

Submit Comments

SPRING SINGAPORE CALLS FOR PUBLIC COMMENTS – 6 OCTOBER 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 publication 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 document:

- (I) Biomedical and Health – [biological evaluation of medical devices](#)
- (II) Building – [water services](#), [geotechnical design](#)
- (III) Electrical and Electronic – [PVC insulated cables](#), [emergency lighting and power supply systems in building](#)
- (IV) Environment and Resources – [environmental labels and declarations](#), [environmental management \(life cycle assessment, water footprint\)](#), [greenhouse gases](#)
- (V) Food – [food waste management](#), [organic primary produce](#)
- (VI) Information Technology – [cloud outage incident response](#)
- (VII) Manufacturing / Marine and Offshore – [robots and robotic devices](#), [jack-ups](#)
- (VIII) Quality and Safety – [scaffolds](#), [diving at work](#), [containers for the storage and transport of compressed gases](#)

For more information on viewing the documents, [click here](#).

Closing date for comments: **7 December 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) Building and Construction – [facility design guidelines for polyclinics](#)

- (II) Chemical – [graphene flakes, engineered nanoparticles in workplaces](#)

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

Closing date for comments: **7 November 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) Chemical – [hazard communication for hazardous chemicals and dangerous goods, fineness and marking of articles of precious metals, paints and varnishes, bunker mass flow metering](#)

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: **7 November 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

***Part 1: Evaluation and testing within a risk management process** (Identical adoption of the upcoming ISO 10993-1)

This standard describes:

- the general principles governing the biological evaluation of medical devices within a risk management process;
- the general categorisation of devices based on the nature and duration of their contact with the body;
- the evaluation of existing relevant data from all sources;
- the identification of gaps in the available data set on the basis of a risk analysis;
- the identification of additional data sets necessary to analyse the biological safety of the medical device;
- the assessment of the biological safety of the medical device.

This standard applies to evaluation of materials and devices that are expected to have direct or indirect contact with the patient's body during intended use. In addition, this standard applies to medical devices that are expected to have direct or indirect contact with the clinician's body, if the device is intended to protect the clinician (e.g., surgical gloves, masks and others). This standard is applicable to biological evaluation of all types of medical devices including active, non-active, implantable and non-implantable medical devices.

NOTE – This standard is currently based on the Draft International Standards (DIS) but the final adoption will be based on the published ISO standard.

***Part 4: Selection of tests for interactions with blood** (Identical adoption of ISO 10993-4:2017)

This standard specifies general requirements for evaluating the interactions of medical devices with blood. It describes:

- a classification of medical devices that are intended for use in contact with blood, based on the intended use and duration of contact as defined in ISO 10993-1.
- the fundamental principles governing the evaluation of the interaction of devices with blood.
- the rationale for structured selection of tests according to specific categories, together with the principles and scientific basis of these tests.

Detailed requirements for testing cannot be specified because of limitations in the knowledge and precision of tests for evaluating interactions of devices with blood. This standard describes biological evaluation in general terms and may not necessarily provide sufficient guidance for test methods for a specific device.

***Part 6: Tests for local effects after implantation** (Identical adoption of ISO 10993-6:2016)

This standard specifies test methods for the assessment of the local effects after implantation of biomaterials intended for use in medical devices. It applies to materials that are:

- solid and non-absorbable;
- non-solid, such as porous materials, liquids, gels, pastes and particulates; and
- degradable and/or absorbable, which may be solid or non-solid.

The local effects are evaluated by a comparison of the tissue response caused by a test sample to that caused by control materials used in medical devices whose clinical acceptability and biocompatibility characteristics have been established. The objective of the test methods is to characterise the history and evolution of the tissue response after implantation of a medical device / biomaterial including final integration or absorption/degradation of the material. In particular for degradable/absorbable materials, the degradation characteristics of the material and the resulting tissue response should be determined.

This standard does not deal with systemic toxicity, carcinogenicity, teratogenicity or mutagenicity.

