Submit Comments

ENTERPRISE SINGAPORE CALLS FOR PUBLIC COMMENTS – 16 AUGUST 2019

Under the National Standardisation Programme, the public comment period is an important stage of standards development. Members of the public are invited to provide feedback on draft Singapore Standards for publication and work item proposals for development and review of Singapore Standards and Technical References. The establishment of Singapore Standards is done in accordance with the World Trade Organisation's requirements for the development of national standards.

A)   Notification of Draft Singapore Standards for Publication

Members of the public are invited to comment on the following Singapore Standard documents:

Building and Construction – steel bridges, piling, rules for buildings, rules for bridges, structural fire design, plain bars

Chemical – textured coatings for exterior walls

Electrical and Electronic – 13 A fused plugs, passenger and goods lifts

Manufacturing – electrical/electronic/programmable electronic safety-related systems, enterprise-control system integration, OPC unified architecture (SS), sensor networks, condition monitoring and diagnostics of machines, diagnostics, capability assessment and maintenance applications integration, KPIs for manufacturing operations management

For more information on viewing the document, click here.

Closing date for comments: **17 September 2019** for the standard on textured coatings for exterior walls as it had undergone an earlier round of public comment.

Closing date for all other documents above: **17 October 2019**.

Please submit comments to: kay_chua@enterprisesg.gov.sg.

B)   Notification of Work Item Proposals

B.1   Proposal for New Work Items

New Work Items (NWIs) are approved proposals to develop new Singapore Standards or Technical References (pre-standards).

Members of the public are invited to comment on the scope of the new standards and contents that can be included into the following proposals:

Manufacturing (TRs) – OPC unified architecture, digital factory framework, energy efficiency through automation systems, operational sequence description of data acquisition, additive manufacturing

Closing date for comments: **17 September 2019**.

Please submit comments to: kay_chua@enterprisesg.gov.sg.

B.2   Proposal for the Review of Singapore Standards

Published Singapore Standards are reviewed to determine if they should be updated, confirmed or withdrawn (if they no longer serve the industry's needs) or classified as mature standards (no foreseeable changes; to be reviewed only upon request).

Members of the public are invited to comment on the scope and contents of the following standard to be reviewed:

Building and Construction – design and management of aquatic facilities

The review is ongoing and the new version/draft is not available at this juncture. Users can refer to the current standard to provide feedback. Click here to view and purchase the standard.

Closing date for comments: **17 September 2019**.

Members of the public are invited to join as standards partners, resource members or co-opted members subject to the approval of relevant committees and working groups.

To comment or to join in the development of the standard, please write to kay_chua@enterprisesg.gov.sg.

A)   Notification of draft Singapore Standards for Publication

(I)   *Building and Construction*

Confirmation

1.   **Eurocode 3 : Design of steel structures – Part 2 : Steel bridges** (SS EN 1993-2 : 2011)
Singapore National Annex to Eurocode 3 : Design of steel structures – Part 2 : Steel bridges (NA to SS EN 1993-2 : 2011)

This standard and its national annex provide a general basis for the structural design of steel bridges and steel parts of composite bridges. They give provisions that supplement, modify or supersede the equivalent provisions given in the various parts of EN 1993-1.

2.   **Eurocode 3 : Design of steel structures – Part 5 : Piling** (SS EN 1993-5 : 2010)
Singapore National Annex to Eurocode 3 : Design of steel structures Part 5 : Piling (NA to SS EN 1993-5 : 2010)

This standard and its national annex provide principles and application rules for the structural design of bearing piles and sheet piles made of steel. They also provide examples of detailing for foundation and retaining wall structures.

3.   **Eurocode 4 : Design of composite steel and concrete structures – Part 1-1 : General rules and rules for buildings** (SS EN 1994-1-1 : 2009)
Singapore National Annex to Eurocode 4 : Design of composite steel and concrete structures – Part 1-1 General rules and rules for buildings (NA to SS EN 1994-1-1 : 2009)

This standard and its national annex give a general basis for the design of composite structures together with specific rules for buildings.

