

Abbreviations for Industrial Designs

Procedure

This Standard replaces and cancels its previous revision.

The CONTEC - Authoring Subcommittee provides guidance on the interpretation of this Standard when questions arise regarding its contents. The Department of PETROBRAS that uses this Standard is responsible for adopting and applying the sections, subsections and enumerates thereof.

Technical Requirement: A provision established as the most adequate and which shall be used strictly in accordance with this Standard. If a decision is taken not to follow the requirement ("non-conformity" to this Standard) it shall be based on well-founded economic and management reasons, and be approved and registered by the Department of PETROBRAS that uses this Standard. It is characterized by imperative nature.

Recommended Practice: A provision that may be adopted under the conditions of this Standard, but which admits (and draws attention to) the possibility of there being a more adequate alternative (not written in this Standard) to the particular application. The alternative adopted shall be approved and registered by the Department of PETROBRAS that uses this Standard. It is characterized by verbs of a nonmandatory nature. It is indicated by the expression: **[Recommended Practice]**.

Copies of the registered "non-conformities" to this Standard that may contribute to the improvement thereof shall be submitted to the CONTEC - Authoring Subcommittee.

Proposed revisions to this Standard shall be submitted to the CONTEC - Authoring Subcommittee, indicating the alphanumeric identification and revision of the Standard, the section, subsection and enumerate to be revised, the proposed text, and technical/economic justification for revision. The proposals are evaluated during the work for alteration of this Standard.

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CONTEC

Comissão de Normalização
Técnica

SC - 12

General Design Standards

Introduction

PETROBRAS Technical Standards are prepared by Working Groups - WG (consisting specialized of Technical Collaborators from Company and its Subsidiaries), are commented by Company Units and its Subsidiaries, are approved by the Authoring Subcommittees - SCs (consisting of technicians from the same specialty, representing the various Company Units and its Subsidiaries), and ratified by the Executive Nucleus (consisting of representatives of the Company Units and its Subsidiaries). A PETROBRAS Technical Standard is subject to revision at any time by its Authoring Subcommittee and shall be reviewed every 5 years to be revalidated, revised or cancelled. PETROBRAS Technical Standards are prepared in accordance with PETROBRAS Technical Standard [N-1](#). For complete information about PETROBRAS Technical Standards see PETROBRAS Technical Standards Catalog.

Foreword

This Standard is the English version (issued in 02/2013) of PETROBRAS N-75 REV. E 03/2012. In case of doubt, the Portuguese version, which is the valid document for all intents and purposes, shall be used.

1 Scope

1.1 This Standard sets out the abbreviations to be used in industrial designs.

1.2 For consultation of this Standard, two entries are provided: by abbreviations (see 3.1) and by terms (see 3.2).

1.3 This Standard does not apply for identification symbology of equipment and piping components (see PETROBRAS [N-1521](#)), of pipes (see PETROBRAS [N-1522](#)), as well as for instruments (see ISA [5.1](#)).

1.4 This Standard applies to procedures prepared as of their editing date.

1.5 This Standard contains only Technical Requirements.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document applies.

PETROBRAS [N-1521](#) - Identificação de Equipamentos Industriais;

PETROBRAS [N-1522](#) - Identificação de Tubulações Industriais;

ANSI/ISA [5.1](#) - Instrumentation Symbols and Identification.

NOTE For documents referred in this Standard and for which only the Portuguese version is available, the PETROBRAS department that uses this Standard should be consulted for any information required for the specific application.

3 Abbreviations

3.1 In Alphabetical Order of Abbreviations

- A -

A	- Anchor (Piping Support);
AC	- Carbon Steel;
ACA	- Setting in Field;
ADM	- Allowable;
AE	- Electrical Heating;
AEC	- Both Chamfered Ends;
AEP	- Both Flat Ends;
AER	- Both Threaded Ends;
AFO	- Wrought Steel;
AFU	- Cast Steel;
AI	- Stainless Steel;
AI	- Alloy Steel;
ALT	- Altitude, Height;
APROX.	- Approximate.

- B -

B	- Stop (Piping Support);
BE	- Cradle (Piping Support);
BL	- Block;
BOP	- Bottom of Pipe (External Lower Generating Line of Pipe);
BR	- Bracket (Piping Support);
BRE	- Reduction Bushing;
BUJ	- Retainer;
BWG	- Birmingham Wire Gauge.

