



参与国际标准化经验分享

中国钢铁工业协会

冯超

2023年6月27日

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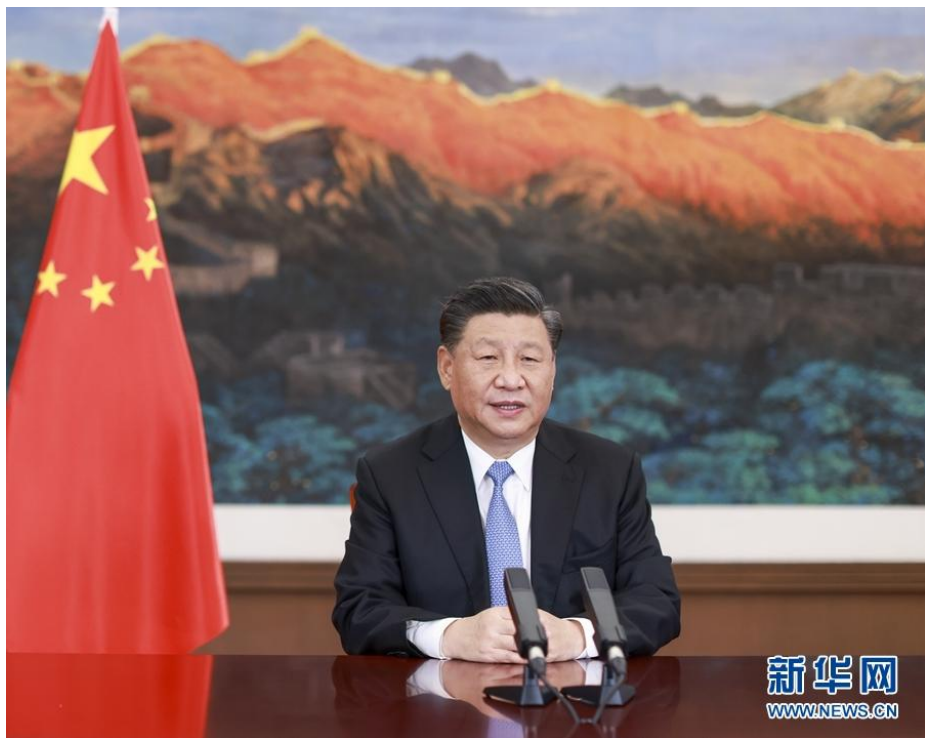
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二、国际标准组织任职经验分享

三、国际标准技术讨论实践经验分享

四、建议

一、前言



- 标准是人类文明进步的成果。从中国古代的“车同轨、书同文”，到现代工业规模化生产，都是标准化的生动实践。伴随着经济全球化深入发展，**标准化在便利经贸往来、支撑产业发展、促进科技进步、规范社会治理中的作用日益凸显。标准已成为世界“通用语言”**。世界需要标准协同发展，标准促进世界互联互通。
- 标准助推创新发展，标准引领时代进步。**国际标准是全球治理体系和经贸合作发展的重要技术基础**。国际标准化组织作为最权威的综合性国际标准机构，制定的标准在全球得到广泛应用。希望与会嘉宾集思广益、凝聚共识，共同探索标准化在完善全球治理、促进可持续发展中的积极作用，为创造人类更加美好的未来作出贡献。

—— 习近平致第39届国际标准化组织大会的贺信

一、前言



习近平总书记2014年在河南省兰考调研

标准决定质量，有什么样的标准就有什么样的质量，只有高标准才有高质量。

- 促进政策、规则、标准三位一体,为互联互通提供机制保障；加强政策， 规制、标准等方面的“软联通”； 加强标准体系相互兼容。
- “标准化日益成为全世界面临的重大战略问题，也越来越受到国际社会的高度重视。”

谁制定标准,谁就拥有话语权； 谁掌握标准,谁就占领制高点。

一、前言

我国参与国际标准化活动

1946年	我国加入国际标准化组织（ISO）
1957年	我国加入国际电工委员会（IEC）
1978年	我国恢复ISO成员国身份
1980年	我国首次当选IEC执行委员会成员
1981年	我国粉末冶金测氧方法标准被采纳为国际标准，成为我国主导制定的首个国际标准
1982年	我国首次当选ISO理事会成员
1988年	我国首次承担ISO技术委员会秘书处（ISO/TC20/SC1, ISO/TC79/SC2）
1990年	我国首次承办第54届IEC大会
1990年	我国专家鲁绍曾（原国家技术监督局副局长）当选IEC副主席



一、前言

我国参与国际标准化活动历史回顾

1999年	我国首次承办第22届ISO大会
2002年	我国承办第66届IEC大会
2003年	我国承担首个IEC技术委员会秘书处（IEC/TC7）
2008年	我国成为IEC常任理事国
2011年	我国成为IEC常任理事国
2013年	我国专家张晓刚当选ISO主席
2013年	我国专家舒印彪当选IEC副主席
2016年	我国承办第39届ISO大会
2018年	我国专家舒印彪当选IEC主席
2019年	我国承办第83届IEC大会

