

NORSOK STANDARD

DESIGN PRINCIPLES
NORSOK STANDARDS AND DATA SHEETS

Z-DP-001
Rev. 1, December 1994

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1. FOREWORD

This standard has been developed by the NORSOK Standardisation Work Group.

ANNEX A is normative.

2. SCOPE

This standard defines the structure of the Norwegian NORSOK trade standards and states the requirements regarding the format, development and use of the same standards.

3. NORMATIVE REFERENCES

ANNEX A	Equipment data sheet, Material data sheet.
IEC/ISO Directive - Part 3	Drafting and Presentation of International Standards.
ISO WD 13879	Standard for the Writing and Content of a Functional Specification for the Petroleum and Natural Gas Industries.
NORSOK Z-DP-002	NORSOK standard for Coding System.

4. DEFINITIONS AND ABBREVIATIONS

4.1 Definitions

NORSOK	"Norsk Søkkel Konkurransesposisjon", the Norwegian initiative to reduce cost on offshore projects.
Functional Standard	As defined in ISO WD 13879 and 13880: The document that specifies the totality of needs expressed in features, characteristics, process conditions, boundaries and exclusions defining the performance of a product or service, including the Quality Assurance requirements.
Technical Specification	As defined in ISO WD 13880: The document that specifies the totality of needs expressed by features, characteristics, properties and all information that is required to produce a product or provide a service including the objective evidence that the product or service will comply with the Functional Specification (Standard).

Normative references	Shall mean normative in the application of NORSOK Standards.
Informative references	Shall mean informative in the application of NORSOK Standard.
Shall	Shall is an absolute requirement and shall preferably be used in all NORSOK standards. Non-compliance to shall-requirements shall be accepted by the client.
Should	Should is a recommendation. Alternative solutions having the same functionality and quality are acceptable to the client.
May	May-requirements are conditional. Alternative solutions can be allowed if the required functional criteria have been met.

4.2 Abbreviations

HVAC	Heating, Ventilation and Air Conditioning.
NPD	Norwegian Petroleum Directorate
ISO	International Standardisation Organisation.
IEC	International Electrotechnical Commission.

5. STRUCTURE AND USE OF NORSOK STANDARDS

5.1 General

The layout and the presentation of the NORSOK standards shall be as in this standard.

This standard is based on the IEC/ISO Directives - Part 3, Drafting and Presentation of International Standards. Current version is dated 1989. As the NORSOK standards are developed by the Norwegian NORSOK Standardisation Work Group, some of the elements in the Directive will not be applicable.

Functional NORSOK standards shall be based on ISO WD 13879, Standard for the Writing and Content of a Functional Specification for the Petroleum and Natural Gas Industries.

5.2 Structure of NORSOK standards

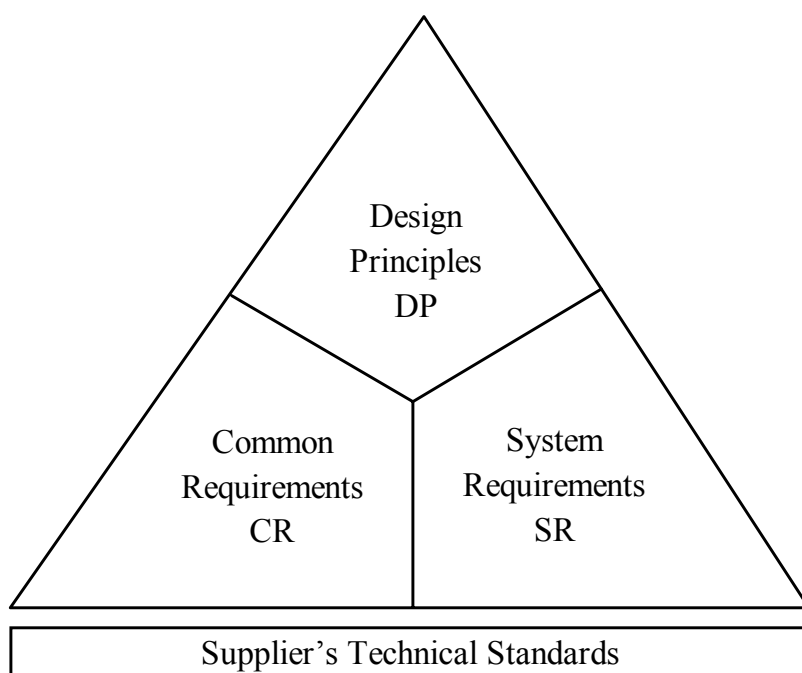


Fig. 1 Standardisation structure for the NORSOK standards.

