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Form 1: Proposal for a new field of technical activity

Circulation date: Click here to enter text. Closing date for voting: Click here to enter text.	Reference number (to be given by Central Secretariat)
Proposer: SAC and ANSI	**ISO/TS/P** Click here to enter text.

A proposal for a new field of technical activity shall be submitted to the Central Secretariat, which will assign it a reference number and process the proposal in accordance with the ISO/IEC Directives (part 1, subclause 1.5). The proposer may be a member body of ISO, a technical committee, subcommittee or project committee, the Technical Management Board or a General Assembly committee, the Secretary-General, a body responsible for managing a certification system operating under the auspices of ISO, or another international organization with national body membership. Guidelines for proposing and justifying a new field of technical activity are given in the ISO/IEC Directives (part 1, Annex C).

The proposal (to be completed by the proposer)

Title of the proposed new committee (The title shall indicate clearly yet concisely the new field of technical activity which the proposal is intended to cover.) Corrosion control engineering life cycle

Scope statement of the proposed new committee (The scope shall precisely define the limits of the field of activity. Scopes shall not repeat general aims and principles governing the work of the organization but shall indicate the specific area concerned.)

The standardization of the corrosion control engineering life cycle, including the terms and definitions, general requirements, and evaluation of the corrosion control engineering life cycle. The engineering life cycle is defined as a system view of the structure to be protected from corrosion that includes the initial design and development based on material selection and protective measures through the construction, inspection, assessment, maintenance, and decommissioning at the end of life of the structure.

Excluded is work in the field of corrosion of metals and alloys including corrosion test methods and corrosion prevention methods and standardization in the field of paints, varnishes, and related products, including raw materials. Specific industry or market segments due to their special requirements are also excluded from the scope.

Proposed initial programme of work (The proposed programme of work shall correspond to and clearly reflect the aims of the standardization activities and shall, therefore, show the relationship between the subject proposed. Each item on the programme of work shall be defined by both the subject aspect(s) to be standardized (for products, for example, the items would be the types of products, characteristics, other requirements, data to be supplied, test methods, etc.). Supplementary justification may be combined with particular items in the programme of work. The proposed programme of work shall also suggest priorities and target dates.

Corrosion control covers many market segments and materials that can include metals and other materials such as concrete and plastic. The causes of corrosion are many and cannot be addressed by one method. Further, various industries and structures have different requirements for the life cycle related to the impact of corrosion. Many can be the subject of regional regulation that will set requirements. Therefore, this proposal for the corrosion control engineering life cycle will address the most general guidance and best practice through standards that can be used as a basis for more specific needs. Effective corrosion control programs will improve sustainability of the environment, safety, and reduce catastrophic failures.

The standardization of the corrosion control engineering life cycle can be considered on three levels. The first level pertains to the basic standards, including the terms and the definitions involved in the corrosion control engineering life cycle. The second level involves the general requirements for all the factors affecting whole life cycle, which include objective, corrosion source, material, technology, design, development, manufacture, construction, installation, storage and transportation, inspection, assessment, application, maintenance, scrapping, document management, etc. The third level is concerned with the evaluation criteria for the corrosion control engineering life cycle.

Of the three levels, the first one provides a foundation to maintain consistency in all the activities of the corrosion control engineering life cycle, making it convenient for users to understand and implement the standards. The second and third levels identify requirements of the related factors and general evaluation guidelines that can be applied in more specific applications in various industry segments.

1. The basic standards

——The terms of corrosion control engineering life cycle, etc.

2. The general requirements standards

——The control requirements of the related factors in the corrosion control engineering life cycle, etc.

3. The evaluation standards

——The evaluation guidelines of the corrosion control engineering life cycle, etc.

Standardization of the corrosion control engineering life cycle is needed to be urgently developed at the current time. The proposing TC is planning to propose 1 to 3 standards in five years based on international standard demands.

