



Secretariat of ISO/TC 67/SC 5

Materials, equipment and offshore structures for petroleum,
petrochemical and natural gas industries - Casing, tubing and drill pipe

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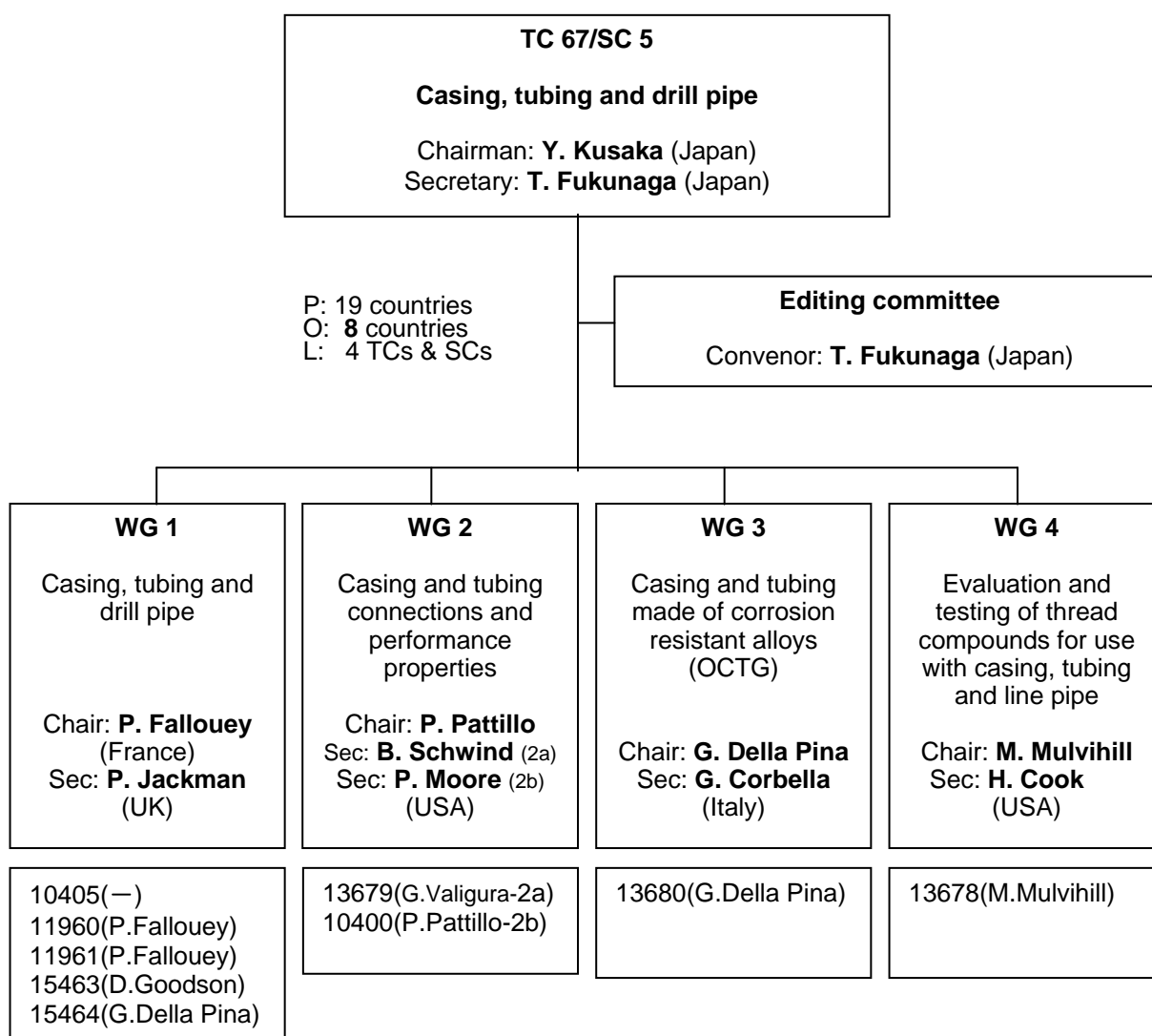
Secretariat report of TC 67/SC 5 for the plenary meeting of TC 67 in Victoria

