SPRING SINGAPORE CALLS FOR PUBLIC COMMENTS – 11 AUGUST 2017

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

A) Notification of Draft Singapore Standards for Publications

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

(I) Biomedical and Health – Biological evaluation of medical devices, risk management to medical devices, clinical investigation of medical devices, medical electrical equipment, medical laboratories, point-of-care testing

(II) Electrical and Electronic – Electrical installations, escalators and moving walks

(III) Energy – Rotating electrical machines, industrial furnaces and associated processing equipment, compressed air, pump systems, fans

(IV) Quality and Safety – Playground equipment, workplace noise control, gas cylinders, graphical symbols for fluid power systems and components

For more information on viewing the documents, click here.

Closing date for comments: 12 October 2017.

To provide comments, please write to: kay_chua@spring.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:

(I) Manufacturing – Robots and robotic devices, network and system security, fine bubble technology

(II) Quality and Safety – Gas cylinders

The NWIs are work in progress and the drafts are not available at this juncture.

Closing date for comments: 12 September 2017.
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 standards, please write to: standards@spring.gov.sg.

### B.2 Proposal for the Review of Singapore Standards (SS)

Published Singapore Standards are reviewed to determine if they should be updated, confirmed or withdrawn (if they no longer serve the industry's needs) or classified as mature standards (no foreseeable changes; to be reviewed only upon request).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

(I) Building and Construction – internal plastering, clay roofing tiles and fittings

(II) Electrical and Electronic – fuse links, portable cable reels, 2-pin socket-outlets, antenna systems

The reviews are work in progress and new versions/drafts are not available at this juncture. Users can refer to the current SS to provide feedback. For more information on viewing and purchase of current SS, click here.

Closing date for comments: **12 September 2017**.

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 provide comments or to join in the development of standards, please write to: kay_chua@spring.gov.sg.

### A) Notification of draft Singapore Standards

(I) **Biomedical and Health**

New

1. Biological evaluation of medical devices


This standard specifies strategies for risk estimation, selection of hazard identification tests and risk management, with respect to the possibility of the following potentially irreversible biological effects arising as a result of exposure to medical devices genotoxicity, carcinogenicity, and reproductive and developmental toxicity.


This standard describes test methods to assess the in vitro cytotoxicity of medical devices. These methods specify the incubation of cultured cells in contact with a device and/or extracts of a device either directly or through diffusion. These methods are designed to determine the biological response of mammalian cells in vitro using appropriate biological parameters.

*Part 10: Tests for irritation and skin sensitisation* (Identical adoption of ISO 10993-10:2010)

This standard describes the procedure for the assessment of medical devices and their constituent materials with regard to their potential to produce irritation and skin sensitisation. It includes:
— pre-test considerations for irritation, including in silico and in vitro methods for dermal exposure;
— details of in vivo (irritation and sensitisation) test procedures;
— key factors for the interpretation of the results.


This standard specifies requirements and gives guidance on the procedures to be followed in the preparation of samples and the selection of reference materials for medical device testing in biological systems in accordance with one or more parts of ISO 10993. Specifically, this part of ISO 10993 addresses the following:

— test sample selection;
— selection of representative portions from a device;
— test sample preparation;
— experimental controls;
— selection of, and requirements, for reference materials;
— preparation of extracts.

This standard is not applicable to live cells, but can be relevant to the material or device components of combination products containing live cells.


This standard specifies a process for a manufacturer to identify the hazards associated with medical devices, including in vitro diagnostic (IVD) medical devices, to estimate and evaluate the associated risks, to control these risks, and to monitor the effectiveness of the controls. The requirements are applicable to all stages of the life-cycle of a medical device.


This standard addresses good clinical practice for the design, conduct, recording and reporting of clinical investigations carried out in human subjects to assess the safety or performance of medical devices for regulatory purposes.

This standard specifies general requirements intended to protect the rights, safety and well-being of human subjects, ensure the scientific conduct of the clinical investigation and the credibility of the results, define the responsibilities of the sponsor and principal investigator, and assist sponsors, investigators, ethics committees, regulatory authorities and other bodies involved in the conformity assessment of medical devices.

This standard does not apply to in vitro diagnostic medical devices.

Potential users of the above standards on medical devices may include companies expanding into medical technology, medical technology start-ups, government linked research institutes and institutes for higher learning.