***Part 11: Tests for systemic toxicity** (Identical adoption of ISO 10993-11:2017)

This standard specifies requirements and gives guidance on procedures to be followed in the evaluation of the potential for medical device materials to cause adverse systemic reactions.

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

(II) **Building and Construction**

Revised

2. ***Code of practice for water services** (Revision of SS CP 48 : 2005)

This standard deals with services for the supply of potable water to all residential, commercial and industrial buildings/premises. The scope of the standard extends from the Authority's water supply to the point where the water is drawn for use, including storage. It does not cover all aspects of services for the supply of water for fire fighting.

This revision is to bring the standard up-to-date with the latest relevant overseas standards, in particular, the alignment of testing methods with international practices. Water sampling test for leaching of heavy metals has been incorporated as an annex to this revised standard.

Users of the standard include professional engineers, architects and licensed water services plumbers.

(NOTE: Instead of the prefix CP, the revised edition of CP 48 will carry the prefix 'SS', i.e. SS XXX : 2017, XXX representing the number that will be assigned when the standard is approved.)

Confirmation with Amendment

3. **Amendment No. 1 to Eurocode 7 – Geotechnical design – Part 1: General rules** (SS EN 1997-1:2010)

Amendment No. 1 to Singapore National Annex to SS EN 1997-1 : 2010 (NA to SS EN 1997-1:2010)

SS EN 1997-1 and its NA will be confirmed with amendments. The amendments are issued to replace "Anchorages" in Section 8 to "Anchors. This Section requires designers to show that anchors will perform satisfactorily in service conditions and will also prevent failure in the supported structure (ultimate limit states) in more onerous conditions than those checked historically, defined by partial factors. These requirements are to be demonstrated by testing the anchors, the code taking no account of calculated anchor capacities.

[\(Click here](#) to download Amendment No. 1 to SS EN 1997-1:2010)

[\(Click here](#) to download Amendment No. 1 to NA to SS EN 1997-1:2010)

(III) **Electrical and Electronic**

Confirmation with Amendment

4. **Amendment No. 1 to Specification for polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V – Part 1: General requirements** (SS 358 : Part 1 : 2011)

This standard will be confirmed with Amendment No. 1. The Amendment is issued to update the colour code of the PVC cables to widen the range of water temperature when performing tests, add diagrams to illustrate the markings on cables/insulation/tape and to align with other local requirements.

SS 358 : Part 2 will be confirmed without amendments whilst Part 3 and Part 5 are still currently under review.

[\(Click here](#) to download the amendment)

5. **Amendment No. 2 to Code of practice for the design, installation and maintenance of emergency lighting and power supply systems in buildings – Part 2 : Installation requirements and maintenance procedures** (SS 563 : Part 2 : 2010)

This standard will be confirmed with Amendment No. 2. The Amendment is issued to update the reference standards, rectify existing typographical errors and include other battery types in addition to lead-acid and nickel-cadmium batteries for emergency power supply.

([Click here](#) to download the amendment.)

(IV) **Environment and Resources**

New

6. *Environmental labels and declarations – General principles (Identical adoption of ISO 14020:2000)

This standard establishes guiding principles for the development and use of environmental labels and declarations. It is intended that other applicable standards in the ISO 14020 series be used in conjunction with this standard. This standard is not intended for use as a specification for certification and registration purposes.

7. *Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling) (Identical adoption of ISO 14021:2016)

This standard specifies requirements for self-declared environmental claims, including statements, symbols and graphics, regarding products. It further describes selected terms commonly used in environmental claims and gives qualifications for their use. This standard also describes a general evaluation and verification methodology for self-declared environmental claims and specific evaluation and verification methods for the selected claims in this standard.