1	SC Title	Casing, tubing and drill pipe
2	SC Scope	Standardization of casing, tubing and drill pipe for petroleum and natural gas industries
3	SC Secretariat	JISF (The Japan Iron and Steel Federation, Standardization Center for JISC) Tekko kaikan, 3-2-10, Nihonbashi-Kayabacho, Chuo-ku, Tokyo 103-0025, JAPAN Tel: +81 3 3669 4826, Fax: +81 3 3669 0226 E-mail: t-fukunaga@jisf.or.jp
4	SC Chairman	Mr Yoshizo (Yoshi) KUSAKA Sumitomo Metal Industries, Ltd., Pipe & Tube Company General manager of tubular products technology department Triton square office tower Y, 8-11, Harumi 1-chome, chuo-ku, Tokyo, 104-6111, JAPAN Tel:+81 3 4416 6319, Fax:+81 3 4416 6789 E-mail:kusaka-ysz@sumitomometals.co.jp
5	SC Secretary	Mr Tadashi FUKUNAGA (same as SC Secretariat address)

6 SC Membership

P members (19)		O members (8)		Liaisons (4)
Argentina	Korea	Austria	Poland	ISO/TC 5/SC 1
Brazil	Mexico	Egypt	Serbia	ISO/TC 17
Canada	Netherlands	Finland	Spain	ISO/TC 135
China	Norway	Iran	Sweeden	ISO/TC 164
France	Romania			
Germany	Russia			
India	South Africa			
Indonesia	UK			
Italy	USA			
Japan (S)				

7 ISO/TC 67/SC 5 Organization structure



8 Work programme

Work programme for ISO/TC 67/SC 5 is shown in the document of ISO/TC 67/SC 5 N 463 issued on 2009-08-03.

ISO standards published/systematic reviewed (SR) are shown below as of 2009-08-03.

WG	ISO	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10
1	ISO 10405	1st							2nd					SR					SR
	ISO 10422	1st											With-drawal						
	ISO 11960				1st					2nd			3rd						4th
	ISO 11961				1st									SR			2nd		
	ISO 15463											1st					SR		
	TR 15464																		TR
2	TR 10400	1st														TR			
	ISO 13679										1st								2nd
3	ISO 13680								1st								2nd		
4	ISO 13678								1st									2nd	

9 Vote

9-1 FDIS 11961 “Petroleum and natural gas industries -- Steel drill pipe ”

Voting period: 2008-07-17 to 2008-09-17

Result: P-Members voting: 17 in favour out of 17 = 100%

Member bodies voting: 0 negative votes out of 21 = 0%

Published on 2008-11-01

9-2 DIS 11960 “Petroleum and natural gas industries -- Steel pipes for use as casing or tubing for wells”

Voting period: 2008-09-25 to 2009-02-25

Result: P-Members voting: 16 in favour out of 19 = 84% (requirement \geq 66.66%)

Member bodies voting: 3 negative votes out of 22 = 14%(requirement \leq 25%)

Second DIS considered October 2009 to December 2009

9-3 FDIS 13680 “Petroleum and natural gas industries -- Corrosion-resistant alloy seamless tubes for use as casing, tubing and coupling stock -- Technical delivery conditions ”

Voting period: 2008-06-12 to 2008-08-12

Result: P-Members voting: 16 in favour out of 16 = 100%

Member bodies voting: 0 negative votes out of 20 = 0%

Published on 2008-10-15

9-4 FDIS 13678 “P&NGI - Evaluation and testing of thread compound for use with casing, tubing, line pipe and drill stem elements”

Voting period: 2009-01-29 to 2009-03-29

Result: P-Members voting: 16 in favour out of 17 = 94%

Member bodies voting: 1 negative votes out of 20 = 5%

Published on 2009-05-15

9-5 N 422(PWI 12835) “Enquiry of a preliminary work item for New standard for Qualification of Casing Connections for THERMAL WELLS”