4. Medical electrical equipment

*Part 2-16 : Particular requirements for basic safety and essential performance of haemodialysis, haemodiafiltration and haemofiltration equipment* (Identical adoption of the upcoming IEC 60601-2-16)

This standard specifies the minimum safety requirements for haemodialysis and peritoneal dialysis equipment. The equipment is intended to be used either by medical staff or for use by the patient or other trained personnel under medical supervision.
*Part 2-39 : Particular requirements for basic safety and essential performance of peritoneal dialysis equipment* (Identical adoption of the upcoming IEC 60601-2-39)

This standard includes all medical electrical equipment that is intended to deliver a haemodialysis, haemodiafiltration, haemofiltration or peritoneal dialysis treatment to a patient, independent of the treatment duration and location.

Potential users of the standards on medical electrical equipment may include dialysis device developers, manufacturers, research organisations and conformity assessment bodies.

5. **Medical laboratories – Requirements for quality and competence** (Identical adoption of ISO 15189:2012)

This standard specifies the requirements for quality and competence in medical laboratories. These requirements may be used by medical laboratories in developing their quality management systems and assessing their own competence. This standard may also be used for confirming or recognising the competence of medical laboratories by laboratory customers, regulating authorities and accreditation bodies.

6. **Point-of-care testing (POCT) – Requirements for quality and competence** (Identical adoption of ISO 22870:2016)

This standard gives specific requirements applicable to point-of-care testing (POCT) and is intended to be used in conjunction with ISO 15189. The requirements of this standard apply when POCT is carried out in a hospital, clinic and by a healthcare organisation providing ambulatory care. This standard may be applied to transcutaneous measurements, the analysis of expired air, and in vivo monitoring of physiological parameters.

This standard is not applicable to patients performing self-testing.

Potential users of the standards on medical laboratories and POCT are clinical laboratories.

**(II) Electrical and Electronic**

Revision

7. **Code of practice for electrical installations** (Revision of SS CP 5 : 1998) (Modified adoption of BS 7671 : 2008 incorporating Amendments 1, 2 and 3)

This standard has been drawn up to ensure safety, especially from electric shock and fire in the use of electricity, and relates principally to the design, selection, erection, inspection and testing of electrical installations.

This standard is not intended to replace detailed specifications, to instruct untrained persons or to provide for every circumstance. For installations of a special or complex character, e.g. measures against electromagnetic disturbances, the advice of a suitably qualified professional engineer and consultation with the relevant authorities will be necessary.

Potential users of the standard may include professional engineers, licensed electrical workers, contractors, manufacturers, suppliers, consultants, testing laboratories, academic institutions, regulators and government agencies.
Amendment

8. Amendment No. 1 to Code of practice for design, installation and maintenance of escalators and moving walks (SS 626 : 2017)

This amendment includes a new clause on "step upthrust device" to provide better safety for prams. The amendment also reduces the dimension of the gap from 120 mm to 100 mm between the escalator balustrade and the building barricade to be in line with the building code. This will enhance the safety of the installation of escalators.

(Click here to download the amendment.)

(iii) Energy

New

9. Rotating electrical machines


This standard is applicable to all rotating electrical machines except those covered by other IEC standards, for example, IEC 60349. Machines within the scope of this document may also be subject to superseding, modifying or additional requirements in other standards, for example, IEC 60079 and IEC 60092.

*Part 30-1: Efficiency classes of line operated AC motors* (Identical adoption of IEC 60034-30-1:2014)

The standard specifies efficiency classes for single-speed electric motors that are rated according to IEC 60034-1 or IEC 60079-0 for operation on a sinusoidal voltage supply. It establishes a set of limit efficiency values based on frequency, number of poles and motor power. No distinction is made between motor technologies, supply voltage or motors with increased insulation designed specifically for converter operation even though these motor technologies may not all be capable of reaching the higher efficiency classes. This makes different motor technologies fully comparable with respect to their energy efficiency potential.

*Part 31 : Selection of energy-efficient motors including variable speed applications – Application guide* (Identical adoption of IEC TS 60034-31:2010)

The standard provides a guideline of technical aspects for the application of energy-efficient, three-phase, electric motors. It not only applies to motor manufacturers, original equipment manufacturers, end users, regulators and legislators but to all other interested parties. It is applicable to all electrical machines covered by IEC 60034-30. Most of the information however is also relevant for cage-induction machines with output powers exceeding 375 kW.


The standard specifies a general methodology for measuring energy balance and calculating the efficiency of the process involving industrial furnaces and associated processing equipment as designed by furnace manufacturers. This general methodology includes measurement methods, calculations (general calculation) and an energy balance evaluation report. This standard is not applicable to any efficiencies related to the process itself outside of industrial furnaces and associated processing equipment.