Requirements in specific industries cannot be addressed by the proposing TC but the proposed work of the TC is expected to provide a basis for adoption in more specific standards for these industries.

Indication(s) of the preferred type or types of deliverable(s) to be produced under the proposal (This may be combined with the "Proposed initial programme of work" if more convenient.)

1. Corrosion control engineering life cycle—Terms(IS);

2. Corrosion control engineering life cycle—General requirements(IS);

3. Corrosion control engineering life cycle—Evaluation guidelines(IS);

4. Corrosion control engineering life cycle---Determination of risks associated with corrosion(IS)

A listing of relevant existing documents at the international, regional and national levels. (Any known relevant document (such as standards and regulations) shall be listed, regardless of their source and should be accompanied by an indication of their significance.)

ISO/TC 156 has a standard of terms and definitions:

ISO 8044:1999 Corrosion of metals and alloys -- Basic terms and definitions

Some organizations including NACE International, API, ASTM, ASME, DNV, IMO，SSPC have issued regional standards and regulations that provide requirements on management of structures subject to corrosion and corrosive environments both on land and off shore. These may cover pipelines, ships, bridges, and other structures.

A statement from the proposer as to how the proposed work may relate to or impact on existing work, especially existing ISO and IEC deliverables. (The proposer should explain how the work differs from apparently similar work, or explain how duplication and conflict will be minimized. If seemingly similar or related work is already in the scope of other committees of the organization or in other organizations, the proposed scope shall distinguish between the proposed work and the other work. The proposer shall indicate whether his or her proposal could be dealt with by widening the scope of an existing committee or by establishing a new committee.)

So far, there is no TC or PC on standardization overlapping the corrosion control engineering life cycle within ISO and IEC, but some TCs may relate to: ISO/TC 156 focuses on standardization of corrosion of metals and alloys including corrosion test methods and corrosion prevention methods. ISO/TC 35 focuses on standardization of paints, varnishes, and the related products. ISO/TC 107 focuses on standardization of metallic and other inorganic coatings. These TCs' standardization work has played an effective role in corrosion control and prevention, but their standards only involve certain factors affecting the corrosion control engineering life cycle in the fields such as material, technology, and so on.
The proposing TC plans to focus on standardization of corrosion control engineering life-cycle, which provides the safest and most beneficial approach in application by coordinating and optimizing all factors in the whole life cycle. The standards would be comprehensive, systematic, coordinated, optimized, and cross-disciplinary. The proposing TC doesn't involve or contain the scope of TC 156, TC 35, and TC 107. But it is perhaps necessary to set up a liaison with these TCs as follows:

TC 08 Ships and marine technology
TC 35 Paints and varnishes
TC 67/WG 7 Corrosion resistant materials
TC 67/WG 8 Materials, corrosion control, welding and jointing, and non-destructive examination (NDE)
TC 67/SC 2 Pipeline transportation systems
TC 67/SC 7 Offshore structures
TC 71 Concrete, reinforced concrete and pre-stressed concrete
TC 85 Nuclear energy, nuclear technologies, and radiological protection
TC 107 Metallic and other inorganic coating
TC 108/SC 5 Condition monitoring
TC 156 Corrosion of metals and alloys
TC 164 Mechanical testing of metals
TC 167 Steel and aluminium structures
TC 207/SC 5 Life cycle assessment

A listing of relevant countries where the subject of the proposal is important to their national commercial interests.

All countries that require sustainable corrosion protection of important infrastructure.

A listing of relevant external international organizations or internal parties (other ISO and/or IEC committees) to be engaged as liaisons in the development of the deliverable(s). (In order to avoid conflict with, or duplication of efforts of, other bodies, it is important to indicate all points of possible conflict or overlap. The result of any communication with other interested bodies shall also be included.)

Each of the following are already or may be developing similar standards or standards that can be referenced by the proposing TC.
CEN
NACE International
ASTM
API
IOGP

A simple and concise statement identifying and describing relevant affected stakeholder categories (including small and medium sized enterprises) and how they will each benefit from or be impacted by the proposed deliverable(s).