8. *Environmental labels and declarations – Type III environmental declarations – Principles and procedures (Identical adoption of ISO 14025:2006)

This standard establishes the principles and specifies the procedures for developing Type III environmental declaration programmes and Type III environmental declarations. It specifically establishes the use of the ISO 14040 series of standards in the development of Type III environmental declaration programmes and Type III environmental declarations.

Type III environmental declarations as described in this standard are primarily intended for use in business-to-business communication, but their use in business-to-consumer communication under certain conditions is not precluded.

This standard does not include sector-specific provisions, which may be dealt with in other ISO documents. It is intended that sector-specific provisions in other ISO documents related to Type III environmental declarations be based on and use the principles and procedures of this standard.

9. *Environmental management – Life cycle assessment – Principles and framework (Identical adoption of ISO 14040:2006)

This standard describes the principles and framework for life cycle assessment (LCA) including:

- the goal and scope definition of the LCA;
- the life cycle inventory analysis (LCI) phase;
- the life cycle impact assessment (LCIA) phase;
- the life cycle interpretation phase;
- reporting and critical review of the LCA;
- limitations of the LCA;
- relationship between the LCA phases; and
- conditions for use of value choices and optional elements.

This standard covers LCA studies and LCI studies. It does not describe the LCA technique in detail, nor does it specify methodologies for the individual phases of the LCA.

The intended application of LCA or LCI results is considered during the goal and scope definition, but the application itself is outside the scope of this standard.

This standard is not intended for contractual or regulatory purposes or registration and certification.

10. *Environmental management – Water footprint – Principles, requirements and guidelines
(Identical adoption of ISO 14046:2014)

This standard specifies principles, requirements and guidelines related to water footprint assessment of products, processes and organisations based on life cycle assessment (LCA).

This standard provides principles, requirements and guidelines for conducting and reporting a water footprint assessment as a stand-alone assessment, or as part of a more comprehensive environmental assessment.

Only air and soil emissions that impact water quality are included in the assessment, and not all air and soil emissions are included.

The result of a water footprint assessment is a single value or a profile of impact indicator results.

Whereas reporting is within the scope of this standard, communication of water footprint results, for example in the form of labels or declarations, is outside the scope of this standard.

11. *Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition
(Identical adoption of ISO 14065:2013)

This standard specifies principles and requirements for bodies that undertake validation or verification of greenhouse gas (GHG) assertions.

It is GHG programme neutral. If a GHG programme is applicable, the requirements of that GHG programme are additional to the requirements of this standard.

Potential users of the above environment standards may include certification bodies, inspection bodies, professional bodies, associations and government agencies.

(V) Food

New

12. *Guidelines for food waste management for food processing/manufacturing establishments

This standard sets out recommendations and guidelines for proper food waste management of various stages in the food value chain starting from receiving of raw materials, processing, storage, packaging, transportation/ distribution to returned foods. It does not include incoming raw materials and recalled products.

The objective of this standard is to help food processing/manufacturing establishments develop a food waste management plan, with the goal of minimising food waste generated.

Potential users of the standard may include food processing/manufacturing establishments such as slaughter houses, central kitchens and storage providers.

13. ***Specification for organic primary produce**

This standard provides requirements for primary produce such as grains, mushrooms, fresh vegetables, fresh herbs and fresh fruits. It covers processes such as production, post-harvest practices, import, packing and re-packing, storage, transport, and labelling of organic primary produce. Livestock, fish and processed foods are excluded.

This standard also includes the principles of organic agriculture (i.e. health, ecology, fairness, and care) for traditional organic farming, peri-urban and urban organic farming, breaking bulk and repacking of organic produce. This standard covers only soil-based cultivation, substrate-based cultivation, and aquaponics. Other soilless and non-substrate-based cultivation methods such as hydroponic culture are excluded. Proper management with effective traceability of every link from farm to fork is critical to assure the integrity of organic produce.

Potential users of the standard may include organic farmers, importers, exporters, logistics providers, distributors and retailers.