一、前言



领跑

部分引领

十八大以来，由单一采用国际标准向采用 与制定并用转变，积极提交国际标准提案，出任三大国际标准组织领导职位，“一带一路”建设带动标准“走出去”。

并跑

参与

加入WTO以来，开始熟悉并掌握标准这一“游戏规则”，主动利用标准融入全球经济体系。

跟跑

采标

改革开放以来，积极采用国际标准和国外先进标准填空白，补短板。

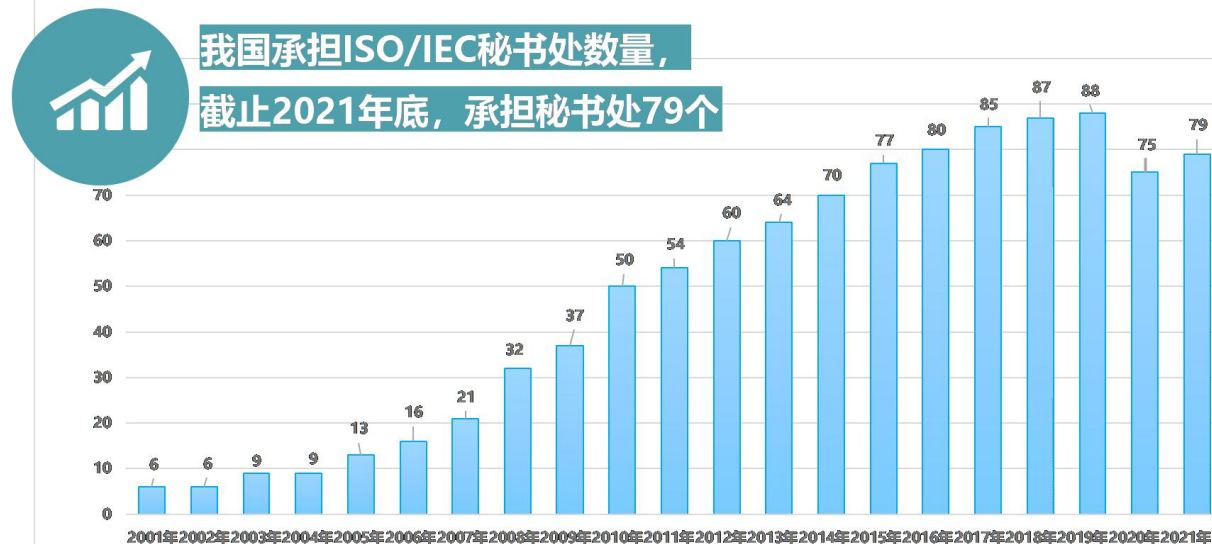
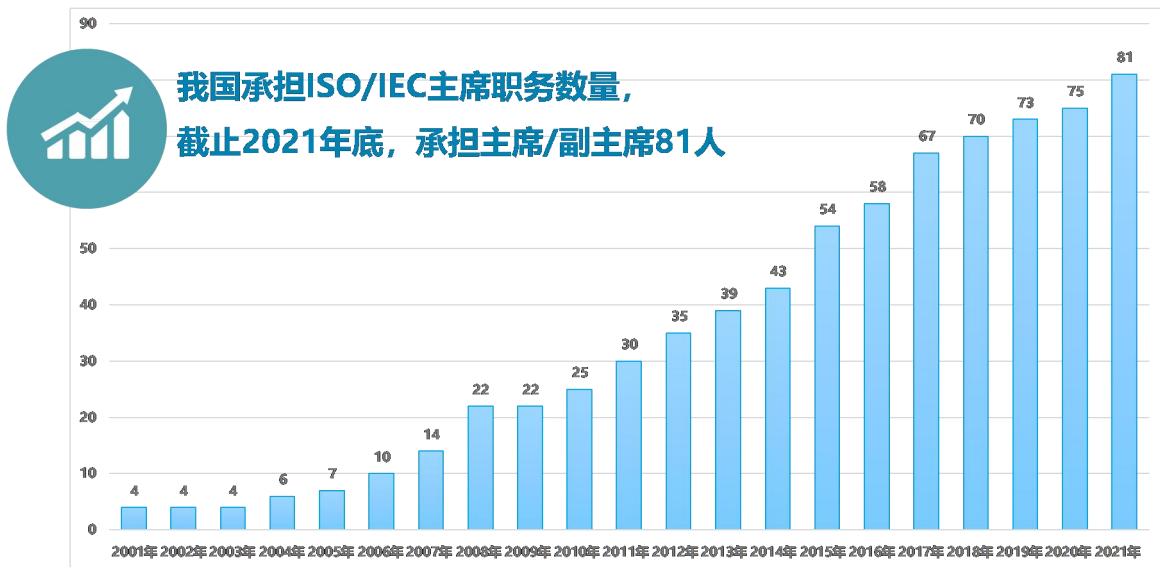
一、前言



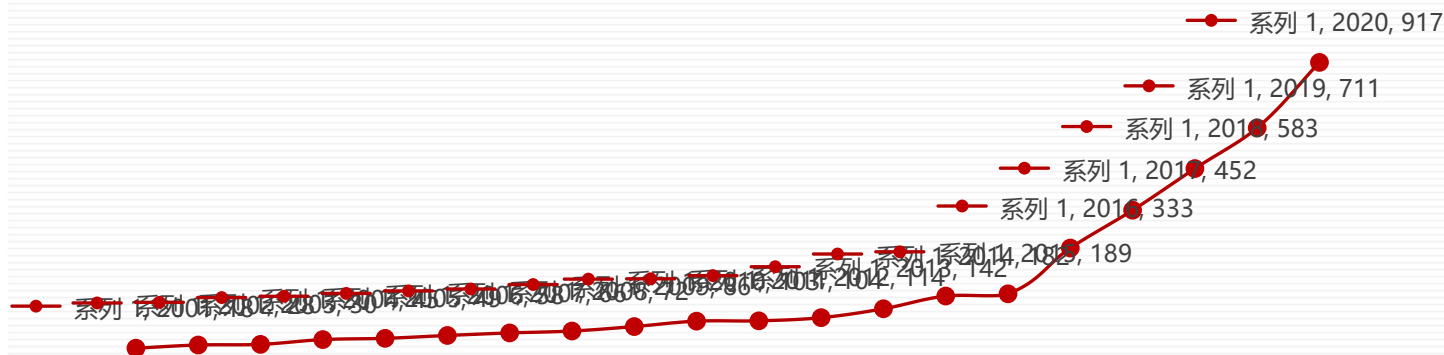
在国际标准组织治理 中 影响力越来越大

- 2008年担任ISO常任理事国
- 2011年担任IEC常任理事国
- 2015年担任ISO主席
- 2020年担任IEC主席
- 参与ISO战略制定
- 参与IEC战略制定
- 举办ISO第39届大会
- 举办IEC第83届大会
- 参与IEC治理变革

