



A DIVISION OF TRANSNET LIMITED

DRAWING STANDARDS DOCUMENT

PL 100

REV. 04



APPROVAL

RESPONSIBILITY	DESIGNATION	SIGNATURE	DATE
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A GENERAL STANDARDS

PL 100	Drawing Standards Document
PL 101	Plant & Equipment Tag Numbering Standards
PL 102	Equipment, Instrument and Electrical Symbology Standards
PL 103	General Drawing Standards



1. INTRODUCTION

The objective of this Drawing Standards Document is to establish a set of approved drawing standards and codes of practise that shall be required to be adhered to by both Contractor and Client in the preparation of Engineering Documentation for and on behalf of Transnet Pipelines, a Division of Transnet Limited. By ensuring comprehensive, consistent and uniform means of presentation of information, these Standards and Codes of Practise are intended to facilitate rapid comprehension by the users of the information, and thus assist in the maintenance and fault finding of installed technology.

2. SCOPE

2.1 General

This document defines as a minimum, the general responsibilities for the provision of all Engineering Documentation, whether it be by the Client or Contractor, for and on behalf of Transnet Pipelines. In this regard, providers of Engineering Documentation are required to familiarise themselves with all applicable Standards and Codes of Practice listed herein, and to ensure compliance in the execution of any work in terms of this document. Failure to comply may render the provider liable for corrections at his own cost.

These Standards and Codes of Practise should be read in conjunction with all other Specifications and drawings as issued for a particular contract. Where discrepancies occur, these must be brought to the attention of Transnet Pipelines in writing before commencement of work. In the event of any conflict between the contents of any documents forming part of a contract (as listed in the Schedule of Contract Documents) and this document, the former shall prevail.

This Drawing Standards Document PL100 incorporates two sections as follows:

Section A General Standards

Incorporating Standards PL 101 to PL 103, detailing Plant and Equipment Tag Numbering, Symbolology and General Drawing Standards to be adhered to in the production of Engineering Documentation for and on behalf of Transnet Pipelines

Section B Documentation Typical

Incorporating typicals of all Drawing and Documentation Types. These typicals have been incorporated into the Standards Document for the purposes of conveying both layout and content requirements to be adhered to in the production of Engineering Documentation for and on behalf of Transnet Pipelines.

Prior to commencement of design, contractors are required to request typicals of all relevant Drawings and Documentation to be produced, and should ensure adherence in both content and layout standards. Where Contractors wish to deviate from specified typicals, either in layout or information content, approval will be required to be obtained from Transnet Pipelines prior to commencement of work.

Typicals exist for the following types of documentation:

Process Documentation Standards

- Piping & Instrumentation Diagrams
- Process Flow Diagrams
- Hazardous Area Classification Diagrams
- Hazop Studies

Metering & Instrumentation Documentation Standards

- Instrument Schedules
- Instrument Data Sheets
- Instrument Hookup Diagrams
- Loop Drawings
- Panel Layout and General Arrangements
- Panel Wiring Diagrams
- Cable Schedules (Refer to Electrical Typical)
- Cable Block Diagrams (Refer to Electrical Typical)
- Cable Interface Wiring Diagrams

Software Documentation Standards

- Plant I/O Schedules
- Flow Charts
- Software Listings

Electrical Documentation Standards

- Single Line Diagrams
- Electrical Schematic & Wiring Diagrams
- Panel Layout and General Arrangements
- Cable Schedules
- Cable Block Diagrams
- Cable Interface Wiring Diagrams

Mechanical Documentation Standards

- General Arrangement Diagrams

Civil/Site Layout & Survey Documentation Standards

- Trenching and Services Layout Diagrams
- Earthing Reticulation Diagrams
- Cable Routing Reticulation Diagrams

2.2 Application to Work Activities

The Standards and Codes of Practice contained herein are suitable for use whenever Engineering Documentation is required to be produced and includes amongst others the following :

- Design Sketches
- Technical Papers and literature
- Equipment Identification and Tagging
- Construction Drawings
- Specifications, both Functional and Technical
- Installation, operating and maintenance instructions, drawings and records

3. REFERENCE DOCUMENTATION

The following standard specifications are to be used for reference purposes and need to be noted by Tenderers in order to signify familiarity and compliance with the requirements. It is expected of Tenderers that they be familiar with the applicable clauses and that these will be adhered to in the execution of any work in terms of this specification.

- A. Standards and Recommended Practices for Instrumentation and Control, 11th Edition, Instrument Society of America.

ANSI/ISA-5.1-2009	Instrumentation Symbols and Identification
ISA-S5.3-1983	Graphic Symbols for DCS/Shared Display Instrumentation, Logic & Computer Systems
ISA-S5.4-1991	Instrument Loop Diagrams
ANSI/ISA-S5.5-1985	Graphic Symbols for Process Displays

- B. Graphical Symbols for Electrical Diagrams NRS 002-2000 second edition

- C. International Electrotechnical Commission Standards for Electrical Drawings

IEC Publication 27	Letter Symbols to be used in Electrical Technology
IEC Publication 50	International Electrotechnical Vocabulary
IEC Publication 617	Graphical Symbols for Diagrams

- D. SABS 0111/1990 Code of Practise for Engineering Drawings

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|----|--------------------|------------------------|
| E. | TPL-TECH-I-POL-001 | Measurement Policy |
| F. | TPL-TECH-I-POL-002 | Control Policy |
| G. | TPL-TECH-I-POL-003 | Instrumentation Policy |

4. ABBREVIATIONS

For the purpose of understanding these Standards, the following abbreviations apply .

ANSI	American National Standards Institute
C & I	Control and Instrumentation
IEC	International Electrotechnical Commission
ISA	Instrument Society of America
SABS	South African Bureau of Standards

APPENDICES

A GENERAL STANDARDS

PL 101	Plant & Equipment Tag Numbering Standards
PL 102	Equipment, Instrument and Electrical Symbolology Standards
PL 103	General Drawing Standards

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