4.   **Eurocode 4 : Design of composite steel and concrete structures – Part 1-2 : General rules – Structural fire design** (SS EN 1994-1-2 : 2009)
Singapore National Annex to Eurocode 4 : Design of composite steel and concrete structures - Part 1-2 General rules Structural fire design (NA to SS EN 1994-1-2 : 2009)

This standard and its national annex deal with the design of composite steel and concrete structures for the accidental situation of fire exposure and is intended to be used in conjunction with SS EN 1994-1-1 and SS EN 1991-1-2. This standard only identifies differences from, or supplements to, normal temperature design.

5. **Eurocode 4 : Design of composite steel and concrete structures – Part 2 : General rules and rules for bridges** (SS EN 1994-2 : 2011)
   Singapore National Annex to Eurocode 4 : Design of composite steel and concrete structures – Part 2 : General rules and rules for bridges (NA to SS EN 1994-2 : 2011)

   This standard and its national annex give design rules for steel-concrete composite bridges or members of bridges, additional to the general rules in SS EN 1994-1-1.

   Potential users of the Eurocodes include contractors, developers, professional engineers, consultants, suppliers / manufacturers, testing bodies, accreditation bodies, tertiary institutions and relevant government agencies.

   Mature standard

6. **Specification for steel for the reinforcement of concrete – Plain bars** (SS 566 : 2011)

   This standard specifies technical requirements for plain bars to be used as reinforcement in concrete.

   Users of the standard include contractors, developers, professional engineers, consultants, suppliers / manufacturers, testing bodies, accreditation bodies, tertiary institutions and relevant government agencies.

   It is proposed to classify SS 566 as a mature standard as there are no foreseeable changes to the standard. Hence, it will not be reviewed until a request is put forth to do so.

(II) *Chemical*

   Revision

7. **Specification for textured coatings for exterior walls** (Revision of SS 502 : 2003)

   This standard applies to textured coatings on concrete surfaces (including plastered brick and block walls) for exterior walls of buildings. There is a great variety of textured coatings systems available and thus it is almost impossible to stipulate a standard specification. This standard focuses on the performance requirements of the textured coating system so that regardless of the nature of the individual coats, whether water-based or solvent-based, rigid or elastic, etc., the system must comply with the requirements.

   The standard was released for public comment from 9 November 2018 to 10 January 2019. The main change is the inclusion of qualitative requirements on specific hazardous substances and the removal of the VOC limit, as well as the replacement of performance criteria "Dirt retention" with "Natural weathering".

   Users of the standard include testing laboratories, paint suppliers and manufacturers, industry associations, contractors, consultants, architects and relevant government agencies.

   Closing date for comment: **17 September 2019**.

(III) *Electrical and Electronic*

   Revision

8. **Specification for 13A plugs, socket-outlets, adaptors and connection units – Part 1 : Rewirable and non-rewirable 13 A fused plugs** (Revision of SS 145-1 : 2010) (Modified adoption of BS 1363-1:2016+A1:2018)

   This standard specifies requirements for 13 A fused plugs having insulating sleeves on line and neutral pins, for household, commercial and light industrial purposes, with particular reference to safety in normal use. The plugs are suitable for the connection of portable appliances, sound-vision equipment, luminaries, etc. in a.c. circuits only, operating at voltages not exceeding 250 V r.m.s. at 50 Hz.

Requirements are specified for plugs incorporating a fuse link conforming to SS 167, "General purpose fuse links for domestic and similar purposes (primarily for use in plugs)". Plugs incorporating switches, indicator lamps and electronic components are within the scope of this standard.

This standard does not cover plug incorporating remote control switching and remote energy monitoring functions.

Potential users of the standard may include manufacturers and suppliers, licenced electrical workers, contractors, professional engineers, consultants and testing laboratories.

9. **Code of practice for installation, operation and maintenance of electric passenger and goods lifts** (Revision of SS 550 : 2009) (Modified adoption of EN 81-20:2014)

This standard specifies the safety rules for permanently installed new passenger or goods lifts, with traction or hydraulic drive, serving defined landing levels, having a car designed for the transportation of persons or goods or persons and goods, suspended by ropes or jacks and moving between guide rails inclined not more than 15° to the vertical. In addition to the requirements of this standard, supplementary requirements shall be considered in special cases (use of lifts by persons with disabilities, in case of fire, potentially explosive atmosphere, extreme climate conditions, seismic conditions, transporting dangerous goods, etc.).

