

JIS・ISO標準化事業の状況－JIS-Internationalを目指して

Status of JIS ISO Standardization Project – Goal is JIS-International

【標準化】

日本鉄鋼連盟は、従来からJIS(日本工業規格)及びIS(国際規格)の標準化を継続推進している。対象分野は、鉄鉱石から、鋼板・めっき鋼板・形鋼・棒鋼・線材・鋼管などの鉄鋼製品、さらに機械試験、化学分析、非破壊検査など評価方法に至る極めて広い範囲をカバーし、規格数で約280件のJIS、約440件のISを担当している。JIS-Internationalという理念のもと質の高い鉄鋼JIS作りの活動を展開している。

【国際標準化】

日本鉄鋼連盟は、従来からJISC(日本工業標準調査会)を代表して、ISO/TC17(鋼)、ISO/TC102(鉄鉱石及び還元鉄)、など5件のISO委員会の幹事を務め、ISO(国際標準化機構)の活動を積極的に支援するなど、国際貢献に注力している。また、現在、規格の開発がより活発となるように、ISO/TC17及びISO/TC102の活動の改善を目指したプロジェクト活動を展開中である。

【鉄鋼標準物質】

日本鉄鋼連盟は、化学分析用の鉄鋼標準物質(約340種)を製造・販売している。これらはJSSとして国内外でよく知られており、鉄鋼生産の基本インフラとして、あるいは学術研究のための基準物質として、鉄鋼業だけでなく、広く国内外の行政機関・教育機関・研究機関で利用されている。

■ Standardization

For many years, the JISF has been promoting standardization by using JIS (Japan Industrial Standard) and IS (International Standard). These standards cover an extremely broad range of activities. Iron ore as well as flat-rolled products, coated sheets, sections, wire rods, tubes and other steel products are included. Furthermore, standardization covers mechanical tests, chemical analysis, nondestructive tests and other evaluation methods. There are about 280 JIS standards and about 440 IS standards. The JISF is conducting activities with the goal of establishing high-quality JIS standards for iron ore and steel under the JIS-International concept.

■ International Standardization

The JISF has been making a contribution on an international scale by extending extensive support for ISO (International Organization for Standardization) activities. As the representative of the Japan Industrial Standards Committee (JISC), the JISF serves as the secretariat of five ISO committees, including ISO/TC17 (Steel) and ISO/TC102 (Iron ore and direct reduced iron). In addition, the JISF is currently involved in a project aimed at improving the activities of ISO/TC17 and ISO/TC102 in order to speed up the development of standards.

■ Japanese Iron and Steel Certified Reference Materials

The JISF produces and sells approximately 340 Certified Reference Materials (CRMs) for chemical analysis. Well-known as “JSS” in Japan and other countries, these specimens are widely used in the steel industry as well as by government agencies, academic institutions and research institutes worldwide as benchmark materials for iron and steel production or reference materials in scientific studies.

1. JIS Establishments and Revisions

The following JIS standards for iron and steel were newly established, revised or withdrawn during fiscal 2009.