(VI) **Information Technology**

New

14. ***Guidelines for cloud outage incident response (COIR)**

This standard describes the COIR framework that details different types of cloud outage protection needs, provides guidelines to cloud service customers (CSCs) on cloud outage damages and loss mitigation, handling and post-management, and recommends how cloud service providers' (CSPs) COIR practices may be shared using the common framework.

The guidelines focus on cloud outage directly associated with operational mistakes, infrastructure or system failure and environmental issues (e.g. flooding, fire). The standard is meant to provide recommendations on steps to be taken in managing cloud outage incidents. It can be used for all businesses regardless of their size, types of cloud service models as well as cloud deployment models.

This standard complements the ISO/IEC 19086 series of international standards with the generic title "Information technology – Cloud computing – Service level agreement (SLA) framework" and is intended to assist CSCs, in choosing the appropriate outage protection requirements to complement their own business continuity planning and IT disaster recovery capabilities, when they compare and select cloud services for subscription from different CSPs.

This standard was first released for public comment from 12 May to 31 July 2017. The Working Group (WG) of the Cloud Computing Standards Technical Committee deliberated and addressed the comments received. Below is a summary of the changes taking into consideration the comments received:

- Removal of recommendations on data breach;
- Additional information on shared responsibilities between CSCs and CSPs;
- Simplification of Table 1 (Categories of outage impact) and Table 2 (Parameters of cloud outage protection needs);
- Addition of a worksheet (Annex A) for CSCs;
- Simplification of COIR disclosure form (Annex B);
- Editorial changes.

Potential users of this standard are the cloud service customers (CSCs) and the cloud service providers (CSPs).

(VII) **Manufacturing / Marine and Offshore**

New

15. *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.

16. *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.

17. *Mobile robots – Vocabulary (Identical adoption of ISO 19649:2017)

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.

18. *Robotics – Performance criteria and related test methods for service robots – Part 1: Locomotion for wheeled robots (Identical adoption of ISO 18646-1:2016)

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

19. *Robots and robotic devices – Safety requirements for personal care robots (Identical adoption of ISO 13482:2014)

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.

This standard does not apply to:

- robots travelling faster than 20 km/h;
- robot toys;
- water-borne robots and flying robots;
- industrial robots;
- robots as medical devices;
- military or public force application robots.

Potential users of the above standards on robots include robot manufacturers, suppliers and integrators as well as 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).

20. *Petroleum and natural gas industries – Site-specific assessment of mobile offshore units – Part 1: Jack-ups (Identical adoption of ISO 19905-1:2016)

This standard specifies requirements and guidance for the site-specific assessment of independent leg jack-up units for use in the petroleum and natural gas industries. It addresses:

- manned non-evacuated, manned evacuated and unmanned jack-ups;

- the installed phase at a specific site.

To ensure acceptable reliability, the provisions of this standard form an integrated approach, which is used in its entirety for the site-specific assessment of a jack-up.

This standard does not apply specifically to mobile offshore drilling units operating in regions subject to sea ice and icebergs. It also does not address design, transportation to and from site, or installation and removal from site.

Potential users include international mobile offshore structure specialists, representatives of rig-owners, class societies, oil companies, marine surveyors, consultants and regulators.

(VIII) Quality and Safety

Revision

21. *Code of practice for scaffolds (Revision of CP 14 : 1996)

This standard is a guide for the construction and use of scaffolds used in workplaces across various industries, such as but not limited to construction, marine, process industries, landscaping, manufacturing, commercial facilities management, repair and demolition. It also covers to a certain extent support scaffold used to shore/prop formwork and other heavy loads.

This standard excludes platform suspended by ropes, whether fixed or movable, power-operated platforms such as suspended scaffold, scaffolds piping used for roof work, temporary roofs and bintangor scaffolds.

Users of the standard include manufacturers and suppliers, contractors, approved scaffolding contractors, professional engineers, safety officers, consultants, industry associations, testing laboratories, facilities and maintenance personnel, academia and relevant government agencies.