- C -

CA	- Screwed Castle or Alternating Current;
CALC	- Calculate/Calculated;
CAP	- Plug;
CC	- With Joining Splice or Direct Current;
CE	- Blind;
CG	- Gravity Center;
CGM	- Mitre Segmented Curve;
CH	- Plate;
CHUMB	- Anchor Bolt;
CHX	- Checkered Plate;
CL	- Class;
COD	- Continues in Drawing, Code;
COI	- Continues in Isometric;
COL	- String;
COMP	- Length;
CON	- Connection;
CONC	- Concentric;
CONT	- Continuous;
COST	- Joining Splice
CR	- Threaded Castle;
CRC	- Short Radius Curve;
CRL	- Long Radius Curve;
CTU	- Union-type Castle;
CX	- Box.

- D -

DE	- Outer Diameter or Drawing;
DES	- Drawing;
DET	- Detail;

DI	- Inner Diameter;
DIM	- Size;
DIR	- Right;
DN	- Nominal Diameter;
DPDT	- Double Pole Double Throw;
DPST	- Double Pole Single Throw.

- E -

E	- This;
ECC	- Eccentric;
EL	- Elevation;
EMAC	- Chamfered Larger End;
EMAP	- Flat Larger End;
EMAR	- Threaded Larger End;
EMEC	- Chamfered Smaller End;
EMEP	- Flat Smaller End;
EMER	- Threaded Smaller End;
ENCH	- Grout;
ES	- Fitting for Weld;
ESP	- Thickness;
ESPAÇ	- Spacing;
ESPEC	- Specification;
ESQ	- Left;
EX	- End;
EXC	- Chamfered End;
EXP	- Flat End;
EXR	- Threaded End;
EXT	- External.

- F -

FABR	- Manufacturer/Manufacture;
FCE	- Blind Flange;
FD	- Data Sheet;
FF	- Flat Face;
FFU	- Cast Iron;
FIG	- Figure;
FIT	- Inner Face of Pipe;
FLG	- Flange/Flanged;
FM	- Black Iron;
FORJ	- Wrought;
FPE	- Neck Flange
FREQ	- Frequency;
FRO	- Threaded Flange;
FSO	- Overlapped Flange.

- G -

G	- Longitudinal Guide (Piping Restriction);
GALV	- Galvanized;
GR	- Degree;
GT:	- Transversal Guide (Piping Restriction).

- H -

HARE	- Upward Rod with Outer Thread;
HNA	- Non-upward Rod;
HORZ	- Horizontal.

- I -

IF	- Cold Isolation;
IQ	- Hot Isolation;
INC	- Inclined;
INT	- Internal;
ISOL	- Isolation;
ISOM	- Isometric.

- J -

J	- Joint;
JA	- O-Ring Joint;
JE	- Expansion Joint;
JM	- Metallic Joint;
JO	- Elbow;
JSE	- Spiraled or Lined Semi-metallic Joint.

- L -

L	- East;
LARG	- Width;
LB	- Battery Limit;
LC	- Center Line;
Li	- List;
LJ	- Lap Joint;
LM	- List of Material;
LRE	- Reduction Glove;
LT	- Contact Line;
LU	- Glove.

- M -

MAX	- Maximum;
MCM	- Thousand Circular Mils;
MIG	- Inert-Gas Shielded Metal Arc Welding Process;
MIN	- Minimum.

- N -

N	- North;
NC	- National Coarse;
NEC	- National Electrical Code; ;
NH	- American National Fire Hose Connection Screw Threads;
NIP	- Nipple;
NPS	- Nominal Pipe Size;
NPSH	- Net Positive Suction Head;
NPTF	- National Pipe Thread;
NRE	- Reduction Nipple.

- O -

O	- West;
OSY	- Outside Screw and Yoke.

- P -

P	- Skate (Piping Support);
PAE	- Stud Bolt;
PAG	- Page;
PAM	- Machine Screw;
PAR	- Screw, Wall Thickness;
PCM	- Material Purchase Order;
PE	- Neck (Neck Flange);
PLAT	- Platform;
PP	- Personal Protection;
PN	- Panel;
PSV	- Pressure Safety Valve;
PT	- Piping Pass, Expert Opinion;
PTO	- Point.

- R -

R	- Radius;
RED	- Reduction;
REF	- Reference;
REV	- Review;
RF	- Raised Face;
RM	- Request for Material;
RO	- Threaded;
RTJ	- Ring Type Joint.