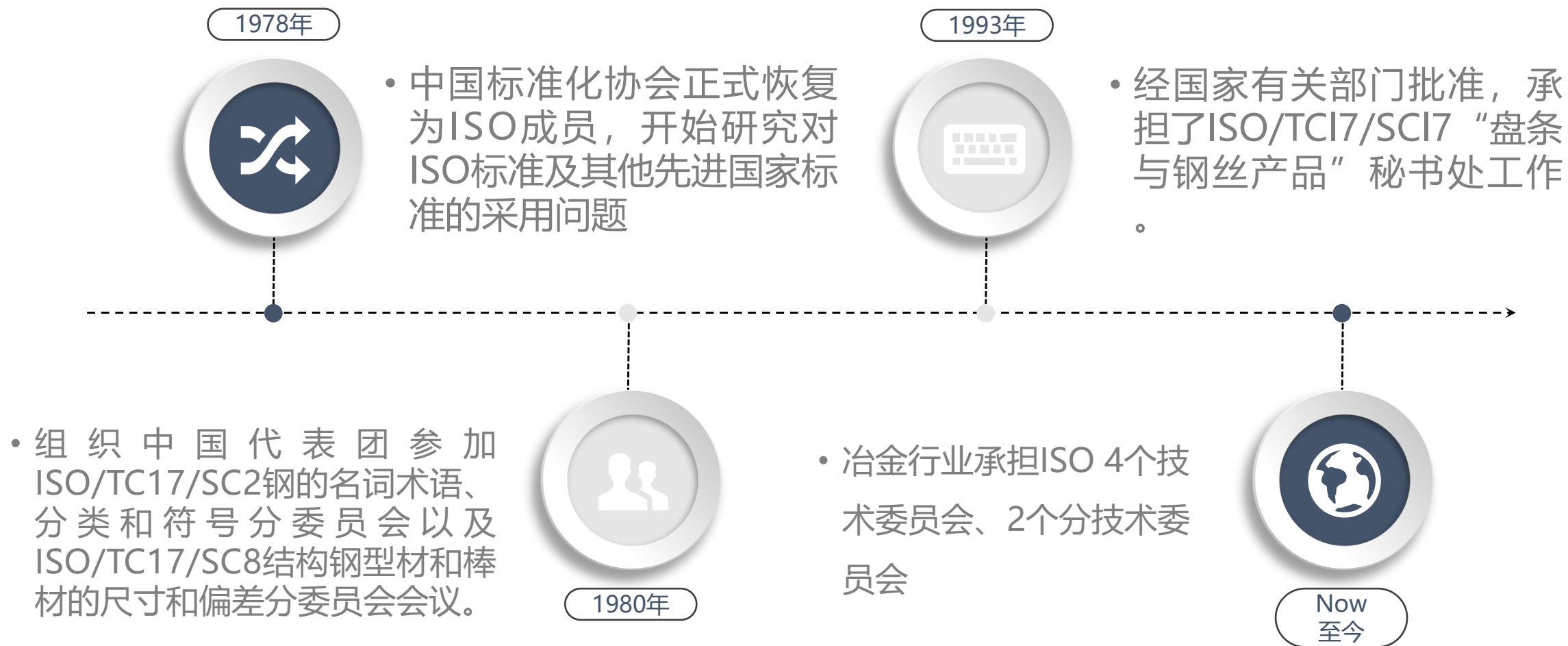
一、前言



中国参与国际标准化活动情况



一、前言



一、前言

TC5

TC17

TC105

TC156

TC164

TC167

-Ferrous metal pipes and metallic fittings

-Steel

-Steel wire ropes

-黑色金属管和金属配件

-钢

-钢丝绳

-Corrosion of metals and alloys

-Mechanical testing of metals

-金属和合金的腐蚀

-金属材料力学试验

-Steel and aluminium structures

-钢和铝结构

一、前言



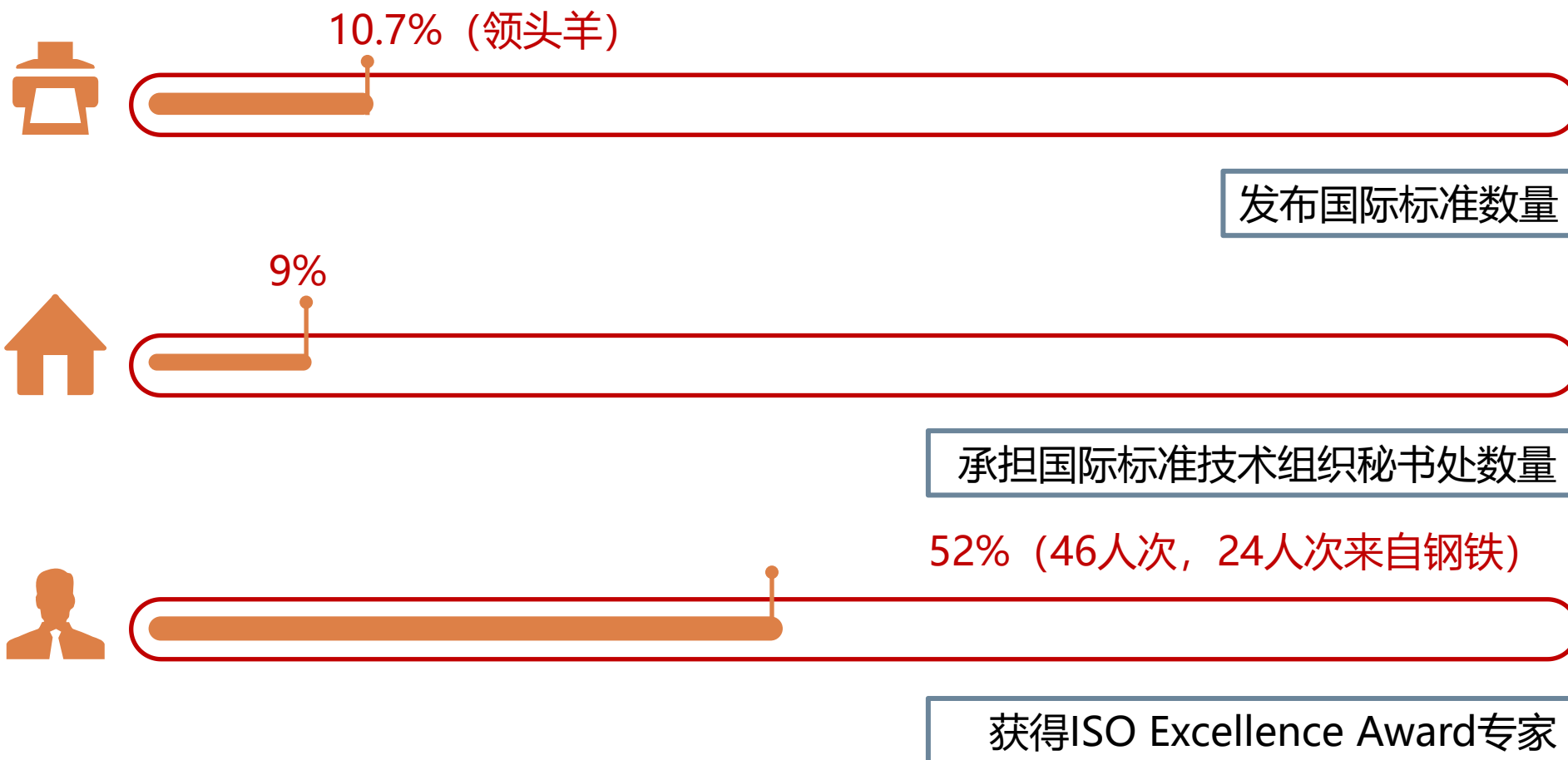
2011年~2021年底:

- 提出并成功立项国际标准提案**94**项
- 已发布国际标准**50**项

截至2021年底:

- 在研项目有**45**项
- 工作组召集人**21**人
- 项目负责人/联合负责人**39**人
- 已批准发布国家标准外文版共86项，行业标准外文版共7项
- 在研外文版计划：国标**65**项，行标**7**项