The stakeholders of the corrosion control engineering life cycle are the organizations or individuals, including owners, constructors, government organizations, regulatory bodies, consumers, third-party institutions, etc. They are affected by the safety and benefit of corrosion control engineering.
The proposed international standards of corrosion control engineering life cycle will provide the above-mentioned stakeholders with a series of advantages. For each stakeholder, the standards may provide improvement in safety, reducing the risk of accidents, reduction in the cost of repair, and extended service life. For owners, they will reduce the cost of repair and renew. For constructors, they will guarantee construction quality. For government and regulatory bodies, they will acquire a powerful mechanism to maintain justice and a fair market order. For the consumers, they will get safe environment. For third-party institutions, they will be provided scientific methods to establish, uniform and standardized measurements and to expand the market scale on a worldwide scale.

Guidance provided by the standards will provide a uniform basis for segment-specific standards.

An expression of commitment from the proposer to provide the committee secretariat if the proposal succeeds.

If the proposal could be approved by ISO, China is willing to take charge of the work of the new TC secretariat.

Purpose and justification for the proposal. (The purpose and justification for the creation of a new technical committee shall be made clear and the need for standardization in this fieldshall be justified. Clause C.4.13.3 of Annex C of the ISO/IEC Directives, Part 1 contains a menu of suggestions or ideas for possible documentation to support and purpose and justification of proposals. Proposers should consider these suggestions, but they are not limited to them, nor are they required to comply strictly with them. What is most important is that proposers develop and provide purpose and justification information that is most relevant to their proposals and that makes a substantial business case for the market relevance and the need for their proposals. Thorough, well-developed and robust purpose and justification documentation will lead to more informed consideration of proposals and ultimately their possible success in the ISO IEC system.)

The object of standardization is the corrosion control engineering life cycle, and the developed standards, are intended to provide safety and benefits for long-life operation of assets by controlling all the identified factors in the life cycle including objective, corrosion source, material, technology, design, development, manufacture, construction, installation, storage and transportation, inspection, assessment, application, maintenance, scrapping, document management, etc.

Corrosion is ubiquitous in the world, which causes reduction of limited resources, potential safety hazards, ecological damage and environment pollution. According to international statistics, the loss caused by corrosion is about 3 to 5% of GDP. A recent report by World Corrosion Organization (WCO) shows that global annual cost caused by corrosion is US $2.2 trillion.

It is necessary and urgent to develop a series of uniform general standards on the corrosion control engineering life cycle on a worldwide scale for controlling corrosion with a scientific, economic, and standardized means. It is also very useful and effective in preventing and avoiding accidents related to or caused by corrosion, such as pipeline blasts, bridge collapse, chemical/nuclear plant equipment leakage, etc.

A number of standards related to corrosion control have been developed by different national, regional, or international committees or regulatory bodies. They have played an effective role in corrosion control. But corrosion is an interdisciplinary subject, and corrosion control is also an interdisciplinary and comprehensive engineering technology. To obtain benefits of anticorrosion engineering, a whole life-cycle control should be taken in a comprehensive, systematic, coordinating, and optimizing way in the aspects of objective, corrosion source, material, technology, design, development, manufacture, construction, installation, storage and transportation, inspection, assessment, application, maintenance, scrapping, document management, etc.

Therefore, we strongly suggest that ISO approve the establishment of this specialized technical committee (TC) on the corrosion control engineering life cycle, The new TC will be in charge of the constitution work of international standardization of the corrosion control engineering life cycle, improving and perfecting a system of international standards in this field. The system is expected to be extensively accepted and implemented on a worldwide scale to fulfill the following objectives:

1. To allow all the member countries around the globe to share the most advanced research achievements and practical experiences in the field of anticorrosion engineering and to obtain the maximum safety, benefit, and effect of corrosion control engineering by comprehensive control of all the factors in the whole life cycle.
2. To standardize the behavior of the corrosion control engineering life cycle on a worldwide scale, and to provide guidance to the enterprises for achieving the maximum safety and benefit.
3. To promote the establishment of corrosion control engineering life-cycle evaluation for reduction in the waste of our limited resources, and contribution to construction around the globe.

