.



9.1 Contractor Review Label (CRL)

The purpose of the Contractor Review Label (CRL) is for the *Project Manager* to assign a review code to the reviewed documentation denoting the status of the documentation after consolidation of comments. The Contractor Review Label (CRL) is to be inserted by the *Contractor* as follows:-

9.1.1 First Submission of Documentation

The first revision is revision '0', with subsequent revisions '1', '2', '3', etc.

9.1.2 Review of Documentation

Acceptance of documentation by the Project will in no way relieve the *Contractor* of their responsibility for the correctness of information, or conformance with the requirements. This responsibility rests solely with the *Contractor*.

Once documentation has been reviewed by the Project, all comments are consolidated and a review code is assigned on the Contractor Review Label (CRL) to the original reviewed / marked-up drawing / document by the *Project Manager*.

9.1.2.1 Review Codes for Contractor Documentation

The Review Code resulting from the review is as follows, i.e.,:-

Code C1 – Accepted

The *Contractor's* design / submission of documentation is accepted and the *Contractor* only needs re-submit documentation only if major changes have been made. The next submission will be the for Approval of "Redline" and / or "Final" documentation.

• Code C2 – Accepted with Comments. Revise and Resubmit

In the event that the Project returns documentation with comments noted, the *Contractor* shall, within the '*period of reply'* as defined in the *Contract Data*, make the required changes and submit the revised documentation for further review on the next revision.

Code C3 – Not Accepted, Revise and Resubmit for Review

In the event that the Project returns documentation with "Not Accepted, Revise and Resubmit" the *Contractor*, within the 'period of reply', make the required changes and resubmit the revised documentation on a new revision for further review. Should these revisions necessitate changes in other related documentation, the *Contractor* shall make the appropriate changes and re-submit all the revised related documentation for further review. The *Contractor* shall not proceed with any activities controlled by the *Contractor's* documentation until it has been re-submitted and acceptance indicated.

The *Contractor* revises and re-submits documentation but on the next revision until a review code 'C1' is achieved. This review process shall not entitle the *Contractor* to submit any claims due to time loss.

• Code C4 – Review Not Required

Documentation signed at "Code C4" level is considered to be for information only and does not require further submission, and shall not be returned to the *Contractor*. However, Document Control shall issue a Transmittal only to the *Contractor* in this regard as notification.

9.1.2.2 Return of Reviewed Documentation

The original reviewed / marked-up drawing / document is scanned to PDF format and a copy is returned to the *Contractor* indicating the *Project Manager's* further instructions.

Return of the reviewed documentation is either in hard copy format, in which case the original reviewed / marked-up drawing / document is returned, or on CD.

Contractors will be advised by e-mail or fax (accompanied by a copy of the Project's Transmittal Note) that documentation is available for their collection.

9.1.3 Review Period

The *Contractor* shall allow the *Project Manager* the 'period of reply' to review and respond to the *Contractor's* submission of documentation, i.e., from time of receipt by the *Project Manager* to the time of dispatch by the *Project Manager*. However, work shall proceed without delay in the event of late return of the documentation by the *Project Manager* with prior notification in writing by the *Contractor*.

9.1.4 Revised Documentation

On receipt of the reviewed documentation the *Contractor* shall make any modifications requested / marked-up and re-submit the revised documentation within *'the period of reply'* on the Contractor Documentation Schedule (CDS). Queries regarding comments / changes should be addressed with the *Project Manager* prior to re-submittal.

Any re-submittals, which have not included the changes / comments identified, will be marked with the applicable review code and returned to the *Contractor* to be corrected and re-submitted. The *Contractor* shall re-issue the revised documentation incorporating all comments on a new revision and other specified details not included in the previous issue within *'the period of reply'* of receipt of the marked-up documentation.

All revised data shall be submitted in its entirety and shall reflect the revision control numbers, and shall also indicate which documentation the revised documentation supersedes, if applicable.

In the case of drawings every sheet has its own revision number and is revised as an individual document.

In the case of documents all sheets under cover of one document number shall be under the same revision number and be re-submitted, even if the revision is a minor one.



10. As-Built / Final Documentation

This is Certified 'As-Built / Final Accepted' documentation or documentation for which no further review is required. The final documentation shall form part of the final *Contractor* Manual(s) or Data Packs

Contractors shall provide the 'As-Built' documentation that form part of the Operating, Instruction and Maintenance Manuals that were issued and accepted prior to 'As-Built' conditions for inclusion in these types of manuals by the *Project Manager*.

10.1 Definition of Final and As-Built Status of Documentation

10.1.1 "Final" Documentation

This applies to "As Manufactured and Delivered to Site".

Documentation submitted subsequently by the *Contractor* once "Final" status is reached shall be indicated as such in the Revision Notes Block as "Final" and shall also reflect the New Revision Number on the document in the revision block provided.

10.1.2 "As-Built" Documentation

This applies to "As Constructed or As Installed".

The Contractor Documentation Schedule (CDS) shall indicate the documents which are to be brought to "As-Built" status, and must be submitted only after practical completion when the documentation qualifies for "As-Built" status, and the period after completion by which they must be finalized.