一、前言



截至2021年底，钢铁领域国际标准化工作占据全国比例

一、前言

ISO/TC5

Ferrous metal pipes and
metallic fittings
黑色金属管与金属配件

ISO/TC105

Steel wire ropes
钢丝绳

ISO/TC132

Ferroalloys
铁合金

ISO/TC156

Corrosion of metals and alloys
金属和合金的腐蚀

ISO/TC17
/SC15

Railway rails, rails fasteners,
wheels and wheelsets
钢/钢轨、车轮及配件

ISO/TC17
/SC17

Steel wire rod and wire products
钢/盘条与钢丝

ISO/TC17
/SC12

Continuous mill flat rolled products
钢/连续轧制扁平材

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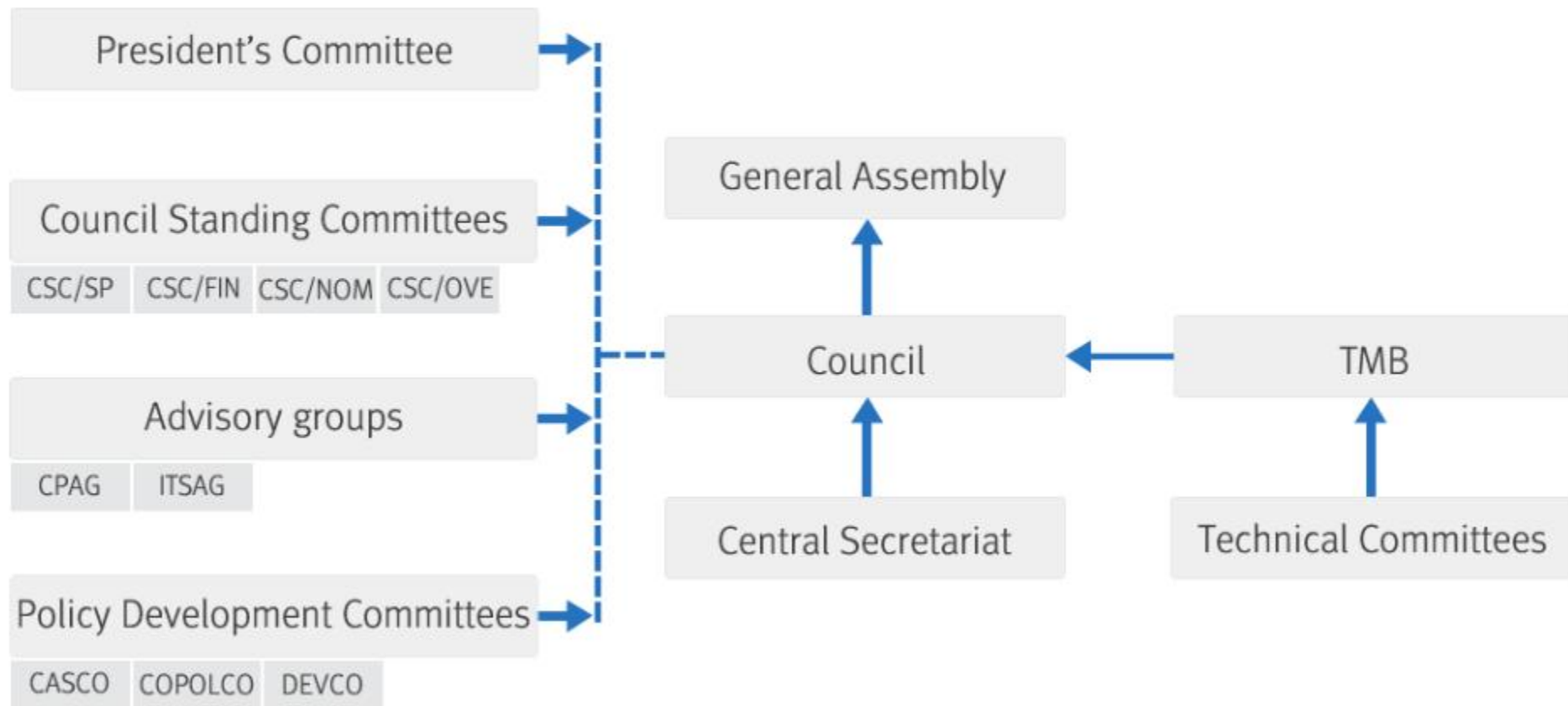
一、前言

二、国际标准组织任职经验分享

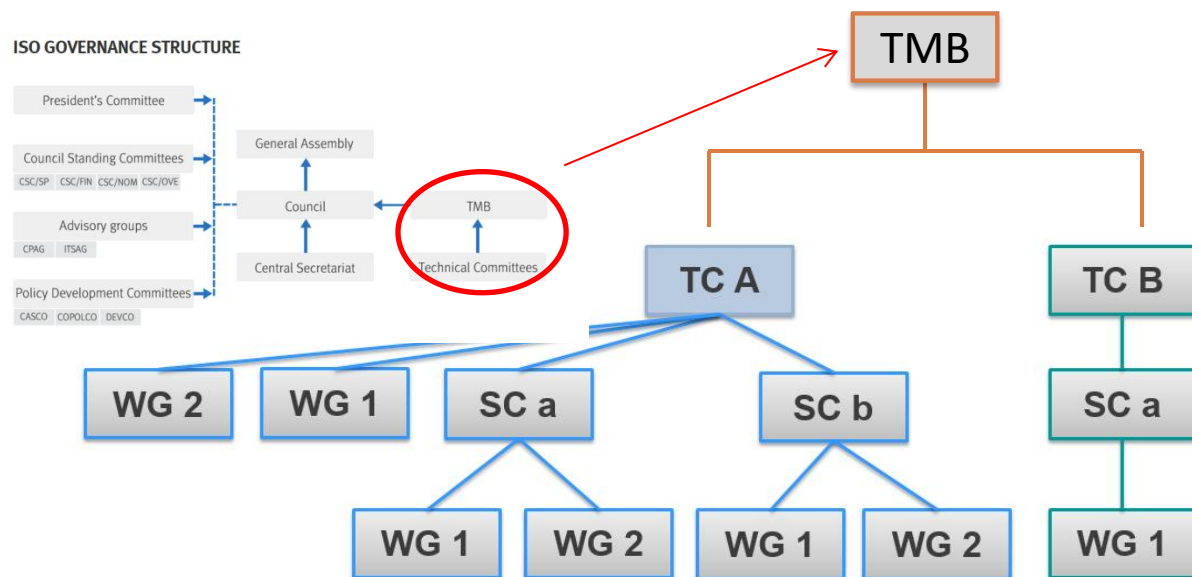
三、国际标准技术讨论实践经验分享

四、建议

ISO GOVERNANCE STRUCTURE



二、国际标准组织任职经验分享



ISO技术委员会

- 3'751** Technical bodies comprising:
3751个技术机构包括:
- 255** Technical Committees (TC)
255个技术委员会 (TC)
- 503** Sub-Committees (SC)
503个分技术委员会 (SC)
- 2'896** Working Groups (WG)
2896个工作组 (WG)

Over **100'000+ qualified experts** from Industry, Research institutes , Government authorities, Consumers etc come together as equal partners to develop a consistent multi-sector collection of globally relevant International Standards