The standards are based on international standards and shall refer to such standards and not repeat their requirements.

The NORSOK standards shall be functional, short and to the point.

Tables shall be preferred to text to increase the intelligibility and reduce document size.

There are three different NORSOK standard categories as shown in fig. 1. The supplier's shall prepare their own technical standards based on the NORSOK standards.

5.3 Design Principles, DP

Design Principles standards are fundamental criteria for design of plants and systems and selection of critical main equipment. Typical documents are:

- Operational Requirements
- Drilling Facilities
- Technical Safety
- Working Environment
- Environmental Care
- Material Selection
- Coding System.

The Design Principles shall state the operators fundamental criteria and shall be used for conceptual design and throughout the engineering work in the project development.

5.4 Common Requirements, CR

The Common Requirements standards are discipline requirements to systems and equipment and component variation control. Typical document content are:

- Technical requirements to design, fabrication, installation, mechanical completion and commissioning.
- Variation control for components in tables, equipment data sheets and drawings.
- Variation control by typical drawings.

The technical variation control for components shall enable the use of standard components having standard interfaces.

5.5 System Requirements, SR

The System Requirements are functional requirements for complete systems. The standards shall be formulated within a strict format with predefined clauses.

The System Requirements shall be used towards suppliers for purchase of systems.

5.6 Supplier's Technical Specifications

As defined in ISO, the suppliers shall specify their standard systems based upon the purchaser's functional standards.

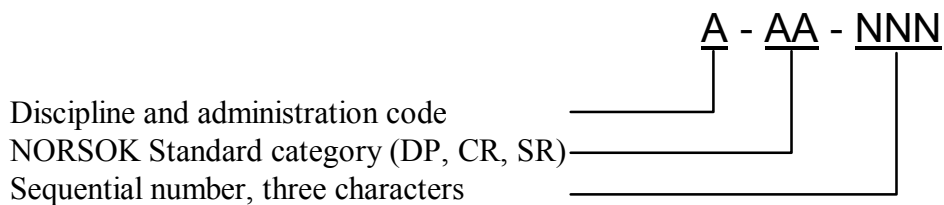
The suppliers should use the standard components with standard interfaces as defined in NORSOK's Common Requirements. The supplier's competence and competitiveness shall be used in optimising their system design based upon standard components. This method shall enable repeated deliveries of standard systems from suppliers.

Component suppliers shall also meet standardised, repeatable technical requirements and shall be able to standardise their deliveries.

All suppliers shall be able to standardise their documentation.

6. NUMBERING OF NORSOK STANDARDS AND DATA SHEETS

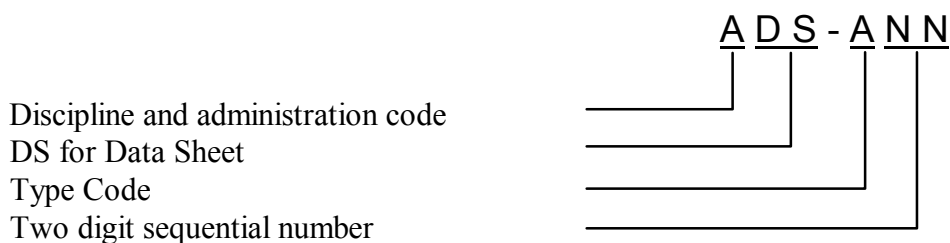
The NORSOK standards shall be numbered as follows:



Examples:

This document, Z-DP-001, i.e. a Design Principle (DP) standard for all disciplines (Z).
The standard P-SR-005, i.e. a process (P) functional System Requirement (SR).

The NORSOK equipment data sheets and material data sheets shall be numbered as follows:



Example:

IDS-T02, i.e. an instrument (I) data sheet (DS) for temperature (T) transmitter number 02.

The type code is defined by each discipline.

Table 1. Discipline code (as defined in Z-DP-002):

Code	Description
C	Civil/Architect
D	Drilling
E	Electrical
G	Geology
H	HVAC
I	Instrumentation Metering
J	Marine operation
K	Inspection
L	Piping/Layout
M	Material technology
N	Structural
O	Operation
P	Process
R	Mechanical
S	Safety
T	Telecommunication
U	Subsea
W	Weight control
X	Reservoir
Y	Pipeline
Z	Multidiscipline

7. ISSUE AND REVISION OF NORSOK STANDARDS AND DATA SHEETS

The NORSOK standards shall be developed and maintained by the Norwegian oil industry. Reviews, and revisions if necessary, shall be performed at least every two years for new standards. More mature standards shall have less frequent reviews.