(NOTE: Instead of the prefix CP, the revised edition of CP 14 will carry the prefix 'SS', i.e. SS XXX : 2017, XXX representing the number that will be assigned when the standard is approved.)

22. *Code of practice for diving at work (Revision of SS 511 : 2010)

This standard provides organisational and logistical requirements for the use of compressed air supply apparatus in occupational diving operations as well as specific requirements for the use of surface-supplied diving equipment (SSDE) in occupational underwater operations in depths not exceeding 50 m and commercial self-contained underwater breathing apparatus (CSCUBA) in occupational underwater operations in depths not exceeding 30 m.

This standard does not apply to recreational diving and scientific diving.

Users of the standard include suppliers and contractors in the marine industries, shipyards, industry associations, academia and relevant government agencies.

Withdrawal

23. Code of practice for the filling, inspection, testing and maintenance of containers for the storage and transport of compressed gases (CP 12)

Part 1 : 2000 Seamless metal containers for gases, excluding dissolved acetylene

Part 2 : 1998 Containers for dissolved acetylene gas

CP 12 Parts 1 and 2 are recommended for withdrawal as they will be replaced by the new 3-part Singapore Standard on the filling, inspection, testing and maintenance of gas cylinders for the storage and transport of compressed gases.

Copies of drafts and standards are available at:

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| <p>*For drafts (Viewing only) Login to Singapore Standards eShop at: http://www.singaporestandardseshop.sg [Login ► Browse ► Product Categories ► Singapore Standards ► Drafts (Singapore Standards) ► Select draft]</p> <p>For Singapore Standards (Viewing and purchase) Toppan Leefung Pte Ltd 1 Kim Seng Promenade #18-01 Great World City East Tower Singapore 237994 Customer Service Hotline: (65) 6826 9691 Email: singaporestandardseshop@toppanleefung.com Contact person: Mr Rahman Daud</p> <p>Operating Hours: Mon to Fri: 9.30 am to 6.00 pm Closed on Saturdays, Sundays and Public Holidays</p> | <p>For drafts and Singapore Standards (Viewing only)</p> <p>National Library Board Lee Kong Chian Reference Library Level 7, 100 Victoria Street Singapore 188064</p> <p>Viewing hours: Mon to Sun: 10 am to 8.30 pm. Email ref@nlb.gov.sg to schedule an appointment to view the standards.</p> |
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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) Building and Construction

1. Technical Reference for facility design guidelines for polyclinics

Three fundamental key planning units (KPU) and their six functional planning units (FPU) of a polyclinic are proposed to be included in the new work item, namely:

- Basic facilities, which cover acute services, wellness module and chronic disease related services;
- Support facilities, which include diagnostic module and pharmacy; and
- Enhanced facilities, which cover dental services.

This proposed new work item will be the fourth Technical Reference for healthcare facilities.

Potential users of the standard may include architects, professional engineers, consultants, contractors, developers, operators of polyclinics and relevant regulatory bodies.

(II) Chemical

2. Graphene flakes – Sample preparation and structural characterisation

This Singapore Standard will provide a systematic and structured approach in the assessment and characterisation of graphene flakes. This standard will consist of the following parts:

- Part 1: Methods and sample preparation;
- Part 2: Determination of crystallite lateral size of graphene flakes by optical microscopy (OM);
- Part 3: Determination of level of defects on graphene flakes by Raman spectroscopy;
- Part 4: Determination of number of layers on graphene flakes by atomic force microscopy (AFM)

This standard can be applied to industrial uses like water purification and energy harvesting.

Potential users of this series of standards may include manufacturers, buyers, users and testing laboratories involved in the production and commercialisation of graphene, academia and institutes of higher learning in Singapore which have formed the nanotechnology research entities, relevant regulatory bodies and conformity assessment bodies.