Voting period: 2008-06-03 to 2008-08-03

Result: P-Members voting: 10 in favour out of 10 = 100% (Simple majority vote of P-Members)

Member bodies voting: 0 negative votes out of 11 = 0%

Continued to be discussed

9-6 Systematic review

9-6-1 ISO 15463:2003 “P&NGI - Field inspection of new casing, tubing and plain end drill pipe”

Voting period: 2008-10-15 to 2009-03-16

Result: Simple majority vote of P-Members (12 out of 16 members)

Confirmation with correction (Technical corrigendum published on 2009-08-01)

10 Progress made since last meeting

10-1 ISO 13679“P&NGI - Procedures for testing casing and tubing connections”

The DIS document was submitted to ISO/CS on April 8. The vote of DIS 13679 was initiated on 2009-05-17.

10-2 TR 15464 “P&NGI - Gauging and inspection of casing, tubing and line pipe threads - Recommended practice”

The project is scheduled to publish TR 15464 in the middle of 2009 according to an original schedule. Taking into consideration of the conversion USC unit to SI unit, the publication of TR will be postponed.

11 Specific areas of concern or progress

11-1 Change-identification system

Change-identification system was applied to the 4th revision of ISO 11960 as a trial base and the vote of ISO/DIS 11960 was completed at the end of February. The voting result is above mentioned and the comments from 9 countries were submitted. There were some comments on change-identification system including ISO/CS comment as below.

“The grey shading can be left in the DIS but it is likely that it will be necessary to remove it for the FDIS vote.”

However, the following was approved by TC 67 plenary meeting in Beijing on 29/30 October 2008.

“The protocol of Change-identification system was approved by TC 67 MC on 2007-06-29, San Francisco/USA for inclusion as a TC 67 editorial protocol. Change-identification system is to be used to the revision of ISO 11960 as a trial. ISO/CS approved the protocol (ISO/TC67 editing and presentation protocol number 27) on 2008-05-28.”

In addition to Beijing meeting, the following was resolved by TC67/SC5 plenary meeting in Brazil on 27 April 2009.

Resolution 3 (Belo Horizonte, 2009)

TC67/SC5 reaffirms the protocol about change identification system (doc. TC67/SC5 N392r3) approved by ISO/TC67 MC and also accepted by ISO/CS on 2008-03-04 as TC67 editorial protocol. See also TC67 resolution taken at the Beijing meeting in October 2008.

TC67/SC5 questioned the ISO/CS comment on this subject, presented during the enquiry on DIS 11960 and communicate with ISO/CS on this matter.

Consequently TC67/SC5 requests WG1 to use the change identification system when preparing the draft of FDIS 11960 and reaffirms its intention to use the change identification system in the published version of ISO 11960.

The above protocol was amended and finally agreed by ISO/CS, therefore, TC67/SC5 intends to proceed Change-identification system according to the resolution in Beijing meeting.

Concerning “change bar” , it is indicated as a disclaimer in Foreword and shown by the use of gray shading in this document and technical changes from the previous edition in Annex L.

11-2 Letter of Appreciation

ISO 11961 and ISO 13680 were published last year. TC 67/SC 5 would express an appreciation for the convenor and project leader of WG1 and WG3 and give a letter of appreciation to all concerned members thanks to ISO/CS and TC67 Secretary.