Versions prior to first issue shall be numbered Draft 1, Draft 2 etc. Official and approved issues shall be numbered Rev. 1, Rev. 2 etc. Proposed revisions of approved standards shall be identified as Draft 1 of Rev. 1, Draft 2 of Rev. 1 etc.

Example:

First proposed revision of approved revision 2 shall be identified as:

Draft 1 of Rev. 2

The electronic file shall be named according to the standard number.

Example:

Z-DP-001's electronic file shall be named:

Draft versions: zdp001d1, zdp001d2, etc. Start over from 1 after zdp001d9.

Regular versions: zdp00101 for rev. 1, zdp00102 for rev. 2, etc.

8. LAYOUT OF NORSOK STANDARDS AND DATA SHEETS

8.1 General

The NORSOK standards shall have a layout conforming to this standard. The data sheets shall have a layout conforming to the enclosed typicals in ANNEX A.

The standards shall have a title page, a contents page, the normal text pages and, if necessary, annexes.

Normal text shall be:

- The font shall be Times New Roman, size 12, unless otherwise specified.
- The left margin shall be 2,5 cm.
- The right margin shall be 1,5 cm.
- The line separation shall be 0,5 cm.

Headings shall be clearly separated from text lines above and below.

8.2 Title Page

- The front cover title page is the first page. The title page shall not be numbered and shall have a layout as shown in this document.
- The uppermost text on the title page shall state NORSOK STANDARD.
- The document title in the middle of the title page shall use Times New Roman, size 18, bold.
- The lowest text on the title page shall state document number and on the next line revision number and date (month year).

8.3 Contents Page

- The contents page shall list all clauses (sections) and first subclauses and all annexes.
- The uppermost text on the contents page shall say CONTENTS.
- The contents page shall be numbered as the first page(s).

8.4 Header

The following header shall be used on all pages including the contents page, all normal text pages and all annexes. It shall not be used for the title page.

The header shall state:

Name of standard

Standard no.
Rev. no., rev. month year

8.5 Footer

The footer shall state:

NORSOK Standard

Page of number

All standards and data sheets shall use this footer.

8.6 Clause and Subclause Numbering and Fonts

- The NORSOK standards shall primarily use four levels of numbering, the fourth level in alpha character.
- Clause headings shall use Times New Roman, size 14, bold, capital letters only.
- First subclause heading shall use Times New Roman, size 12, bold.
- Second subclause heading shall use Times New Roman, size 12, italic and bold.
- Third subclause heading shall use Times New Roman, size 12.

8.7 Clauses

The first five clauses shall always be:

"1. FOREWORD"

The foreword shall always contain:

"This standard has been developed by the NORSOK standardisation work group."

The foreword shall also describe significant technical changes from the previous revision and the annexes shall be identified as normative or informative.

"2. SCOPE"

The scope shall define the subject of the standard and the aspect(s) covered.

"3. NORMATIVE REFERENCES"

Normative references shall list documents/standards that are referred to in the text in such a way that they are indispensable for the application of the standard.

"4. DEFINITIONS AND ABBREVIATIONS"

Definitions and abbreviations shall list all definitions and abbreviations as required.

"5. TECHNICAL REQUIREMENTS"

The technical requirements shall start with clause 5. Clause 5 shall be split into separate clauses and subclauses as required. All technical requirements shall be brief and functional. Contractual requirements shall not be included.

The System Requirements shall have the following clauses after Definitions and Abbreviations:

"5. FUNCTIONAL REQUIREMENTS"

- "5.1 General"
- "5.2 Products/Services"
- "5.3 Equipment/Schematic"
- "5.4 Performance"
- "5.5 Regularity"
- "5.6 Process/Ambient Conditions"
- "5.7 Operational Requirements"
- "5.8 Maintenance Requirements"
- "5.9 Isolation and Sectioning"
- "5.10 Layout Requirements"
- "5.11 Interface Requirements"
- "5.12 Commissioning Requirements"

"INFORMATIVE REFERENCES" shall always be the last clause in all standards.

8.8 Annexes

Annexes shall be numbered as ANNEX A, ANNEX B, etc. The annexes shall be an integrated part of the standard, e.g. continuous page numbering, identical headers and footers, etc. as shown in this standard.

ANNEX A
**EQUIPMENT DATA SHEET AND
MATERIAL DATA SHEET
(Normative)**

DISCIPLINE/EQUIPMENT DATA SHEET	ADS- NNN	Rev. N
TITLE:		

MATERIAL DATA SHEET		MDS-ANN	Rev. N
TYPE OF MATERIAL:			
PRODUCT	STANDARD	GRADE	ACCEPT. CLASS SUPPL. REQ.