来自生产工厂、研究机构、政府部门、用户等的超过**10万名资深**专家作为平等的合作伙伴聚集在一起，开发一个聚集多部门协调统一的全球化的国际标准。

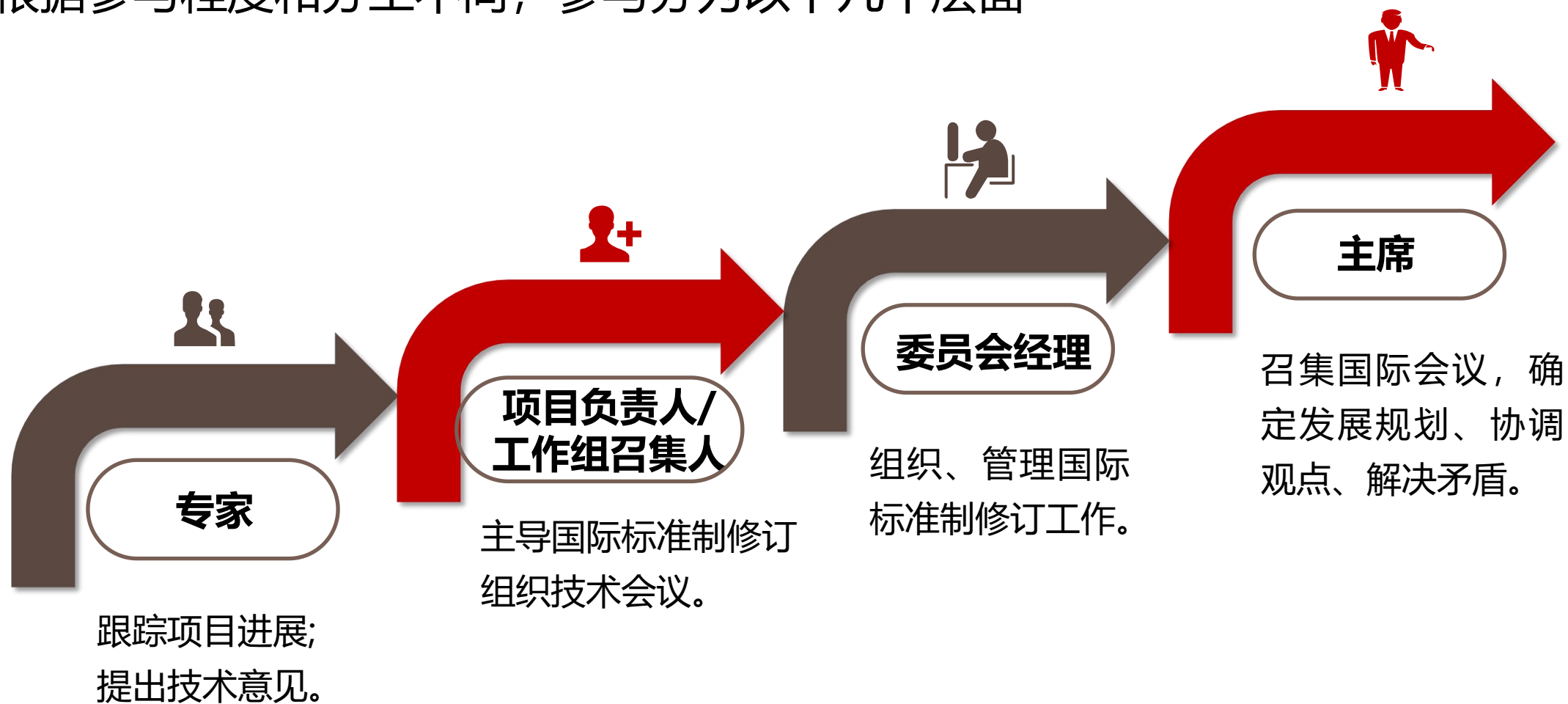
Note: Statistics as of 2021

注：统计数据截止到2021年中国钢铁工业协会

China Iron & Steel Association

二、国际标准组织任职经验分享

根据参与程度和分工不同，参与分为以下几个层面



二、国际标准组织任职经验分享

委员会经理

熟悉导则，提供工作程序支撑

2.3.5 Acceptance requires

- a) approval of the work item by a simple majority of the P-members of the technical committees voting — abstentions are excluded when the votes are counted; and
- b) a commitment to participate actively in the development of the project, i.e. to make an effective contribution at the preparatory stage, by nominating technical experts and by commenting on working drafts, by at least 4 P-members in committees with 16 or less P-members, and at least 5 P-members in committees with 17 or more P-members; only P-members having also approved the inclusion of the work item in the programme of work [see a)] will be taken into account when making this tally. If experts are not nominated on the form accompanying an approval vote, then the national body's commitment to active participation will not be registered and considered when determining if the approval criteria have been met on this ballot.



ISO/IEC Directives, Part 1
Procedures for the technical work —
Consolidated ISO Supplement —
Procedures specific to ISO

Directives ISO/IEC, Partie 1 — Procédures pour les travaux techniques — Supplément
ISO consolidé — Procédures spécifiques à l'ISO

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二、国际标准组织任职经验分享

委员会经理

熟悉导则，提供工作程序支撑

The proposal stage (clause 2.3) is not required for:

- the revision or amendment of an existing International Standard,
- the revision of an existing TS,
- the conversion of a TS or PAS to an IS,
- the conversion of a PAS to a TS.

However, the committee shall pass a resolution containing the following elements: 1) target dates, 2) confirmation that the scope will not be expanded, 3) the Convenor or Project Leader and 4) UN Sustainable Development Goals (SDGs, www.iso.org/SDGs). The committee shall also launch a call for Experts (Form 4 is not required).



ISO/IEC
Directives, Part 2
Principles and rules for the structure
and drafting of ISO and IEC documents

*Directives ISO/IEC, Partie 2
Principes et règles de structure et de rédaction des documents
1. IEC*

edition, 2021

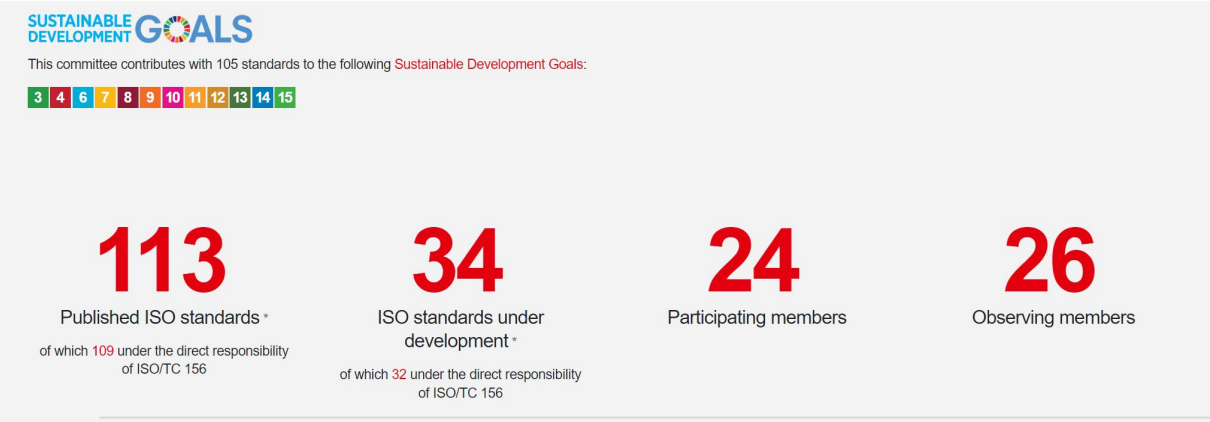
/IEC 2021

二、国际标准组织任职经验分享

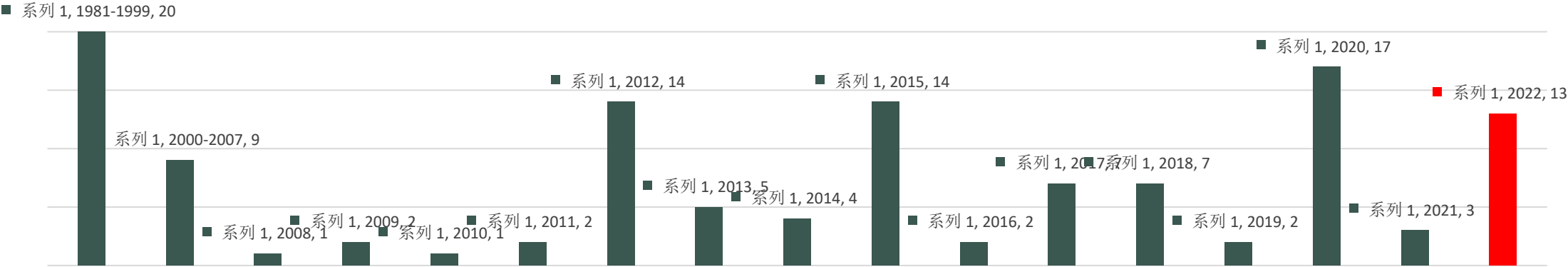
委员会经理

工作及时，掌握时间节点

ISO/TC 156
Corrosion of metals and alloys



Reference ↑	Title
ISO/TC 156/SC 1	Corrosion control engineering life cycle
ISO/TC 156/AG ⓘ	Advisory Group
ISO/TC 156/WG 1 ⓘ	Terminology
ISO/TC 156/WG 2 ⓘ	Environmentally assisted cracking
ISO/TC 156/WG 4 ⓘ	Atmospheric corrosion testing and classification of corrosivity of atmosphere
ISO/TC 156/WG 5 ⓘ	Intergranular corrosion
ISO/TC 156/WG 6 ⓘ	General principles of testing and data interpretation
ISO/TC 156/WG 7 ⓘ	Accelerated corrosion tests
ISO/TC 156/WG 9 ⓘ	Corrosion testing of materials for power generation
ISO/TC 156/WG 10 ⓘ	Cathodic protection of buried and immersed metallic structures
ISO/TC 156/WG 11 ⓘ	Electrochemical test methods
ISO/TC 156/WG 13 ⓘ	High temperature corrosion
ISO/TC 156/WG 14 ⓘ	Tribo-corrosion
ISO/TC 156/WG 15 ⓘ	Corrosion rates of the embedded steel reinforcement in concrete
ISO/TC 156/WG 16 ⓘ	Corrosion test method for disinfectant
ISO/TC 156/WG 17 ⓘ	Corrosion in industrial cooling water