(1) Newly established standards – None

(2) Revised standards – 29

JIS A 5525	Steel pipe piles
JIS G 0203	Glossary of terms used in iron and steel (Products and quality)
JIS G 0320	Standard test method for heat analysis of steel products
JIS G 0431	Steel products -Employer's Qualification system for non-destructive testing personnel
JIS G 0901	Classification of structural rolled steel plate and wide flat for building by ultrasonic test
JIS G 3112	Steel bars for concrete reinforcement (SR, SD)
JIS G 3115	Steel plates for pressure vessels (SPV)
JIS G 3118	Carbon steel plates for intermediate and moderate temperature services
JIS G 3120	Manganese-molybdenum and manganese-molybdenum-nickel alloy steel plates quenched and tempered for pressure vessels (SQV)
JIS G 3124	High-strength steel plates for pressure vessel for intermediate and moderate temperature service (SEV)
JIS G 3126	Carbon steel plates for pressure vessels for low temperature service (SLA)
JIS G 3128	High yield strength steel plates for welded structure (SHY)
JIS G 3133	Decarburized steel sheet and strip for porcelain enamelling (SPP)
JIS G 3141	Cold-reduced carbon steel sheet and strip (SPCC, SPCD, SPCE, SPCF, SPCG)
JIS G 3199	Specification for through-thickness characteristics of steel plate, wide flat and sections
JIS G 3311	Cold-rolled special steel strip (S, SK, SKS, SCR, SNC, SNCM, SCM, SUP, SMn)
JIS G 3314	Hot-dip aluminium-coated steel sheets and coils (SA)
JIS G 3350	Light gauge steel sections for general structure (SSC)
JIS G 3442	Galvanized steel pipes for ordinary piping (SGPW)
JIS G 3447	Stainless steel sanitary pipes
JIS G 3452	Carbon steel pipes for ordinary piping (SGP)
JIS G 3456	Carbon steel pipes for hightemperature service (STPT)
JIS G 3462	Alloy steel tubes for boiler and heat exchanger
JIS G 3509-1	Low-alloyed steels for cold heading – Part 1:Wire rods (SCMxxxRCH)
JIS G 4051	Carbon steels for machine structural use (SxxxC, SxxxCK)
JIS G 4401	Carbon tool steels (SK)
JIS M 8702	Iron ores – Sampling and sample preparation procedures
JIS M 8718	Iron ore pellets for blast furnace and direct reduction feedstocks – Determination of the crushing strength
JIS M 8720	Iron ores – Determination of low-temperature reduction-disintegration

(3) 廃止はなし。

2. IS制改正

2009年度には、下記の鉄鋼関連ISが制改廃された。

- (1) 制定10件(鉄筋2、分析1、石油・天然ガス1、パイプライン1、鉄鉱石2、機械試験3)
- (2) 改正14件(石油・天然ガス3、油井管2、鉄鉱石4、非破壊試験1、機械試験4)
- (3) 廃止4件(鉄鉱石2、機械試験2)

3. 規格活動のトピックス

(1) JIS鉄筋コンクリート用棒鋼の改正

日本から優れた鋼材特性としてISOに提案しISO規格に規定された耐震特性の低YR(降伏比)をJISにも規定した。

(2) JIS鉄鋼製品の雇用主による非破壊試験技術者の資格付与

鉄鋼製品製造時に適用される非破壊検査において使用される「雇用主による非破壊試験技術者の資格付与(認証)」のISO規格が鋼管用であったため、日本から全鉄鋼製品に使用可能なように改正提案し採用された。今回、JISの改正を行い、全ての鉄鋼製品は国際的に認められた雇用主による認証試験の内容によるJISに基づいた非破壊検査が実施可能となった。

(3) ISO6892-1室温引張試験方法規格改正への対応

欧州が新しく開発した試験方法(ひずみ速度制御)をISOに提案し、一時は全面改正の危機を迎えたが、日本が強く提案し、非欧州各国の支援を受けて、従来の試験方法(応力増加速度制御)を残すことに成功した。

(4) ISO16630穴広げ試験方法の制定

日本が開発した「自動車用・高穴広げ型鋼板」の優れた特性を評価するための鉄鋼連盟規格の試験方法をISO規格として制定した。1998年にISOに提案したが、当時は日本以外の国が使用しないとしてTS(技術仕様書)として制定され、今回、欧米でも同様の規格化の動きがありISO規格化が実現した。

(5) JIS顧客ニーズへの対応

軽量形鋼で、JIS規定外寸法、めっきなどの表面処理製品に対する規格化の要望があり改正した。機械構造用炭素鋼鋼材及び炭素工具鋼材で、従来は熱間圧延鋼材しか対象にしていなかったが、薄物の要求の増加に対応するため冷間圧延鋼板及び鋼帯を対象に追加した。

4. ISO幹事国業務

下記5件のISO委員会のIS化推進、業務管理、普及活動等を行った。

- ①ISO/TC102(鉄鉱石及び還元鉄)
- ②ISO/TC102/SC1(サンプリング方法)
- ③ISO/TC17(鋼)
- ④ISO/TC17/SC1(化学成分の定量方法)
- ⑤ISO/TC67/SC5(油井管)