10.2 Preparation of As-Built Documents

10.2.1 Transnet National Ports Authority Projects Documents

The *Contractor* responsible for completing the construction / installation works shall prepare three (3) marked up hard copies of the applicable documents to represent the As-Built condition(s). The mark-ups shall be in RED pencil or pen and be complete and accurate.

Once prepared the As-Built mark-up documentation is transmitted to Transnet National Ports Authority Projects for updating of the original design documentation.

Documents / drawings updated with information known by the *Project Manager* and as provided by *Contractors* at the completion of their *Contracts* is utilized by the *Project Manager* to update Engineering Deliverables / drawings to this status, i.e., "For Record Purposes".

Note:

File naming convention on drawings / documents shall be in accordance with the Project numbers assigned on the Contractor Documentation Register (CDR).



10.2.2 Design, Supply and Install Contractor Documents

Contractors responsible for the design, supply and installation of equipment are responsible for producing As-Builts of their own documentation.

The *Contractor* shall prepare three (3) marked up hard copies of the applicable documents to represent the As-Built condition(s). The mark-ups shall be in RED pencil or pen and be complete and accurate.

Once prepared the As-Built mark-up documentation is transmitted to the *Project Manager* for Approval through the normal process. Once approved C1 the *Contractor* can proceed to update his drawings and submit as part of the final package

The mark-ups are returned to the *Contractor* so that they can produce the As-Built revisions.

11. Installation, Maintenance and Operating Manuals and Data Books

These shall be supplied by the *Contractor* as manuals in an A4 hard covered, red, grease and waterproof binder using two (2) ring type binders.

Drawings and charts larger than A4 shall be folded and those greater than A3 shall be enclosed in an A4 plastic pocket of adequate strength.

Manuals shall be well indexed and user friendly. Manuals shall include a summarized Table of Contents and in manuals comprising a number of files / volumes there should be one summarized Table of Contents in each of the files / volumes. The draft Table of Contents shall be submitted for review to the Project Manager prior to the compilation and official submittal of the manuals. The technical content of manuals shall be specified by the *Project Manager*.

The originals of all brochures shall be issued to the *Project Manager*. When a general brochure is applicable to a range of equipment, then the specific item, catalogue number or model number shall be stated, which is best achieved by introducing a separate index page, which cross-references the specific item to a tag number.

The address, phone numbers, fax numbers and reference numbers of all *Sub-Contractors* shall be provided.

Where manuals include drawings that still need to be revised to "As-Built" status, and such manuals are required prior to 'As-Built' status, the manual will not be considered to be in its final form until the "As-Built" version of each such drawing has been incorporated.

The required number of copies of the manual(s) shall be as specified by the *Project Manager* and submitted per type or model number of equipment included in the contract, or as specified by the *Project Manager*.

A typical example of what the binder / file(s) shall be marked with on the spine and the front cover is as follows: -

- Project Name
- Manual Title, e.g., Installation, Maintenance and Operating Manual
- FBS No. and Title
- Manual Numbering (e.g., Volume 1 of 2, etc.)
- Contract Number
- Contractor Name

12. Cancelling and Superseding Documentation

The Document Control Procedure for cancelling and superseding is as follows:-

12.1 Superseding

If the document / drawing has been transmitted anywhere and is to be replaced by a different document number / drawing number, then it is superseded. The superseded item should go up a revision and always have the new drawing or document number written across it, as the normal practice.

The Document Controller is to check that this has been done on the drawing or document, and the revision title block should be preceded with:-

• e.g. "SUPERSEDED by 222057-2-211-M-GA-0030....."

12.2 Cancelling

If the item is to be cancelled, it means the item has been previously transmitted and it is not being replaced by another drawing number / document number. In this case the Document Controller should check that the revision has gone up, the word "CANCELLED" is written across the drawing / document and the word "CANCELLED" is placed at the beginning of the revision title block.

13. Records

All documents generated in terms of this standard are to be retained by Transnet National Ports Authority Projects as records in accordance with the requirements of Project Procedure DOC-P-0013.



TRANSNET

Annexure A – Typical Transmittal Note

Document Transmit TO: LOCATION: ATTENTION:			DATE: FROM: ORIGINATOR: PROJECT No: TRANSMITTAL NO.:	DOCUMENT CONTROL			
FOR TENDER PURPOSES / ENQUIRY FOR REVIE				ER specify)			
DOCUMENT NUMBER	REV.		DESCRIPTION		COPY	FORMAT E or H	
DISTRIBUTION :							
ISTRIBUTION .		NAME				lectronic lardcopy	
Sent by :				Date :			



Annexure B — Typical Example of CDR (can be supplied electronically)

DOC-FAT-0002.xls

							TRANSNET
TRANSNET CAPITAL PROJECTS						Y	
Project Number:							
Contract Number:							
	ber:						
TCP Document Number	Document Title (Description)	Contractor's Document number	Rev	Forcasted Submission date	Actual Submission Date		Reason for Issue
			-	ł	ļ	-	
				1	-	-	
		-	-	1	ŧ .	1	
			1		1	1	
			 	i e	ł .	t	
				1	1		
					1		
					ĺ		
					ĺ		
	Ĵ				1		
	Ĭ				Į.		
					ļ	-	
			_			-	
	4		-	1	-	┞—	-
			-	1	 	-	
	+		-	1		\vdash	
	**		 	1	 	\vdash	