Potential users of the standard may include manufacturers and suppliers, architects, professional engineers, authorised examiners, technicians, contractors, consultants, testing laboratories, inspection bodies, and academic institutions.

(IV)   *Manufacturing*

New

10.   **Functional safety of electrical/electronic/programmable electronic safety-related systems**

   Part 1: General requirements (Identical adoption of IEC 61508-1:2010)

   This standard covers those aspects to be considered when electrical/electronic/programmable electronic (E/E/PE) systems are used to carry out safety functions.

   Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems (Identical adoption of IEC 61508-2:2010)

   This standard applies to any safety-related system (as defined by Part 1) that:

   – contains at least one electrical, electronic or programmable electronic element;
   – applies to all elements within an E/E/PE safety-related system;
   – specifies how to refine the E/E/PE system safety requirements specification, developed in accordance with Part 1, into the E/E/PE system design requirements specification;
   – specifies the requirements for activities that are to be applied during the design and manufacture of the E/E/PE safety-related systems except software, which is dealt with in part 3.

   Part 3: Software requirements (Identical adoption of IEC 61508-3:2010)

   This standard applies to any software forming part of a safety-related system or used to develop a safety-related system within the scope of Part 1 and Part 2.

   It provides specific requirements applicable to support tools used to develop and configure a safety-related system within the scope of Part 1 and Part 2.

   It requires that the software safety functions and software systematic capability are specified.

   It establishes requirements for safety lifecycle phases and activities which shall be applied during the design and development of the safety-related software.

Part 4: Definitions and abbreviations (Identical adoption of IEC 61508-4:2010)

This standard contains the definitions and explanation of terms that are used in Parts 1 to 7 of the proposed SS IEC 61508 series of standards.

Part 5: Examples of methods for the determination of safety integrity levels (Identical adoption of IEC 61508-5:2010)

This standard provides information on the underlying concepts of risk and the relationship of risk to safety integrity, and a number of methods that will enable the safety integrity levels for the E/E/PE safety-related systems to be determined.

Part 6: Guidelines on the application of SS IEC 61508-2 and SS IEC 61508-3 (Identical adoption of IEC 61508-6:2010)

This standard contains information and guidelines on Part 2 and Part 3.

Part 7: Overview of techniques and measures (Identical adoption of IEC 61508-7:2010)

This standard contains an overview of various safety techniques and measures relevant to Part 2 and Part 3.

11.   **Enterprise-control system integration**

Part 1: Models and terminology (Identical adoption IEC 62264-1:2013)

This standard describes the manufacturing operations management domain and its activities, and the interface content and associated transactions. This description enables integration between the manufacturing operations and control domain and the enterprise domain. Its goals are to increase uniformity and consistency of interface terminology and reduce the risk, cost, and errors associated with implementing these interfaces.

This standard can be used to reduce the effort associated with implementing new product offerings.

Part 2: Object and attributes for enterprise-control system integration (Identical adoption IEC 62264-2:2013)

This standard specifies generic interface content exchanged between manufacturing control functions and other enterprise functions. The goal is to reduce the risk, cost, and errors associated with implementing the interface.

Part 3: Activity models of manufacturing operations management (Identical adoption IEC 62264-3:2016)

This standard defines activity models of manufacturing operations management that enable enterprise system to control system integration.

Part 4: Objects and attributes for manufacturing operations management integration (Identical adoption IEC 62264-4:2016)

This standard defines object models and attributes exchanged between manufacturing operations management activities.

Part 5: Business to manufacturing transactions (Identical adoption IEC 62264-5:2016)

This standard defines transactions in terms of information exchanges between applications performing business and manufacturing activities. The exchanges are intended to enable information collection, retrieval, transfer and storage in support of enterprise-control system integration.

12. OPC unified architecture

Part 3: Address space model (Identical adoption IEC 62541-3:2015)

This standard describes the OPC Unified Architecture (OPC UA) AddressSpace and its Objects. It is the OPC UA meta model on which OPC UA information models are based.

Part 4: Services (Identical adoption IEC 62541-4:2015)

This standard defines the OPC UA Services. The Services described are the collection of abstract Remote Procedure Calls (RPC) that are implemented by OPC UA Servers and called by OPC UA Clients.