ISO 11961: WG1 Convener Mr Patrick Fallouey following 11 members

ISO 13680: WG3 Convener Mr G. Della Pina following 10 members

12 Meetings

12-1 Plenary meeting of TC 67/SC 5

TC 67/SC 5	Date	Place
SC 5 (1st)	1991-06-04	San Diego, USA
SC 5 (2nd)	1992-10-21/23	Kobe, JAPAN
SC 5 (3rd)	1993-09-20/21	Düsseldorf, GERMANY
SC 5 (4th)	1994-09-26	Makuhari, JAPAN
SC 5 (5th)	1995-06-29/30	Calgary, CANADA
SC 5 (6th)	1996-05-30/31	Paris, FRANCE
SC 5 (7th)	1997-05-27/28	Tianjin, CHINA
SC 5 (8th)	1998-06-19	Dallas/ USA
SC 5 (9th)	1999-05-12	Bergamo, ITALY
SC 5 (10th)	2000-05-11	Bali, INDONESIA
SC 5 (11th)	2001-04-25/27	Buenos Aires, ARGENTINA
SC 5 (12th)	2002-05-21/22	Delft, THE NETHERLANDS
SC 5 (13th)	2003-05-28/29	Tokyo, JAPAN
SC 5 (14th)	2004-04-19/20	Washington DC, USA
SC 5 (15th)	2005-04-20/21	Stavanger, Norway
SC 5 (16th)	2006-04-20/21	Xi'an, China
SC 5 (17th)	2007-06-23	San Francisco, CA USA
SC 5 (18th)	2008-05-26/27	Valenciennes, France
SC 5 (19th)	2009-04-27/28	Belo Horizonte, Brazil

Protocol of Change-identification system

ISO DRAFTING AND PRESENTATION PROTOCOL No. 27

<p>Subject/Title</p> <p>Use of a "change-identification" system to be determined in TC 67/SC 5 standards</p>
<p>Applicability</p> <p>Within those TC67/SC5 standards having obtained approval for application of the agreed system by TC67</p>
<p>Time limits</p> <p>Use of agreed change-identification system proposed by TC 67/SC 5 on a "per document" basis</p>
<p>ISO/IEC Directives Part 2, 2004 "normal" requirements</p> <p>"The ISO/IEC Directives Part 2, 2004, 6.1.3 indicate that the Foreword "shall give a statement of significant technical changes from the previous edition of the document".</p> <p>An exhaustive list of changes can also take the form of an Informative Annex. In this case there shall be a statement in the Foreword referring to this Annex and explaining that details of the changes are provided in this Annex.</p>
<p>Problem</p> <p>Certain industry sectors (e.g. some sectors of the Exploration and Production of oil and natural gas) considered that the use of standards would be facilitated if an easily readable identification was applied to the clauses/areas where changes affecting the performance of the product (e.g. corrosion resistance, mechanical stability....) or the technical requirements applicable to the product (e.g. mechanical properties, dimensions, testing conditions...) have been made from the previous edition of the standard .</p>
<p>Agreed solution/Protocol</p> <p>Derogation to be granted by the ISO/CS to allow the use of the agreed change-identification system in identified TC 67/SC 5 standards or documents under revision.</p> <ol style="list-style-type: none"> 1- At the start of the revision process of a standard, the TC 67/SC 5 secretariat shall indicate, on the NWIP or Systematic Review forms, the intent and justification to use the change-identification system, for review and approval by P-members. 2- Taking into account the possible comments expressed during the NWIP enquiry, the recommendation of the project leader and the relevant WG, the TC 67/SC 5 Chairman shall ultimately decide whether the system will be used. This decision shall be reflected in the document summarizing the results of the NWIP. 3- The agreed change-identification system is yet to be determined due to IT-application limitations and functionalities. In all cases, the change-identification system applied to development drafts (WD, CD, DIS or FDIS) and to the final International Standard shall indicate the areas (clause, subclause, paragraph, sentence, figures, tables, etc) of the document where changes (additions, modifications and/or deletions) affecting the performance of the product or the

technical requirements applicable to the product have been made with respect to the current edition of the International Standard. In addition to the agreed change-identification system, an informative Annex XX entitled "Summary of changes in ISO xxxxx:yyyy with respect to ISO xxxxx:zzzz" will provide an exhaustive list and description of the changes. A sentence shall be appended to the 6th paragraph in the Foreword referring the reader to Annex XX.

- 4- When applied to development drafts (WD, CD, DIS, and FDIS) or to the final IS, the change identification system shall only identify changes with respect to the current edition of the IS.
- 5- The responsibility of the determination of the text to be identified is that of the PL, in consultation with the respective WG under the responsibility of the subcommittee secretariat.