5. 鉄鋼標準物質

2009年度は、次のJSS11品種の販売を開始した。

- ①JSS 383-1：酸素定量用 10ppm
- ②JSS 384-1：酸素定量用 20ppm
- ③JSS 386-1：酸素定量用 150ppm
- ④JSS 387-1：酸素定量用 180ppm
- ⑤JSS 389-1：酸素定量用 500ppm
- ⑥JSS 154-16：低合金鋼5号
- ⑦JSS 175-8：微量元素シリーズB-8号
- ⑧JSS 201-14：炭素定量専用鋼
- ⑨JSS 805-2：ブラジル赤鉄鉱
- ⑩JSS 831-2：タハロア砂鉄
- ⑪JSS 851-5：焼結鉱

(3) Withdrawn standards – None

2. Newly established or revised IS standards

The following IS standards for iron and steel were newly established, revised or withdrawn during fiscal 2009.

- (1) Newly established: 10 (reinforcing bars 2, analysis 1, petroleum and natural gas 1, pipelines 1, iron ore 2, mechanical tests 3)
- (2) Revised: 14 (petroleum and natural gas 3, casing, tubing and drill pipe 2, iron ore 4, nondestructive tests 1, mechanical tests 4)
- (3) Withdrawn: 4 (iron ore 2, mechanical tests 2)

3. Topics related to standardization activities

(1) JIS revisions for steel bars for concrete reinforcement

A low yield ratio (YR) for resistance to earthquakes that was adopted as an ISO standard following a proposal to Japan as an outstanding property for steel has also been adopted by JIS.

(2) JIS qualification and certification of nondestructive testing personnel for steel products

The ISO “qualification and certification of nondestructive testing personnel for steel products” for nondestructive tests used during the manufacture of steel products was used for steel pipes. Consequently, Japan’s proposal for a revision allowing this standard to be used for all steel products was adopted. Due to this JIS revision, JIS nondestructive tests can be performed for all steel products using certified testing methods by steel product manufacturers that have received international certification.

(3) Compliance with revised ISO6892-1 standard for tensile testing at ambient temperature

At one time, there was a crisis about a complete revision of this standard when Europe proposed its newly developed testing method (strain rate control) to the ISO. But the existing testing method (stress rate control) was retained at the strong urging of Japan and with the support of many other non-European countries.

(4) Establishment of ISO16630 testing method for hole expansion

The JISF-standard testing method for evaluating the outstanding properties of “Automotive steel sheets with high hole expandability” developed in Japan became an ISO standard. In 1998, this was proposed to the ISO but it was adopted only as a technical standard because this method was used only in Japan at that time. This time, the method became an ISO standard because the U.S. and European countries also back this action.

(5) Response to needs of JIS customers

These revisions were made due to the demand for standards for light-gauge steel sections using coating strip and applying sizes that do not conform to JIS dimensions. Previously, for carbon steel for machines and structural use and carbon tool steels, the standard applied only to hot-rolled steel. In response to the rising demands involving thin materials, the standard now applies also to cold-rolled sheets and strips.

4. Activities as ISO secretariat country

As the organization representing the secretariat country, the JISF was involved in promoting international standardization, administrative control and the information dissemination activities of the following five ISO committees.

- 1) ISO/TC102 (Iron ore and direct reduced iron)
- 2) ISO/TC102/SC1 (Sampling)
- 3) ISO/TC17 (Steel)
- 4) ISO/TC17/SC1 (Methods of determination of chemical composition)
- 5) ISO/TC67/SC5 (Casing, tubing and drill pipe)

5. Japanese Iron and Steel Certified Reference Materials

In fiscal 2009, the JISF started selling the following 11 reference materials(JSS).

- 1) JSS 383-1 Steel for oxygen determination 10ppm
- 2) JSS 384-1 Steel for oxygen determination 20ppm
- 3) JSS 386-1 Steel for oxygen determination 150ppm
- 4) JSS 387-1 Steel for oxygen determination 180ppm
- 5) JSS 389-1 Steel for oxygen determination 500ppm
- 6) JSS 154-16 Low alloy steel No. 5
- 7) JSS 175-8 Minor elements determination series B-8
- 8) JSS 201-14 Steel for carbon determination
- 9) JSS 805-2 Brazilian hematite
- 10) JSS 831-2 Taharao iron sand
- 11) JSS 851-5 Sintered ore