- S -

S	- South;
SA	- Heating System;
SAO	- Oil and Water Separator;
SCH	- Schedule;
SD	- Direct Support (for Piping);
SE	- Special Support.
SI	- Indirect Support (for Piping);
SM	- Spring Support;
SO	- Overlapped ("Overlapped Flange");
SPDT	- Single Pole Double Throw;
SPST	- Single Pole Single Throw;
ST	- Butt Weld;
STD	- Standard.

- T -

TAG	- Identification;
TC	- Current Transformer;
TEMP	- Temperature;
TF	- Transformer;
TIG	- Inert-Gas Shielded Tungsten Arc Welding Process;
TIP	- Typical;
TOL	- Tolerance;
T'P	- Power Transformer;
TQ	- Tank;
TRAFO	- Transformer;
TRE	- Reducing Tee.

- U -

U	- Industrial Unit;
UEC	- One of Chamfered Ends;
UEP	- One of Flat Ends;



UER	- One of Threaded Ends;
UN	- Union;
UNIT	- Unit (Standard).

- V -

VA	- Heating Steam
VAG	- Needle Valve;
VALV	- Valve;
VAN	- Angle Valve;
VAR	- Variable;
VBO	- Butterfly Valve;
VERT	- Vertical;
VES	- Ball Valve;
VGA or VG	- Gate Valve;
VGL	- Globe Valve;
VMA	- Taper Valve;
VPE	- Foot Valve;
VRE	- Check Valve.

- W -

OG	- Water, Oil and Gas.
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- X -

XS	- Extra Strong;
XXS	- Double Extra Strong.

- OTHER SYMBOLS -

@	- Each, up to, to
Ø	- Diameter;
#	- Pounds per Square Inches (psi); Number or Gauge.

3.2 In Alphabetical Order of Terms

- A -

A	- @;
Wrought Steel	- AFO;
Cast Steel	- AFU;
Stainless Steel	- AI;
Alloy Steel	- AL;
Carbon Steel	- AC;
Allowable	- ADM;
Setting in Field	- ACA;
Altitude	- ALT;
Height	- ALT;
Both Chamfered Ends	- AEC;
Both Flat Ends	- AEP;
Both Threaded Ends	- AER;
Conditioning Engineers	- ASHRAE;
American Wire Gauge	- AWG;
Anchor (Piping Support)	- A;
Approximate	- APROX;
Electrical Heating	- AE;

Up to

- @;

- B -

Stop (Piping Support)	- B;
Cradle (Piping Support)	- BE;
Birmingham Wire Gauge	- BWG;
Gauge	- #;
Block	- BL;
Bottom of Pipe (External Lower Generating Line of Pipe)	- BOP;
Bracket (Piping Support)	- BR;
Brown and Sharpe	- BS;
Reduction Bushing	- BRE;
Stopper	- BUJ.

- C -

Each	- @;
Box	- CX;
Calculate/Calculated	- CALC;
Screwed Castle	- CA;
Threaded Castle	- CR;
Union-type Castle;	- CTU;
Blind	- CE;
Gravity Center	- CG;
Checkered Plate	- CHX;
Plate	- CH;
Anchor Bolt	- CHUMB;
Class	- CL;
Code	- COD;
String	- COL;
With Joining Splice	- CC;
Length	- COMP;
Concentric	- CONC;
Connection	- CON;
Continuous	- CONT;
Continues in Drawing	- COD;
Continues in Isometric	- COI;
Alternating Current	- CA;
Direct Current	- CC;
Joining Splice	- COST;
Short Radius Curve	- CRC;
Long Radius Curve	- CRL;
Mitre Segmented Curve	- CGM.

- D -

Drawing	- DE;
Detail	- DET;
Diameter	- Ø;
Outer Diameter	- DE;
Inner Diameter	- DI;
Nominal Diameter	- DN;
Size	- DIM;
Right	- DIR;
Double Extra Strong	- XXS;
Double Pole Double Throw	- DPDT;
Double Pole Single Throw	- DPST.

- E -

Elevation	- EL;
Fitting for Weld	- ES;
Grout	- ENCH;
Spacing	- ESPAC;
Specification	- ESPEC;
Thickness	- ESP;
Wall Thickness	- PAR;
Left	- ESQ;
This	- E;
Eccentric	- ECC;
External	- EXT;
Extra Strong	- XS;
End	- EX;
Chamfered End	- EXC;
Chamfered Larger End	- EMAC;
Flat Larger End	- EMAP;
Threaded Larger End	- EMAR;
Chamfered Smaller End	- EMEC;
Flat Smaller End	- EMEP;
Threaded Smaller End	- EMER;
Flat End	- EXP;
Threaded End	- EXR.