Signature of the proposer Li Yubing

Further information to assist with understanding the requirements for the items above can be found in the Directives, Part 1, Annex C.

The object of standardization is the corrosion control engineering life cycle, and standards to be developed are intended to provide maximum safety and benefits for long-life operation of assets by controlling all the identified factors in the life cycle including objective, corrosion source, material, technology, design, development, manufacture, construction, installation, storage and transportation, inspection, assessment, application, maintenance, scrapping, document management, etc. The standard could be general requirement in top level with integrity, systematicness, coordination and optimization. Corrosion is ubiquitous in all industries, which corrosion control is a supporting, attached and service work. Standards developed in specific industry are professional standards due to their special requirements. We have reviewed the scope of additional potential liaison in revised form, and we have some suggestions:

TC67 works on standardization of the materials, equipment and offshore structures used in the drilling, production, transport by pipelines and processing of liquid and gaseous hydrocarbons within the petroleum, petrochemical and natural gas industries. TC67/WG7、TC67/WG8、TC67/SC2、TC67/SC7 may develop specific requirements due to corrosion problem in this area, so it is perhaps necessary to set up liaison with them. TC71 works on standardization of the technology of concrete, which may develop specific requirements solving corrosion problems of concrete, so it is perhaps necessary to set up liaison with it. TC85 works on standardization in the field of peaceful applications of nuclear energy, nuclear technologies and in the field of the protection of individuals and the environment against all sources of ionising radiations, which may contain corrosion control requirements of nuclear power plants, so liaison is perhaps necessary. TC108/SC5 works on standardization of the procedures, processes and equipment requirements uniquely related to the technical activity of condition monitoring and diagnostics of machines systems, which monitoring requirements may be used as reference in monitoring factor of corrosion control life cycle, so liaison with it may also necessary. TC164 works on standardization of methods for mechanical testing, which some methods may be used in testing in corrosion control engineering, so liaison with it is perhaps necessary. TC167 works on standardization in the field of structural use of steel and alloys of aluminium as applied in building, civil engineering and related structures, which alloys of alminium may be used as functional raw materials in corrosion control engineering, so liaison is perhaps necessary. TC207/SC5 works on life cycle assessment in environment management, which assessment method may be used for reference in assessment of corrosion control engineering life cycle, so liaison may be also necessary.

TC44 works on standardization of welding, by all processes, as well as allied processes, which these standards include terminology, definitions and the symbolic representation of welds on drawings, apparatus and equipment for welding, raw materials (gas, parent and filler metals) welding processes and rules, methods of test and control, calculations and design of welded assemblies, welders' qualifications, as well as safety and health. TC224 works on standardization of a framework for the definition and measurement of service activities relating to drinking water supply

systems and wastewater systems, which the standardization includes the definition of a language common to the different stakeholders, the definition of the characteristics of the elements of the service according to the consumers expectations, a list of requirements to fulfil for the management of a drinking water supply system and a wastewater system, service quality criteria and a related system of performance indicators, without setting any target values or thresholds. TC251 works on standardization in the field of asset management. TC282 works on standardization of water re-use of any kind and for any purpose, which covers both centralized and decentralized or on-site water re-uses, direct and indirect ones as well as intentional and unintentional ones. It includes technical, economic, environmental and societal aspects of water re-use. Water re-use comprises a sequence of the stages and operations involved in uptaking, conveyance, processing, storage, distribution, consumption, drainage and other handling of wastewater, including the water re-use in repeated, cascaded and recycled ways. According to scopes of these four TCs, we don't think they may directly relate to corrosion control engineering life cycle, or contain requirements as well, therefore, we suggest that it may be unnecessary to set up liaison with them.