This standard sets requirements for conducting and reporting the results of a compressed air system assessment that considers the entire system, from energy inputs to the work performed as the result of these inputs.
It considers compressed air systems as three functional subsystems: supply which includes the conversion of primary energy resource to compressed air energy; transmission which includes movement of compressed air energy from where it is generated to where it is used; demand which includes the total of all compressed air consumers, including productive end-use applications and various forms of compressed air waste.

The standard sets requirements for analysing the data from the assessment, reporting and documentation of assessment findings, and identification of an estimate of energy saving resulting from the assessment process. It also identifies the roles and responsibilities of those involved in the assessment activity.


The standard sets the requirements for conducting and reporting the results of a pumping system energy assessment that considers the entire pumping system, from energy inputs to the work performed as the result of these inputs. The objective of a pumping system energy assessment is to determine the current energy consumption of an existing system and identify ways to improve system efficiency. The standard is designed to be applied, to open and closed loop pumping systems typically used at industrial, institutional, commercial, and municipal facilities, when requested. It focuses on assessing electrically-driven pumping systems, which are dominant in most facilities, but is applicable with other types of drivers, such as steam turbines and engines, and drives such as belt.


The standard specifies requirements for classification of fan efficiency for all fan types driven by motors with an electrical input power range from 0.125 kW to 500 kW. It is applicable to bare shaft and driven fans, as well as fans integrated into products. Fans integrated into products are measured as stand-alone fans.

It is not applicable to fans for smoke and emergency smoke extraction; fans for industrial processes; fans for automotive application, trains, planes, etc.; fans for potentially explosive atmospheres; box fans, powered roof ventilators and air curtains or jet fans for use in car parks and tunnel ventilation.

The above standards on energy efficiency and energy assessment are applicable to companies that wish to install more energy-efficient equipment. They will also apply to energy service companies (ESCOs) and energy managers that will need to use the standards to perform energy assessments to enhance energy efficiency for industrial premises.

**Quality and Safety**

Revision


This standard provides information on workplace noise risk assessment, monitoring, and controls. This standard is applicable to all workplaces where persons are likely to be exposed to excessive noise.

This standard does not cover community noise and environmental noise which include noise from construction, public entertainment and transportation.

Users of the standard may include manufacturers and suppliers, acoustics consultants, professional engineers, safety officers, academia, industry associations, testing laboratories and relevant government agencies.

*(NOTE: Instead of the prefix CP, the revised edition of CP 99 will carry the prefix ‘SS’, i.e. SS XXX : 2017, XXX representing the number that will be assigned when the standard is approved.)*

This standard gives the terminology intended to be used under regulations for the transport of dangerous goods that are based on the UN Model Regulations. Variations from the terminology are permissible to comply with other regulations such as for stationary and automotive applications.

Users of the standard may include manufacturers and suppliers, industry associations, academia and relevant government agencies.


This standard provides safety and performance standards for various types of public playground equipment. Its purpose is to reduce life-threatening and debilitating injuries.

This standard does not include home playground equipment, toys, amusement rides, sports equipment, fitness equipment intended for users over the age of 12, public use play equipment for children 6 to 24 months, and soft contained play equipment.

Products or materials (site furnishings) that are installed outside the equipment use zone, such as benches, tables, independent shade structures, and borders used to contain protective surfacing, are not considered playground equipment and are not included in this standard.

The revision incorporates hygiene and cleanliness and aligns with the current ASTM F1487.

Users of the standard may include manufacturers and suppliers, contractors, consultants, designers, academia, industry associations, testing laboratories, maintenance agencies, town councils and relevant government agencies.

**Withdrawal**

17. **Specification for fluid power systems and components – Graphic symbols and circuit diagrams – Graphic symbols** (SS 251 :1996)

This standard is recommended for withdrawal as it is no longer used by the industry.

Users can refer directly to the international standard, ISO 1219-1 – “Fluid power systems and components – Graphical symbols and circuit diagrams – Part 1 : Graphical symbols for conventional use and data-processing applications”.

Copies of drafts and standards are available at:

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Login to Singapore Standards eShop at: [http://www.singaporestandardseshop.sg](http://www.singaporestandardseshop.sg)

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Viewing hours:
Mon to Sun: 10 am to 8.30 pm.
Email ref@nlb.gov.sg to schedule an appointment to view the standards.
NOTE – The viewing period of the drafts will expire on the closing of the 2-month public comments. Drafts will no longer be available after this date.