Part 5: Information model (Identical adoption IEC 62541-5:2015)

This standard defines the Information Model of the OPC UA. The Information Model describes standardised Nodes of a Server's AddressSpace. These Nodes are standardised types as well as standardised instances used for diagnostics or as entry points to server-specific Nodes.

Part 6: Mappings (Identical adoption IEC 62541-6:2015)

This standard specifies the OPC UA mapping between the security model, the abstract service definitions, the data structures and the physical network protocols that can be used to implement the OPC UA specification.

Part 7: Profiles (Identical adoption IEC 62541-7:2015)

This standard describes the OPC UA Profiles. The Profiles in this document are used to segregate features with regard to testing of OPC UA products and the nature of the testing (tool based or lab based).

Part 8: Data access (Identical adoption IEC 62541-8:2015)

This standard defines the information model associated with Data Access.

Part 9: Alarms and conditions (Identical adoption IEC 62541-9:2015)

This standard specifies the representation of Alarms and Conditions in the OPC UA. It includes the Information Model representation of Alarms and Conditions in the OPC UA address space.

Part 10: Programs (Identical adoption IEC 62541-10:2015)

This standard defines the information model associated with Programs.

Part 11: Historical access (Identical adoption IEC 62541-11:2015)

This standard defines the information model associated with Historical Access (HA).

Part 13: Aggregates (Identical adoption IEC 62541-13:2015)

This standard defines the information model associated with Aggregates.

Part 100: Device interface (Identical adoption IEC 62541-100:2015)

This standard defines the information model associated with Devices. It describes three models which build upon each other:

- the (base) Device Model intended to provide a unified view of devices;
- the Device Communication Model which adds Network and Connection information elements so that communication topologies can be created;

– the Device Integration Host Model finally which adds additional elements and rules required for host systems to manage integration for a complete system. It allows reflecting the topology of the automation system with the devices as well as the connecting communication networks.

13. Information technology – Sensor networks – Services and interfaces supporting collaborative information processing in intelligent sensor networks (Identical adoption of ISO/IEC 20005:2013)

This standard specifies services and interfaces supporting collaborative information processing (CIP) in intelligent sensor networks which includes:

– CIP functionalities and CIP functional model;
– common services supporting CIP;
– common service interfaces to CIP.

14. Information technology – Sensor networks: Sensor Network Reference Architecture (SNRA)

Part 1: General overview and requirements (Identical adoption of ISO/IEC 29182-1:2013)

This standard provides a general overview of the characteristics of a sensor network and the organisation of the entities that comprise such a network. It also describes the general requirements that are identified for sensor networks.

Part 2: Vocabulary and terminology (Identical adoption of ISO/IEC 29182-2:2013)

This standard is intended to facilitate the development of sensor network related standards. It presents terms and definitions for selected concepts relevant to the field of sensor networks. It establishes a general description of concepts in this field and identifies the relationships among those concepts.

Part 3: Reference architecture views (Identical adoption of ISO/IEC 29182-3:2014)

This standard provides SNRA views. The architecture views include business, operational, systems, and technical perspectives, and these views are presented in functional, logical, and/or physical views where applicable.

It focuses on high-level architecture views which can be further developed by system developers and implementers for specific applications and services.

Part 4: Entity models (Identical adoption of ISO/IEC 29182-4:2013)

This standard presents models for the entities that enable sensor network applications and services according to the SNRA.

Part 5: Interface definitions (Identical adoption of ISO/IEC 29182-5:2013)

This standard provides the definitions and requirements of sensor network interfaces of the entities in the SNRA and covers the following aspects:

– interfaces between functional layers to provide service access for the modules in the upper layer to exchange messages with modules in the lower layer;
– interfaces between entities introduced in the SNRA enabling sensor network services and applications.

Part 6: Applications (Identical adoption of ISO/IEC 29182-6:2014)

This standard describes and provides:

– a compilation of sensor network applications for which International Standardised Profiles (ISPs) are needed;

- guidelines for the structured description of sensor network applications; and
- examples for structured sensor network applications.

Part 7: Interoperability guidelines (Identical adoption of ISO/IEC 29182-7:2015)

This standard provides a general overview and guidelines for achieving interoperability between sensor network services and related entities in a heterogeneous sensor network.