- F -

Manufacturer/Manufacture	- FABR;
Inner Face of Pipe	- FIT;
Cast Iron	- FFU;
Black Iron	- FM;
Figure	- FIG;
Blind Flange	- FCE;
Flange/Flanged	- FLG;
Neck Flange	- FPE
Threaded Flange	- FRO
Overlapped Flange	- FSO
Flat Face	- FF;
Data Sheet	- FD;
Wrought	- FORJ;
Frequency	- FREQ.

- G -

Galvanized	- GALV;
Degree	- GR;
Longitudinal Guide (Piping Restriction)	- G;
Transversal Guide (Piping Restriction)	- GT.

- H -

Upward Rod with Outer Thread	- HARE;
Non-upward Rod	- HNA;
Horizontal	- HORZ.

- I -

Identification	- TAG;
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Inclined	- INC;
Internal	- INT;
Isolation	- ISOL;
Cold Isolation	- IF;
Hot Isolation	- IQ;
Isometric	- ISOM.

- J -

Elbow	- JO;
Joint	- J;
O-Ring Joint	- JA;
Expansion Joint	- JE;
Metallic Joint	- JM;
Spiraled or Lined Semi-metallic Joint	- JSE

- L -

Lap Joint	- LJ;
Width	- LARG;
East	- L;
Battery Limit	- LB;
Center Line	- LC;
Contact Line	- LT;
List	- LI;
List of Material	- LM;
Glove	- LU;
Reduction Glove	- LRE.

- M -

Maximum	- MAX;
Thousand Circular Mils	- MCM;
Minimum	- MIN.

- N -

National Coarse	- NC;
National Pipe Thread	- NPT;
Net Positive Suction Head	- NPSH;
Nipple	- NIP;
Reduction Nipple	- NRE;
Nominal Pipe Size	- NPS;
North	- N;
Number	- #.

- O -

West	- O
Outside Screw and Yoke	- OSY.

- P -

Page	- PAG;
Panel	- PN;
Screw	- PAR;



Machine Screw	- PAM;
Stud Bolt	- PAE;
Expert Opinion	- PT;
Piping Pass	- PT;
Skate (Piping Support)	- P;
Neck (Neck Flange)	- PE;
Platform	- PLAT;
Point	- PTO;
Pounds Per Square Inch (PSI)	- #;
Pressure Safety Valve	- PSV;
Inert-Gas Shielded Tungsten Arc Welding Process	- TIG;
Inert-Gas Shielded Metal Arc Welding Process	- MIG;
Personal Protection	- PP;

- R -

Radius	- R;
Raised Face	- RF;
Reduction	- RED;
Reference	- REF;
Request for Material	- RM;
Review	- REV;
Ring Type Joint	- RTJ;
Threaded	- RO.

- S -

Schedule	- SCH;
Oil and Water Separator	- SAO;
Single Pole Double Throw	- SPDT;
Single Pole Single Throw	- SPST;
Heating System	- SA;
Overlapped (Overlapped Flange)	- SO;
Butt Weld	- ST;
Standard	- STD;
South	- S;
Spring Support	- SM;
Direct Support (for Piping)	- SD;
Special Support	- SE;
Indirect Support (for Piping)	- SI.

- T -

Plug	- CAP;
Tank	- TQ;
Temperature	- TEMP
Typical	- TIP;
Tolerance	- TOL;
Transformer	- TF;
Transformer	- TRAFO;
Current Transformer	- TC;
Power Transformer	- TP.

- U -

One of Chamfered Ends	- UEC;
One of Flat Ends	- UEP;
One of Threaded Ends	- UER;



Unit (Standard)
Industrial Unit
Union

- UNID;
- U;
- UN.

- V -

Heating Steam
Valve
Needle Valve
Angle Valve
Butterfly Valve
Foot Valve
Check Valve
Ball Valve
Gate Valve
Globe Valve
Taper Valve
Variable
Vertical

- VA
- VALV;
- VAG;
- VAN;
- VBO;
- VPE;
- VRE;
- VES;
- VGA or VG;
- VGL;
- VMA;
- VAR;
- VERT.

- W -

Water, Oil and Gas

- WOG;

[illegible]