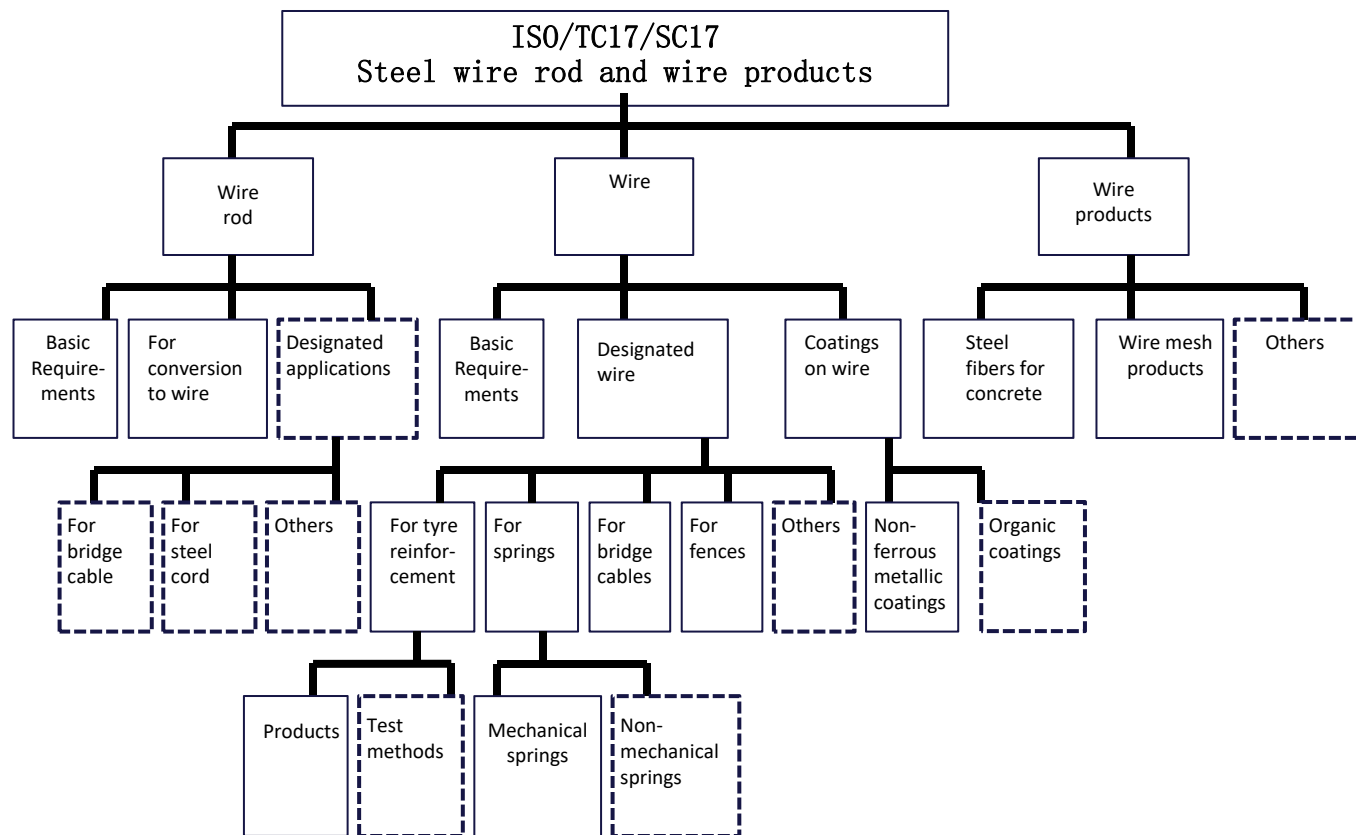
加强战略布局，提出发展方向

ISO/TC156 Corrosion of Metals and Alloys



- **Control Method for the Corrosion Rate of the Embedded Steel Reinforcement in Concrete Exposed to the Simulated Marine Environments**
- **Corrosion of Metals and Alloys–Corrosivity of Soil–Classification,determination and estimation**

加强战略布局，提出发展方向



Business Plan
Data:
Version:
Page:
ISO/TC 5
2017-07-17
Draft 1
6

STRATEGIC BUSINESS PLAN

ISO/TC 5

Ferrous metal pipes and metallic fittings

0 Executive summary

0.1 Business environment

Ferrous metal piping systems addressed by ISO/TC 5 and composed of steel and cast iron pipes, metal hoses, fittings and expansion joints are essential elements in piping systems for the supply of liquid and gaseous fuels, industrial plants and the infrastructure of urban environments and buildings where the systems are applied for supply of gas and water, discharge of sewage and waste.

ISO/TC 5 also covers the market of piping elements for mechanical application such as for machines, apparatus, general engineering purposes, scaffolding as well as consumer goods.

Metal tubes and piping systems are used in most industrial sectors and in all parts of the world. Consequently this market extends to all countries, and this requires the use of standardized products in order to permit easy international trade.

0.2 Benefits

Experts from countries worldwide interested in the work of ISO/TC 5 deliver the best knowledge and capability to assemble the best technical information and requirements in every aspect such as design, performance, test method, installation, etc. in order to assure reliability of the piping systems to their customers.

The foremost aim of ISO/TC 5 is to facilitate the exchange of goods and services through the elimination of technical barriers to trade.

0.3 Priorities

The main task of the TC is the management, coordination and supervision of the work so that it is brought to a successful rapid conclusion. The subcommittees work independently but maintain close contact with the Secretariat of the technical committee.

The committee and the subcommittees endeavour as far as possible to limit the options of their standardization work in order to let the users benefit from unequivocal solutions specified worldwide. Priorities of the drafts are decided by the subcommittees in line with the work in hand.