Note: ISO/CS reserves the right to indicate additional changes where necessary and also if in the future it changes its policy for all documents, have the right to align the TC 67/SC 5 agreement, or if justified suspend/review it.

- 6- When the agreed "change-identification" system is applied, the following clause shall be added to the Foreword of the document:

Details of the changes (additions, modifications and deletions) agreed by the committee, and which affect the performance of the product(s) or the technical requirement(s) applicable to the product(s), are provided for information in Annex XX and are indicated in this document by the use of[description of system agreed to indicate the changes]..... While efforts have been made to ensure the accuracy of the changes indicated, the user of this document is advised to consider the total technical content and not only the changes identified. *The user is ultimately responsible for recognizing any differences between this edition and the previous edition of the document. ISO expressly disclaims any liability or responsibility for loss or damage resulting from inappropriate use of this document on the basis of any inaccuracy in the changes identified.*

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 11960 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 5, *Casing, tubing and drill pipe*.

This fourth edition cancels and replaces the third edition (ISO 11960:2004), which has been technically revised.

Details of the changes (additions, modifications and deletions) agreed by the committee, and which affect the performance of the products or the technical requirements applicable to the products, are provided for information in Annex L and are indicated in this document by the use of grey shading. Grey shading is also used to indicate editorial changes. Where deletions, but no other changes, have been made vertical bars are used in the margin adjacent to the applicable line. Where a complete line or paragraph has been deleted, margin bars next to a blank line are used. While efforts have been made to ensure the accuracy of the changes indicated, the user of this document is advised to consider the total technical content and not only the changes identified. *The user is ultimately responsible for recognising any differences between this edition and the previous edition of the document. ISO expressly disclaims any liability or responsibility for loss or damage resulting from inappropriate use of this document on the basis of any inaccuracy in the changes identified.*

It is the intention of TC67 that either this edition or the previous edition of ISO 11960 are applicable, at the option of the purchaser (as defined in 4.1.38), for a period of six months from the first day of the calendar quarter immediately following the date of publication of this edition, after which period the previous edition will no longer be applicable.

Petroleum and natural gas industries — Steel pipes for use as casing or tubing for wells

1 Scope

1.1 This International Standard specifies the technical delivery conditions for steel pipes (casing, tubing, plain-end casing liners and pup joints), coupling stock, coupling material and accessory material/accessories and establishes requirements for three Product Specification Levels (PSL-1, PSL-2, PSL-3). The requirements for PSL-1 are the basis of this International Standard. The requirements that define different levels of standard technical requirements for PSL-2 and PSL-3, for all Grades except H-40, L-80 9Cr and C110, are contained in Annex H.

For pipes covered by this International Standard, the sizes, masses and wall thicknesses as well as grades and applicable end-finishes are listed in Tables C.1 to C.3 and Tables E.1 to E.3.

By agreement between the purchaser and manufacturer, this International Standard can also be applied to other plain-end pipe sizes and wall thicknesses.

This International Standard is applicable to the following connections in accordance with API Spec 5B:

- short round thread casing (STC);
- long round thread casing (LC);
- buttress thread casing (BC);
- extreme-line casing (XC);
- non-upset tubing (NU);
- external upset tubing (EU);
- integral joint tubing (IJ).

For such connections, this International Standard specifies the technical delivery conditions for couplings and thread protection. Supplementary requirements that may optionally be agreed for enhanced leak resistance connections are given in A.11 SR22.

This International Standard can also be applied to tubulars with connections not covered by ISO/API standards.

1.2 The four groups of products to which this International Standard is applicable include the following grades of pipe:

- Group 1: All casing and tubing in Grades H, J, K, N and R;
- Group 2: All casing and tubing in Grades C, L, M and T;
- Group 3: All casing and tubing in Grade P;

— Group 4: All casing in Grade Q.

1.3 Casing sizes larger than Label 1: 4-1/2 but smaller than Label 1: 10-3/4 may be specified by the purchaser to be used in tubing service, see Tables C.1, C.24, C.30 and C.31 or Tables E.1, E.24, E.30 and E.31.