3. Code of practice for the handling of engineered nanoparticles in workplaces

This standard will provide guidance on occupational health and safety measures relating to the handling of engineered nanomaterials, including the use of engineered controls and appropriate personal protective equipment, guidance on dealing with spills and accidental releases and guidance on appropriate handling of these materials during disposal.

The proposed standard is intended to prevent adverse health and safety consequences during the production, handling, use and disposal of manufactured nano-objects, and their aggregates and agglomerates.

Potential users of may include laboratories, institutes of higher learning, manufactures, distributors and end-users of engineered nanoparticles.

Copies of the drafts are not available at this juncture.

B.2 Review of Singapore Standards

(I) Chemical

1. Specification for hazard communication for hazardous chemicals and dangerous goods

Part 1 : Transport and storage of dangerous goods (SS 586 : Part 1 : 2014)

This standard provides information and guidance on the classification of dangerous goods (DG) by the types of hazards they present. It also provides information on standard hazard communication DG labels. This part applies to the storage and transportation of dangerous goods by road in Singapore, which includes carriages in bulk, tank-vehicles, vehicles with demountable tanks as well as by vehicles carrying dangerous goods in packages. The transportation of dangerous goods by sea and air is subject to the requirements of International Maritime Organisation and International Air Transport Association / International Civil Aviation Organisation respectively and is not covered in this standard.

Part 2 : Globally harmonised system of classification and labelling of chemicals – Singapore's adaptations (SS 586 : Part 2 : 2014)

Part 3 : Preparation of safety data sheets (SDS) [SS 586 : Part 3 : 2008 (2014)]

Part 2 and Part 3 provide guidance for the implementation of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Preparation of Safety Data Sheets (SDS) in Singapore. GHS is an international system for the classification of chemicals by the types of hazards they present. It provides information on standard hazard communication elements including DG labels and SDS. The GHS helps to ensure that information on physical hazards, health hazards and environmental hazards from chemicals is made available, in order to enhance the protection of human health and the environment during the handling, transport, storage and use of these chemicals. The GHS also provides for the global harmonisation of rules and regulations on the classification, labelling and SDS of chemicals.

Users of the above standards include chemical manufacturers, importers, suppliers, supply chain service providers and national competent authorities such as the Agri-Food and Veterinary Authority, Health Sciences Authority, Ministry of Health, Ministry of Manpower, National Environment Agency, Singapore Civil Defence Force and Singapore Police Force.

2. Specification for fineness and marking of articles of precious metals (SS 581 : 2012)

This standard deals with the system of description and marking of articles of precious metals. It does not cover articles which are intended to be used for medical, dental, veterinary, scientific and industrial purposes. Further, this standard does not apply to articles made of alloys of a fineness less than 850 ‰ for platinum, 375 ‰ for gold, 500 ‰ for palladium and 800 ‰ for silver.

Users of the above standard include gold and precious metal jewellery manufacturers, testing laboratories (e.g. assay and hallmarking), consumers, retailers, traders and distributors.

3. Methods of test for paints, varnishes and related materials (SS 5)

This standard consists of 50 parts. The methods of test are intended primarily for use in the testing of materials for compliance with the related Singapore Standards and other specifications. The methods are grouped according to the general nature of tests from Group A to Group H as follows:

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|------------------------|--|
| Part 0 : 2013 | General introduction |
| Part A1 : 2003 (2013) | Sampling |
| Part A2 : 2013 | Examination and preparation of samples for testing |
| Part A3 : 2013 | Preparations of panels prior to testing |
| Part A4 : 2003 (2013) | Temperatures and humidities for conditioning and testing |
| Part B1 : 2013 | Determination of film thickness |
| Part B2 : 2013 | Determination of non-volatile matter |
| Part B3 : 1987 (2013) | Determination of water by the Dean and Stark method |
| Part B4 : 2003 (2013) | Condition in container |
| Part B5 : 2003 (2013) | Skinning (partially filled container) |
| Part B6 : 2013 | Storage stability (filled container) |
| Part B7 : 2013 | Density |
| Part B8 : 1987 (2013) | Reducibility and dilution stability |
| Part B9 : 2003 (2013) | Brushing properties |
| Part B10 : 2003 (2013) | Spraying properties |
| Part B11 : 2013 | Determination of viscosity by Ford viscosity cup |
| Part B12 : 2013 | Consistency of paints using the Stormer viscometer |
| Part B13 : 2003 (2013) | Fineness of grind |
| Part B14 : 1987(2013) | Pigment content (centrifuge) |
| Part B15 : 2013 | Determination of a flashpoint – Closed cup equilibrium method |
| Part B16 : 2013 | Determination of viscosity by the Brookfield viscometer |
| Part C2 : 1987 (2013) | Determination of aluminium metal content |
| Part C4 : 1988 (2013) | Determination of low concentrations of mercury in paint by atomic absorption spectroscopy |
| Part C6 : 1988(2003) | Determination of low concentrations of lead, cadmium and cobalt in paint by atomic absorption spectroscopy |
| Part D1 : 2003 (2013) | Wet edge time |
| Part D2 : 2013 | Surface-drying time (Ballotini method) |
| Part D3 : 1988 (2013) | Hard-drying time |
| Part D4 : 1988 | No pick-up time |
| Part D5 : 2013 | Determination of through-dry state and through-dry time |
| Part E1 : 2003 | Measurement of specular gloss of non-metallic paint films at 20, 60 and 85 degree |
| Part E2 : 2013 | Determination of contrast ratio (opacity) of light-coloured paints at a fixed spreading rate |
| Part E3 : 2003 (2013) | Visual comparison of the colour of paints |
| Part F1 : 2013 | Bend test (cylindrical mandrel) |
| Part F2 : 2013 | Scratch test |
| Part F3 : 2013 | Abrasion resistance (Taber abrader) |
| Part F4 : 1989 (2013) | Abrasion resistance by falling abrasive |
| Part F5 : 2003 (2013) | Washability (wet abrasion) of emulsion paint |
| Part F6 : 2014 | Determination of wet-scrub resistance |
| Part G2 : 2003 (2013) | Alkali resistance |
| Part G6 : 2003 (2013) | Resistance to humidity under condensation conditions |

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| Part G7 : 2003 (2013) | Resistance to humidity – Procedure for exposing test specimens in condensation-water atmospheres |
| Part G8 : 2003 (2013) | Determination of bleeding for road marking paint |
| Part G9 : 2003 (2013) | Artificial weathering and exposure to artificial radiation – Exposure to filtered xenon-arc radiation |
| Part G10 : 2003 (2013) | Corrosion tests in artificial atmospheres – Salt spray tests |
| Part H1 : 1985(2013) | Evaluating degree of settling of paint |
| Part H2 : 2013 | Designation of degree of blistering |
| Part H3 : 2013 | Designation of degree of rusting |
| Part H4 : 2013 | Designation of degree of cracking |
| Part H5 : 2013 | Designation of degree of flaking |
| Part H7 : 2013 | Rating of degree of chalking by tape method |

Users of the above standards include test laboratories, paint suppliers and manufacturers, contractors, consultants, architects and relevant government agencies.

4. **Technical Reference for bunker mass flow metering** (TR 48 : 2015)

This Technical Reference (TR) covers the requirements of metering system qualification, installation, testing, procedures and documentation for bunker custody transfer using the Coriolis mass flow metering system. The purpose of this TR is to document principles, requirements and procedures in the application of mass flow metering to bunkering in Singapore.

TR 48 has been implemented by the Maritime and Port Authority with effect from 1 Jan 2017. At the end of the two-year trial, the TR 48 will be reviewed, taking into account feedback or other considerations, to further its development into a Singapore Standard.

Users of the TR include the vendors of Coriolis mass flow meters, bunker suppliers, bunker surveyors, bunker tanker operators, shipowners/buyers and the implementing authority.

Submit Comments

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](#).