15. **Condition monitoring and diagnostics of machines – Data processing, communication and presentation**

Part 1: General guidelines (Identical adoption of ISO 13374-1:2003)

This standard establishes general guidelines for software specifications related to data processing, communication, and presentation of machine condition monitoring and diagnostic information.

Part 2: Data processing (Identical adoption ISO 13374-2:2007)

This standard details the requirements for a reference information model and a reference processing model to which an open condition monitoring and diagnostics (CM&D) architecture needs to conform.

Software design professionals require both an information model and a processing model to adequately describe all data processing requirements. This part facilitates the interoperability of CM&D systems.

Part 3: Communication (Identical adoption ISO 13374-3:2012)

This standard specifies requirements for data communication for an open condition monitoring and diagnostics (CM&D) reference information architecture and for a reference processing architecture.

Software design professionals require communications to be defined for exchange of CM&D information between software systems.

This standard facilitates the interoperability of CM&D systems.

Part 4: Presentation (Identical adoption ISO 13374-4:2015)

This standard details the requirements for presentation of information for technical analysis and decision support in an open architecture for condition monitoring and diagnostics. Software design professionals need to present diagnostic/prognostic data, health information, advisories, and recommendations on computer displays and in written report formats to end-users.

This standard provides standards for the display of this information in CM&D systems.

16. **Industrial automation systems and integration – Diagnostics, capability assessment and maintenance applications integration**

Part 1: Overview and general requirements (Identical adoption ISO 18435-1:2009)

This standard defines an integration modelling method and its use to integrate diagnostics, capability assessment, prognostics and maintenance applications with production and control applications.

It does not cover the integration of other application aspects, such as security.

Part 2: Descriptions and definitions of application domain matrix elements (Identical adoption ISO 18435-2:2012)

This standard defines the structures and templates for:

− an application interaction matrix element;
− an application domain matrix element.

It also defines the relationship between these types of elements.

Part 3: Applications integration description method (Identical adoption ISO 18435-3:2015)

This standard defines the profiling methodology to use the interoperability templates of Part 2. These profiling methods describe the construction and the use of application domain matrix elements (ADMEs), application interaction matrix elements (AIMEs), and an open technical dictionary (OTD) to support the information exchange.

In particular, Part 3 gives guidance related to profiling the information exchange between two applications by establishing the context, conveyance and contents defined in Part 2.

17. **Automation systems and integration − Key performance indicators (KPIs) for manufacturing operations management**

The following two parts of this standard specify an industry-neutral framework for defining, composing, exchanging, and using key performance indicators (KPIs) for manufacturing operations management (MOM), as defined in Part 1 for batch, continuous and discrete industries.

Part 1: Overview, concepts and terminology (Identical adoption ISO 22400-1:2014)

This standard:

− provides an overview of what a KPI is;
− presents concepts of relevance for working with KPIs including criteria for constructing KPIs;
− specifies terminology related to KPIs; and
− describes how a KPI can be used.

Part 2: Definitions and descriptions (Identical adoption ISO 22400-2:2014)

This standard specifies a selected number of KPIs in current practice. The KPIs are presented by means of their formula and corresponding elements, their time behaviour, their unit/dimension and other characteristics. It also indicates the user group where the KPIs are used, and the production methodology to which they correspond.

With reference to equipment, the KPIs in Part 2 relate to work units, as specified in SS IEC 62264.

Potential users include system integrators, testing, inspection and certification bodies, professional institutions, companies, institutes of higher learning, training providers and government agencies.

Copies of the drafts and standards are available at:

Viewing from Singapore Standards eShop
Login to Singapore Standards eShop at: www.singaporestandardseshop.sg
[Login ► Our Products ► Singapore Standards ► Drafts ► Select document]

Viewing Singapore Standards and ISO Standards from National Libraries
All public libraries' multimedia stations and on personal internet/mobile devices (e.g. mobile phones, notebooks, tablets) at all public libraries via NLB eDatabases "Singapore and ISO Standards Collection" (refer to www.nlb.gov.sg/VisitUs.aspx for address and viewing hours)

NOTE – The viewing period of the drafts and standards will expire on the closing of the 2-month public comment period and will no longer be available after this date.

B) Notification of Work Item Proposals

B.1 Proposed New Work Items

Manufacturing

1. **OPC unified architecture**

   Part 1: Overview and concepts (Identical adoption IEC/TR 62541-1:2016)

   This Technical Reference presents the concepts and overview of the OPC UA.