1.4 Supplementary requirements that may optionally be agreed between purchaser and manufacturer for non-destructive examination, coupling blanks, upset casing, electric-welded casing, impact testing, seal ring couplings and certificates are given in Annex A.

1.5 This International Standard is not applicable to threading requirements.

NOTE Dimensional requirements on threads and thread gauges, stipulations on gauging practice, gauge specifications, as well as instruments and methods for inspection of threads are given in API Spec 5B.

2 Conformance

2.1 Normative references

In the interests of world-wide application of this International Standard, ISO/TC 67 has decided, after detailed technical analysis, that certain of the normative documents listed in Clause 3 and prepared by ISO/TC 67 or other ISO Technical Committee are interchangeable in the context of the relevant requirement with the relevant document prepared by the American Petroleum Institute (API), the American Society for Testing and Materials (ASTM) or the American National Standards Institute (ANSI). These latter documents are cited in the running text following the ISO reference and preceded by “or”, for example “ISO XXXX or API YYYYY”. Application of an alternative normative document cited in this manner will lead to technical results different from the use of the preceding ISO reference. However, both results are acceptable and these documents are thus considered interchangeable in practice.

2.2 Units of measurement

In this International Standard, data are expressed in both the International System (SI) of units and the United States Customary (USC) system of units. For a specific order item, it is intended that only one system of units be used, without combining data expressed in the other system.

Products manufactured to specifications expressed in either of these unit systems shall be considered equivalent and totally interchangeable. Consequently, compliance with the requirements of this International Standard as expressed in one system provides compliance with requirements expressed in the other system.

For data expressed in the SI, a comma is used as the decimal separator and a space as the thousands separator. For data expressed in the USC system, a dot (on the line) is used as the decimal separator and a space as the thousands separator.

In the text, data in SI units are followed by data in USC units in parentheses.

Separate tables for data expressed in SI units and USC units are given in Annex C and Annex E respectively.

Figures are contained in Annex D and express data in both SI and USC units.

3 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 (including any amendments) applies.

ISO 31-0, *Quantities and units — Part 0: General principles*

ISO 643, *Steels — Micrographic determination of the apparent grain size*

ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method*

ISO 6506-2, *Metallic materials — Brinell hardness test — Part 2: Verification and calibration of testing machines*

ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method (Scales A, B, C, D, E, F, G, H, K, N, T)*

ISO 6508-2, *Metallic materials — Rockwell hardness test — Part 2: Verification and calibration of testing machines (Scales A, B, C, D, E, F, G, H, K, N, T)*

ISO 6892, *Metallic materials — Tensile testing at ambient temperature*

ISO 7500-1, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

ISO 8501-1, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings*

ISO 9303, *Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes — Full peripheral ultrasonic testing for the detection of longitudinal imperfections*

ISO 9304, *Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes — Eddy current testing for the detection of imperfections*

ISO 9305, *Seamless steel tubes for pressure purposes — Full peripheral ultrasonic testing for the detection of transverse imperfections*

ISO 9402, *Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes — Full peripheral magnetic transducer/flux leakage testing of ferromagnetic steel tubes for the detection of longitudinal imperfections*

ISO 9513, *Metallic materials — Calibration of extensometers used in uniaxial testing*

ISO 9598, *Seamless steel tubes for pressure purposes — Full peripheral magnetic transducer/flux leakage testing of ferromagnetic steel tubes for the detection of transverse imperfections*

ISO 9764, *Electric resistance and induction welded steel tubes for pressure purposes — Ultrasonic testing of the weld seam for the detection of longitudinal imperfections*

ISO/TR 9769, *Steel and iron — Review of available methods of analysis*

ISO **TR** 10400, *Petroleum and natural gas industries — Formulae and calculation for casing, tubing, drill pipe and line pipe properties*

ISO 11484, *Steel tubes for pressure purposes — Qualification and certification of non-destructive testing (NDT) personnel*

ISO 13665, *Seamless and welded steel tubes for pressure purposes — Magnetic particle inspection of the tube body for the detection of surface imperfections*