B) Notification of New Work Item Proposals

B.1 Proposal for New Work Items

(I) Manufacturing

1. Robots and robotic devices – Vocabulary (Identical adoption of ISO 8373:2012)

This standard defines terms used in relation with robots and robotic devices operating in both industrial and non-industrial environments.

2. Robots and robotic devices – Coordinate systems and motion nomenclatures (Identical adoption of ISO 9787:2013)

This standard defines and specifies robot coordinate systems. It also provides nomenclature, including notations, for the basic robot motions. It is intended to aid in robot alignment, testing, and programming.


This standard defines terms relating to mobile robots that travel on a solid surface and that operate in both industrial robot and service robot applications. It defines terms used for describing mobility, locomotion and other topics relating to the navigation of mobile robots.


This standard describes methods for specifying and evaluating the locomotion performance of wheeled robots in indoor environments.


This standard specifies requirements and guidelines for the inherently safe design, protective measures, and information for use of personal care robots, in particular mobile servant robots, physical assistant robots and person carrier robots.

These robots typically perform tasks to improve the quality of life of intended users. This standard describes hazards associated with the use of these robots, and provides requirements to eliminate, or reduce, the risks associated with these hazards to an acceptable level. It covers human-robot physical contact applications.

Potential users of the above standards on robots include robot manufacturers, suppliers and integrators. End users and stakeholders from industrial environments (e.g. factories), service sectors (e.g. restaurants, shops and hotels), and healthcare environments (e.g. hospitals, aged care homes and pharmacies) will be interested in items 1 and 2, items 3 and 4, and item 5, respectively.

6. Industrial communication networks – Network and system security

Part 1-1: Terminology, concepts and models (Identical adoption of IEC TS 62443-1-1:2009)

This standard defines the terminology, concepts and models for industrial automation and control systems (IACS) security.
Part 2-1: Establishing an industrial automation and control system security program

This standard defines the elements necessary to establish a cyber-security management system (CSMS) for industrial automation and control systems (IACS) and provides guidance on how to develop those elements. This standard uses the broad definition and scope of what constitutes an IACS described in IEC TS 62443-1-1. The elements of a CSMS described in this standard are mostly policy, procedure, practice and personnel related, describing what shall or should be included in the final CSMS for the organisation.

Part 3-1: Security technologies for industrial automation and control systems

This standard provides a current assessment of various cyber-security tools, mitigation countermeasures, and technologies that may effectively apply to the modern electronically based IACSs regulating and monitoring numerous industries and critical infrastructures. It describes several categories of control system-centric cyber-security technologies, the types of products available in those categories, the pros and cons of using those products in the automated IACS environments, relative to the expected threats and known cyber vulnerabilities, and, most importantly, the preliminary recommendations and guidance for using these cyber-security technology products and/or countermeasures.

Part 3-3: System security requirements and security levels

This standard provides detailed technical control system requirements (SRs) associated with the seven foundational requirements (FRs) described in the proposed SS IEC 62443-1-1, including defining the requirements for control system capability security levels. These requirements would be used by various members of the industrial automation and control system (IACS) community along with the defined zones and conduits for the system under consideration (SuC) while developing the appropriate control system target for a specific asset.

Potential users of the standards on network and system security include manufacturers, suppliers, government organisations involved with, or affected by, control system cyber-security, control system practitioners and security practitioners.

7. Fine bubble technology – General principles for usage and measurement of fine bubbles
   – Part 1: Terminology

This standard specifies terminology and definitions used in the area of fine bubble technology. Terminology in this standard covers general principles, measurements, and individual applications of fine bubble technology.

Potential users include those that deal with cleaning, environmental improvement, food and drinks, aeration systems, medicine, water and waste water treatment, as well as high technological farmers of agriculture and aquaculture.

(II) Quality and Safety

8. Filling, inspection, testing and maintenance of gas cylinders for the storage and transport of compressed gases

   Part 1 : Seamless steel and aluminium alloy (excluding dissolved acetylene) – Inspection at the time of filling, periodic maintenance and testing

This standard specifies the minimum requirements for the filling, inspection, testing and maintenance of transportable seamless metal gas cylinders of 0.5 to 150 litre water capacity. It does not apply to welded cylinders, composite cylinders or to dissolved acetylene cylinders.

This standard specifies minimum requirements for the filling conditions and filling inspection of acetylene cylinders. This standard is not applicable to an assembly of cylinders connected by a manifold, e.g. bundles.

Part 3: Acetylene cylinders – Periodic inspection and maintenance

This standard specifies the minimum requirements for the inspection and maintenance before filling, filling and periodic inspection and maintenance of transportable dissolved acetylene cylinders. It applies to cylinders with nominal water capacity up to 150 litres.