   Part 2: Security model (Identical adoption IEC/TR 62541-2:2016)

   This Technical Reference describes the OPC UA security model.

2. **Industrial-process measurement, control and automation – Digital factory framework – Part 1: General principles** (Identical adoption of IEC/TS 62832-1:2016)

   This Technical Reference defines the general principles of the Digital Factory framework (DF framework), which is a set of model elements (DF reference model) and rules for modelling production systems.

3. **Energy efficiency through automation systems** (Identical adoption of IEC/TR 62837:2013)

   This Technical Reference provides to the technical committees a framework for the development and adaptation of documents in order to improve energy efficiency in manufacturing, process control and industrial facility management.

4. **Automation systems and integration – Key performance indicators (KPIs) for manufacturing operations management – Part 10: Operational sequence description of data acquisition – Part 10: Operational sequence description of data acquisition** (Identical adoption of ISO/TR 22400-10:2018)

   This Technical Reference (TR) contains descriptions for the practical use for applying formulae as specified in SS ISO 22400-2 for key performance indicators for production control and monitoring.

   This TR is intended to be applied in conjunction with the content of SS ISO 22400-2.

   Potential users include system integrators, testing, inspection and certification bodies, professional institutions, companies, institutes of higher learning, training providers and government agencies.

5. **Guidelines for manufacturing process selection involving metals**

This Technical Reference provides guidelines for process selection between conventional manufacturing and additive manufacturing (AM) involving metals.

It helps to determine the suitability of AM as a manufacturing process for an existing design or new design. In addition, benefits and limitation of manufacturing processes and factors of process selection are illustrated to support the decision-making of the process.

This TR does not include process-specific guidelines and specific material data/design solutions.

Potential users include AM design engineers, manufacturing engineers, maintenance engineers, industry associations, research institutions and government agencies.

B.2 **Review of Singapore Standard**

Building and Construction

1. **Code of practice for the design and management of aquatic facilities** (SS 556 : 2010)

This standard specifies the general requirements for the design and construction, installation of equipment, operation, management and maintenance of aquatic facilities in Singapore. It is intended to ensure the safety, well-being and recreational benefits of facility users, as well as personnel who may become involved in the aspects of design, construction, operation, management and maintenance of the aquatic facilities.

The standard is reviewed with the intention to update it.

Users of the standard may include architects, professional engineers, consultants, contractors, developers, testing or accreditation bodies and relevant government agencies.

Submit Comments

Frequently asked questions about public comment on Singapore Standards:

1.   What is the public comment on Singapore Standards?

Singapore Standards are established based on an open system which is also in accordance with the requirements of the World Trade Organisation. These documents are issued as part of a consultation process before any standards are introduced or reviewed.   The public comment period is an important stage in the development of Singapore Standards. This mechanism helps industry, companies and other stakeholders to be aware of forthcoming changes to Singapore Standards and provides them with an opportunity to influence, before their publication, the standards that have been developed by their industry and for their industry.

2.   How does public comment on Singapore Standards benefit me?

This mechanism:

- ensures that your views are considered and gives you the opportunity to influence the content of the standards in your area of expertise and in your industry;
- enables you to be familiar with the content of the standards before they are published and you stand to gain a competitive advantage with this prior knowledge of the standards.

3.   Why do I have to pay for the standards which are proposed for review or withdrawal?

These standards are available for *free viewing* at Toppan Leefung Pte Ltd and all public libraries. However, the normal price of the standard will be charged for those who wish to purchase a copy. At the stage where we propose to review or withdraw the standards, the standards are still current and in use. We seek comments for these standards so as to:

- provide an opportunity for the industry to provide inputs for the review of the standard that would make the standard suitable for the industry's use,
- provide feedback on the continued need for the standard so that it will not be withdrawn,

4.   What happens after I have submitted my comments?

The comments will be channelled to the relevant standards committee for consideration and you will be informed of the outcome of the committee's decision and you may be invited to meet the committee if clarification is required on your feedback.

5.   Can I view drafts after the public comment period?

Drafts will not be available after the public comment period.

6.   How do I request for the development of a new standard?

You can propose the development of a new standard [here].