1 Introduction

1.1 ISO technical committees and business planning

The extension of formal business planning to ISO Technical Committees (ISO/TCs) is an important measure which forms part of a major review of business. The aim is to align the ISO work programme with expressed business environment needs and trends and to allow ISO/TCs to prioritize among different projects, to identify the benefits expected from the availability of

合理选择项目，发挥各方力量

Products

- EN 10255:2017 Non-alloy steel tubes suitable for welding and threading - Technical delivery conditions
- GB/T 34105-2017 Seamless steel tubes for ocean engineering structures

Methods

- ISO 10893 Non-destructive testing of steel tubes
- GB/T 25047 Metallic materials Tube Ring-expanding test
- GB/T 32976 Metallic materials Tubes Transverse bending test

Other Areas

- ISO/CD 21051 **Construction and installation** of ductile iron pipeline system
- ISO/DIS 21053 **Life cycle** analysis and recycling of ductile iron pipes for water applications
- ISO/WD 21799 **External corrosion protection system** for Ductile Iron Pipes and Fittings

	SC1	SC2	SC5	SC10	SC11	SUM
Before 1998	13	1	8	7	1	30
1999~2008	0	4	4	0	3	11
After 2008	4	12+4	1	1	1+1	19+5
SUM	17	17+4	13	8	5+1	60+5

二、 国际标准组织任职经验分享

主席

协调各方观点， 解决技术矛盾



《桥梁缆索用热镀锌及锌铝合金钢丝》关键技术问题的解决：
欧美体系：有良好的松弛性能，不要求高扭转性能考核。
新日铁体系：考核钢丝高扭转性的来保证“延性”，而不考核钢丝的松弛性能。
中国体系：以国标为基础，结合实践对比检测结果，按照强度分档分级考核松弛与扭转性能

检验报告

TEST REPORT

NO.2017060717

产品(试样)名称: 热镀锌及锌铝合金钢丝

规格: 1000mm

生产单位: 中国铁建大桥工程局集团有限公司

检验日期: 2017年6月7日

检验地点: 中国铁建大桥工程局集团有限公司

检验人员: 李长松

审核人员: 李长松

批准人员: 李长松

国家钢丝绳产品质量监督检验中心

National Steel wire Rope Quality Supervision & Inspection Centre

Table 1 Requirements of torsion numbers for suspension bridges and cable stayed bridges in the last 20 years

Name of Bridge	Country	Type of Bridge	Year of Completion	Main Span (m)	Densile Strength (MPa)	Wire Dia (mm)	Torsion Number (times)	Remarks
1 Bridge Kullen Bridge (High Coast Bridge)	Sweden	SB	1987	1,214	1,600	16mm	Unstayed	
2 Hong Kong Bridge	Hong Kong	SB	1987	1,217	1,510	5.38	Unstayed	
3 Tsukuba Bridge	Japan	SB	1988	720	1,510	5.30	14	
4 Great Belt East Bridge	Denmark	SB	1988	1,624	1,510	5.38	Unstayed	
5 Asama Bridge	Japan	SB	1988	1,081	1,710	5.15	14	
6 Taisei Bridge	Japan	CSB	1988	690	1,510	7.30	12	
7 Kumakura 1st Bridge	Japan	SB	1988	600	1,710	5.18	14	
8 Kumakura 2nd Bridge	Japan	SB	1988	1,018	1,710	5.15	14	
9 Kumakura 3rd Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
10 Kumakura 4th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
11 Kumakura 5th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
12 Kumakura 6th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
13 Kumakura 7th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
14 Kumakura 8th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
15 Kumakura 9th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
16 Kumakura 10th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
17 Kumakura 11th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
18 Kumakura 12th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
19 Kumakura 13th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
20 Kumakura 14th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
21 Kumakura 15th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
22 Kumakura 16th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
23 Kumakura 17th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
24 Kumakura 18th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
25 Kumakura 19th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
26 Kumakura 20th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
27 Kumakura 21st Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
28 Kumakura 22nd Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
29 Kumakura 23rd Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
30 Kumakura 24th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
31 Kumakura 25th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
32 Kumakura 26th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
33 Kumakura 27th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
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39 Kumakura 33rd Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
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44 Kumakura 38th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
45 Kumakura 39th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
46 Kumakura 40th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
47 Kumakura 41st Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
48 Kumakura 42nd Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
49 Kumakura 43rd Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
50 Kumakura 44th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	
51 Kumakura 45th Bridge	Japan	SB	1988	1,018	1,710	5.30	14	

GB/T 17101—2008

表 2 钢丝力学性能

强度级别 ^a R_m /MPa	规定非比例延伸强度 $R_{p0.2}$ /MPa		断后伸长率 ($L_0=250$ mm) $A/\%$ 不小于	应力松弛性能	
	无松弛或 I 级松弛要求 不小于	II 级松弛要求 不小于		初始载荷 (公称载荷)/ %	1 000 h 后应力松 弛率 $r/\%$ 不大于
				对所有钢丝	I 级松弛 II 级松弛
1 670	1 340	1 490	4.0	70	7.5 2.5
1 770	1 420	1 580			
1 860	1 490	1 660			
1 670	1 490	1 580	4.0	70	7.5 2.5
1 770	1 580	1 660			

钢丝公称面积确定其载荷值,公称面积应包括镀锌层厚度在内。
强度级别值为实际允许抗拉强度的最小值。
对无松弛要求和 I 级松弛要求的 5 mm 系列钢丝,标距为 $100d_n$ 的扭转次数应不小于 8 次。
钢丝的弹性模量应为 $(2.0 \pm 0.1) \times 10^5$ MPa。
供方在保证 1 000 h 松弛性能合格的基础上可用不少于 120 h 的测试数据推算 1 000 h 的松

7.2.3 Mechanical and coating property

The mechanical and coating properties of the steel wires shall conform to Table 2.

Table 2 — Typical diameter, mechanical and coating properties of steel wires

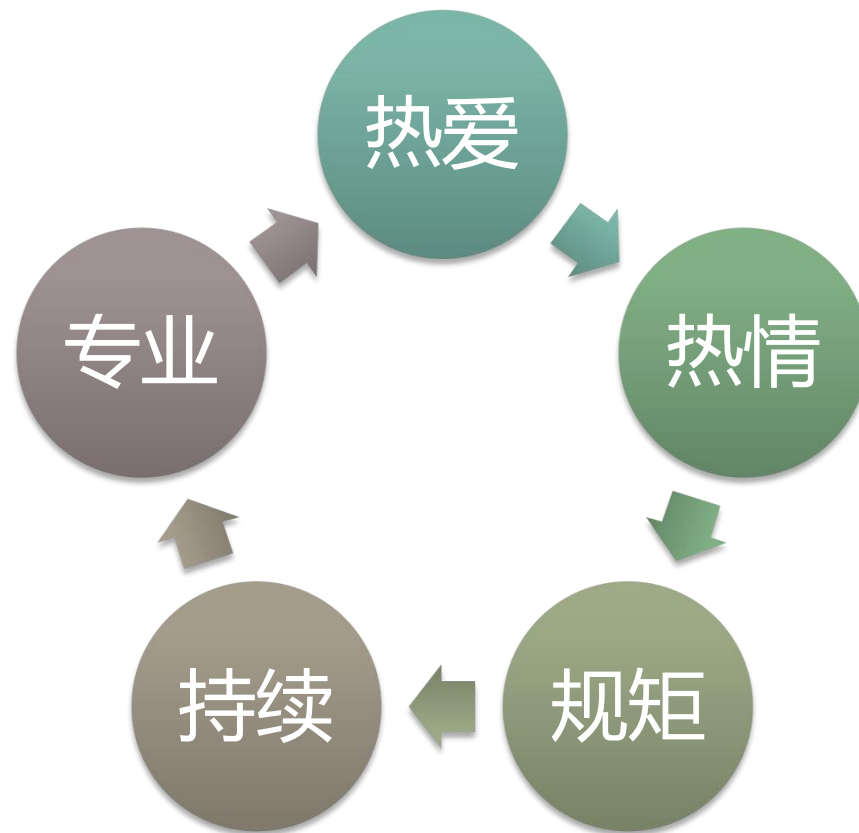
Property	Nominal tensile strength grade, MPa				
	1 570	1 670	1 770 ^c	1 860 ^c	1 960 ^c
Typical nominal diameter d	5,0 mm and 7,0 mm				
Ultimate tensile strength R_m , MPa ^a	$1 570 \leq R_m < 1 770$	$1 670 \leq R_m < 1 870$	$1 770 \leq R_m < 1 970$	$1 860 \leq R_m < 2 060$	$1 960 \leq R_m < 2 160$
0,2 % offset proof strength $R_{p0.2}$, MPa (minimum) ^{a,b}	1 180	1 250	1 330	1 400	1 470
Elongation after fracture A , % (minimum)	4,0 (on a gauge length L_0 of 250 mm)				
Modulus of elasticity E , GPa	200 \pm 10				