ISO 13678, *Petroleum and natural gas industries — Evaluation and testing of thread compounds for use with casing, tubing and line pipe*

ISO 15156-2, *Materials for use in H₂S-containing environments in oil and gas production - Part 2: Cracking-resistant carbon and low alloy steels, and the use of cast irons*

ISO/IEC 17011, *Conformity assessment — General requirements for accreditation bodies accrediting conformity assessment bodies*

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

ANSI-NACE TM0177-2005, *Laboratory testing of metals for resistance to sulfide stress cracking at ambient temperature in H₂S environment*

ANSI-NACE TM0284-2003, *Evaluation of pipeline and pressure vessels for resistance to hydrogen induced cracking*

ANSI-NACE MR0175/ISO 15156-2, *Materials for use in H₂S-containing environments in oil and gas production - Part 2: Cracking-resistant carbon and low alloy steels, and the use of cast irons*

API Bull 5C2, *Bulletin On Performance Properties of Casing, Tubing and Drill Pipe*

API TR 5C3, *Bulletin On Formulas and Calculations For Casing, Tubing, Drill Pipe and Line Pipe Properties (plus Supplement 1)*

API RP 5A3, *Recommended Practice On Thread Compounds For Casing, Tubing And Line Pipe*

API Spec 5B, *Specification For Threading, Gauging And Thread Inspection Of Casing, Tubing And Line Pipe Threads*

API Std 5T1, *Imperfection terminology*

ASNT SNT-TC-1A, *Recommended practice, personnel qualification and certification in non destructive testing*

ASTM A 370, *Standard Test Methods and Definitions for Mechanical Testing of Steel Products*

ASTM A 751, *Standard Test Methods, Practices and Terminology for Chemical Analysis of Steel Products*

ASTM A 941, *Terminology Relating to Steel, Stainless Steel, Related Alloys and Ferroalloys*

ASTM B 117, *Standard Practice for Operating Salt Spray (Fog) Apparatus*

ASTM E 4, *Standard Practices for Force Verification of Testing Machines*

ASTM E 10, *Standard Test Method for Brinell Hardness of Metallic Materials*

ASTM E 18, *Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials*

ASTM E 23, *Standard Test Methods for Notched Bar Impact Testing of Metallic Materials*

ASTM E 29, *Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications*

ASTM E 83, *Standard Practice for Verification and Classification of Extensometer Systems*

ASTM E 112, *Standard Test Methods for Determining Average Grain Size*

ASTM E 213, *Standard Practice for Ultrasonic Examination of Metal Pipe and Tubing*

ASTM E 273, *Standard Practice for Ultrasonic Examination of the Weld Zone of Welded Pipe and Tubing*

ASTM E 309, *Standard Practice for Eddy-current Examination of Steel Tubular Products Using Magnetic Saturation*

ASTM E 543, *Standard Practice for Agencies Performing Nondestructive Testing*

ASTM E 570, *Standard Practice for Flux Leakage Examination of Ferromagnetic Steel Tubular Products*

ASTM E 709, *Standard Guide for Magnetic Particle Examination*

IADC/SPE 11396, B.A. Dale, M.C. Moyer, T.W. Sampson, *A Test Program for the Evaluation of Oilfield Thread Protectors*, IADC/SPE Drilling Conference, New Orleans, LA, 20-23 February 1983

MIL-STD-810c, *Military Environmental Test Methods*, March 10, 1975

4 Terms, definitions, symbols and abbreviated terms

4.1 Terms and definitions

For the purposes of this document, the terms and definitions in ASTM A 941 for heat treatment operations and the following apply.

4.1.1

accessory material

seamless casing or tubing, or seamless thick-walled tubes, or bar stock or hot forgings used for the manufacture of accessories

4.1.2

API threads

threads as specified in API Spec 5B

4.1.3

arc burn

localised point of surface melting caused by arcing between an electrode or ground (earth) and the pipe surface

4.1.4

carload

quantity of pipe loaded on a railway car for shipment from the pipe-making facilities

4.1.5

casing

pipe run from the surface and intended to line the walls of a drilled well

4.1.6

casing and tubing accessory

one-piece tubular section used in a pipe string to provide mechanical and pressure integrity within the pipe string and facilitate the performance of some other function required of that pipe string

EXAMPLES Crossover connectors, swages, nipples, flow couplings, blast joints, etc.