These standards on gas cylinders resulted from the review of CP 12 – “Code of practice for the filling, inspection, testing and maintenance of containers for the storage and transport of compressed gases”

Potential users include manufacturers and suppliers, industry associations, academia and relevant government agencies.

Copies of the drafts are not available at this juncture.

B.2 Review of Singapore Standards

The intention of the review of the following standards is to classify them as mature standards as there are no foreseeable changes in them. Hence, they will not be reviewed until a request is put forth to do so.

(I) Building and Construction


This standard gives recommendations for internal plastering on all types of background for use under normal conditions including ceiling and walls. It contains guidance on materials, types of background, preparation of the surface to be plastered, choice of a suitable plastering system, methods of application and maintenance.


This standard establishes basic ground rules for the installation of clay roofing tiles and other related components of the roofing system and for their reasonable performance under normal applications. The ultimate performance of the total roofing system with clay roofing tiles will however still rely on the integrity of design and detailing, which is left very much to the designer, in order not to be too restrictive in creative applications.

3. Specification for clay roofing tiles and fittings (SS 70 : 2001)

This standard specifies the minimum requirements for glazed and unglazed clay roofing tiles which include the shingle (plain), side-locking and head-and-side locking tiles. It also covers their associated accessory tiles.

Users of the above standards (items 1 to 3) include consultants, contractors, developers, professional engineers, suppliers, manufacturers, tertiary institutions, testing and accreditation bodies, government agencies and regulatory bodies.
(II) Electrical and Electronic

4. Specification for general purpose fuse links for domestic and similar purposes (primarily for use in plugs) [SS 167 : 1977 (2012)]

This standard specifies dimensions and performance requirements for general purpose cartridge fuse links of current ratings not exceeding 13 A for domestic and similar purposes on declared supply voltages not exceeding 250 V at a nominal frequency of 50 Hz.


This standard applies to portable cable reels for alternating current (a.c.) only, having a rated voltage not exceeding 250 V, rated current not exceeding 13 A and provided with a non-detachable flexible cable or cord, intended for domestic and similar purposes, either indoor or outdoor. It does not apply to cable reeling devices incorporated in appliances. It also does not apply to portable switchgear with means for winding the cable or cord for use in building and similar sites.

6. Specification for portable 2-pin socket-outlets for class II equipment for household and similar purposes (SS 488 : 2001)

This standard applies to portable 2-pin socket-outlets for a.c. only, without earthing contacts, with a rated voltage of 250 V and a rated current not exceeding 13 A, intended for household and similar purposes. It is an assembly consisting of a non-detachable 2-core flexible cable fitted with a 13 A plug complying with SS 145 : Part 1 and having a single or multiple 2-pin shuttered socket outlets. The 2-pin socket-outlet shall accept flat, non-rewirable two pole plug rated 2.5 A 250 V with cord complying to EN 50075. The portable socket-outlet to be of the non-rewirable type, is so constructed that it forms a complete unit with the flexible cable which shall comply with SS 358 : Part 5 and having minimum cross-sectional area of 1.25 mm².

Users of the above standards (items 4 to 6) include professional engineers, licensed electrical workers, contractors, manufacturers, suppliers, regulators, government agencies and households.

7. Code of practice for the installation of master antenna television systems for the reception of VHF and UHF sound and television broadcasting transmission operating between 5 MHz and 824 MHz [CP 39 : 1994 (2012)]

This standard covers recommendations for erection, cabling, performance and safety requirements of the master antennae television systems (MATV) for the reception of VHF and UHF sound and television broadcast transmission operating between 5 MHz and 824 MHz.


This specification gives the requirements of 75 ohm output impedance outlet units for master and community television antenna systems which receive and distribute signals within the frequency range of 40 MHz to 960 MHz according to Consultative Committee for International Radio (CCIR) system.

Users of the standards on antennae systems include architects, professional engineers, consultants, contractors, manufacturers, suppliers and government agencies.
Frequently asked questions about public comment on Singapore Standards:

1. **What is public comment?**

   Singapore Standards are established based on an open system which is also in accordance with the World Trade Organisation requirements. These documents are issued as part of a consultation process before any standards are introduced or reviewed. This important stage in the development of Singapore Standards is the Public Comment period. This mechanism helps industry, companies and other stakeholders be aware of forthcoming changes to Singapore Standards and provide 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 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 the National Library Board at the addresses given above. 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 a new standard?**

   You can inform us of your standardisation needs by completing the Proposal Form at [Apply for a Standard](http://www.spring.gov.sg).