NOTE Casing and tubing accessory excludes the other tubular products specifically defined in this International Standard or products included in other ISO (API) specifications.

Annex L (informative)

Technical changes from the previous edition

L.1 Introduction

This informative annex is intended to guide the user to places where significant technical changes have been introduced into the previous edition of this International Standard. Editorial changes are not included in this annex.

While this annex is intended to be comprehensive the user should satisfy himself that he fully understands the changes which have been made. The user is ultimately responsible for recognising any differences between this edition and the previous edition of the document.

L.2 Requirements for Group 2, Grade C110

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L.3 Changes to non-destructive examination requirements

10	Inspection and testing	10.15.1 10.15.3 10.15.15
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L.4 Changes to sulfide stress cracking requirements for Group 2, Grades C90 and T95

7	Material requirements	7.14
10	Inspection and testing	10.10

L.5 Changing Group 2, Grade C95 to Group 1, Grade R95

1	Scope	
5	Information to be supplied by the purchaser	5.1
6	Process of manufacture	6.2.2
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		6.3.2
7	Material requirements	7.4.5
		7.5.3
10	Inspection and testing	10.4.9
		10.6
		10.7
		10.15.6
11	Marking	11.2.1
		11.2.4
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		11.2.6
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Annex A	Supplementary requirements	A.3
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Annex F	Marking instructions for API licensees	F.2.4
		F.2.5
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		G.8.4
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Annex H	Product Specification Levels	H.3.2

L.6 Change to Label-1: 7 coupling outside diameter

Annex C	Tables in SI units	Table C/E.35
Annex E	Tables in USC units	Table C/E.36

L.7 Introduction of "product test block" and "standardised test block"

3	Normative references	
4	Terms and definitions	
10	Inspection and testing	10.6.3
		10.6.9
		10.6.10
		10.6.12
		10.6.13
Annex D	Figures in SI (USC units)	Figure D.10

L.8 Change to requirements for NDE of weld seams

10	Inspection and testing	10.15.10
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L.9 Change to requirements for weight tolerances

8	Dimensions, masses, tolerances, pipe ends and defects	8.11.3
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L.10 Requirements for imperfections in threaded sections

8	Dimensions, masses, tolerances, pipe ends and defects	8.13
10	Inspection and testing	10.15.16

L.11 Requirements for marking seal ring couplings

Annex A	Supplementary requirements	A.8.3
Annex C	Tables in SI units	Table C.66
Annex D	Figures in SI (USC) units	Figure D.30
Annex E	Tables in USC units	Table E.66

L.12 Requirements for paint marking Grades L80 9Cr and L80 13Cr

11	Marking	11.4.3
		11.4.4
		11.4.5
Annex C	Tables in SI units	Table C.66
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L.13 Requirements for arc burns

4	Terms and definitions	
8	Dimensions, masses, tolerances, pipe ends and defects	8.13.1
		8.13.2
9	Couplings	9.14.8
10	Inspection and testing	10.15.6

L.14 Introduction of "coupling material"

1	Scope	
4	Terms and definitions	
5	Information to be supplied by the purchaser	5.3
6	Process of manufacture	6.1
		6.4.2
7	Material requirements	7.4
8	Dimensions, masses, tolerances, pipe ends and defects	8.2
		8.4

		8.6
		8.9.2
		8.11
		8.13..2
9	Couplings	9.1
		9.4
10	Inspection and testing	10.2
		10.4
		10.6.7
		10.7
		10.12.2
		10.13
11	Marking	11.1.11
12	Coating and protection	12.1.1
14	Minimum facility requirements for various categories of manufacturer	14.1
		14.2
Annex A	Supplementary requirements	A.9.1
Annex C	Tables in SI units	Table C/E.41
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Annex D	Figures in SI (USC) units	Figure D.10