Table 2 (continued)

Property			Nominal tensile strength grade, MPa				
			1 570	1 670	1 770 ^c	1 860 ^c	1 960 ^c
Number of torsions (minimum)	5,0 mm	On a length of 100 d	14	14	12	10	8
	7,0 mm		12	12	10	8	6
Ductility wrapping			No fracture after 8 turns over a mandrel of diameter 3 <i>d</i>				
Mass of coating (minimum)			300 g/m ²				
Adhesion of coating			No peel-off after 8 turns over a mandrel of diameter 5 <i>d</i>				
^a Tensile strength and proof strength shall be calculated from the nominal cross-sectional area.							
^b The minimum proof strength shall be 0,75 × nominal tensile strength grade, rounded to the nearest 10 MPa.							
^c A higher number of torsions can be agreed upon between manufacturer and customer.							

二、国际标准组织任职经验分享

发挥团队优势，建立国际标准化人才队伍



建设国内国际相结合，技术、规则、外语相结合的专家队伍。

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二、国际标准组织任职经验分享

三、国际标准技术讨论实践经验分享

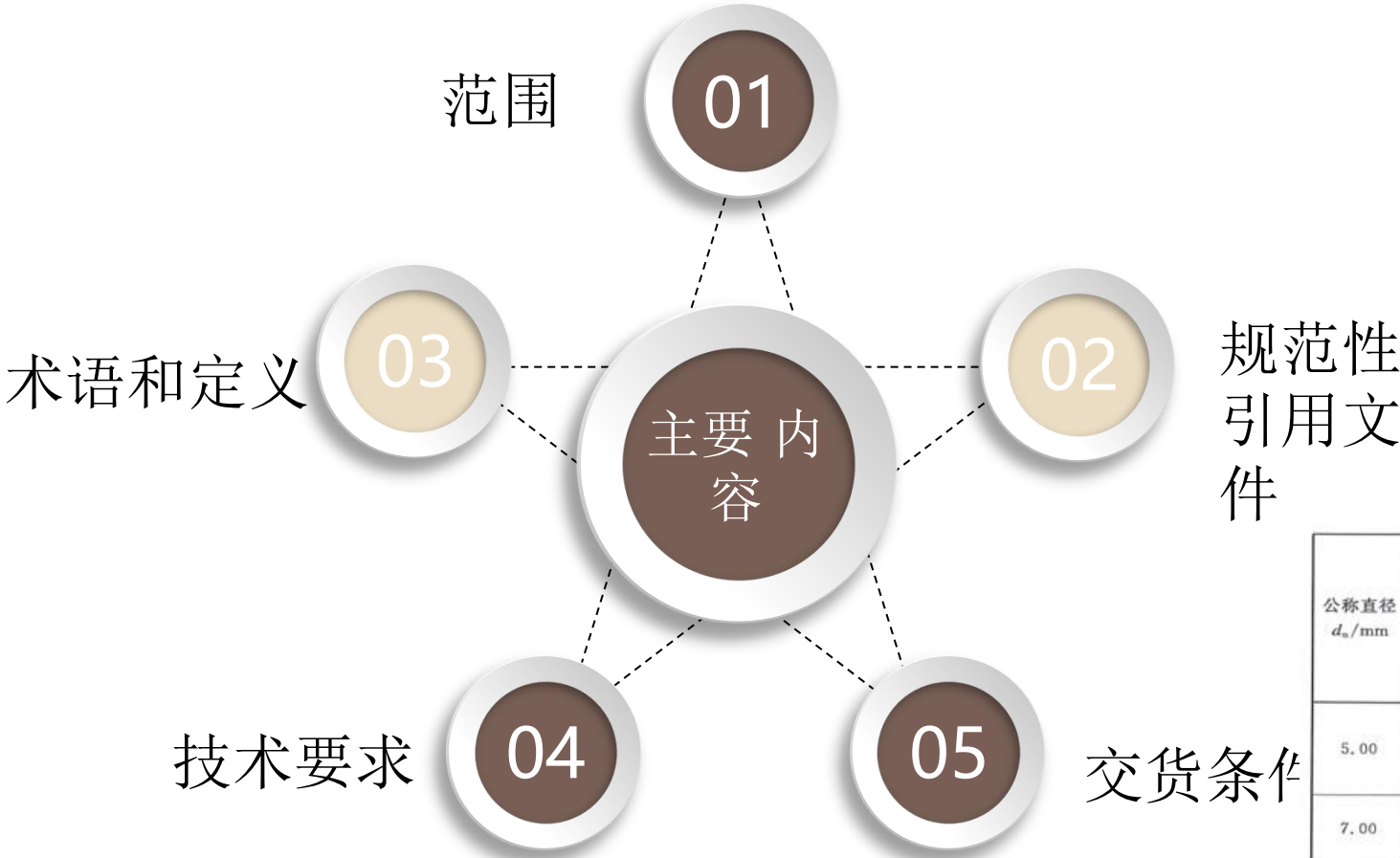
四、建议

三、国际标准制技术讨论实践经验分享

熟悉导则，了解基本的程序和标准化的语言；
与科研结合，提供详实的数据和基础材料支撑；
充分理解协商一致的基本原则；
调动各方面的积极性，特别是企业的积极性；
发挥团队作用，建立支撑组；
充分的准备，合理利用时间规则。

三、国际标准制技术讨论实践经验分享

详实的数据和基础材料支撑



ISO 19203-2018

GB/T 17101-2008

GB/T 17101—2008

表 2 钢丝力学性能

公称直径 d_n /mm	强度级别* R_m /MPa	规定非比例延伸强度 $R_{p0.2}$ /MPa		断后伸长率 ($L_0=250$ mm) $A/\%$ 不小于	应力松弛性能		
		无松弛或 Ⅰ级松弛要求 不小于	Ⅱ级松弛要求 不小于		初始载荷 (公称载荷)/ %	1 000 h 后应力松 弛率 $r/\%$ 不大于	
					对所有钢丝	Ⅰ级松弛	Ⅱ级松弛
5.00	1 670	1 340	1 490	4.0	70	7.5	2.5
	1 770	1 420	1 580				
	1 860	1 490	1 660				
7.00	1 670		1 490	4.0	70	7.5	2.5
	1 770		1 580				

按钢丝公称面积确定其载荷值,公称面积应包括锌层厚度在内。

* 强度级别值为实际允许抗拉强度的最小值。

按钢丝公称面积确定其载荷值,公称面积应包括锌层厚度在内。

* 强度级别值为实际允许抗拉强度的最小值。

7.2.3 对无松弛要求和 I 级松弛要求的 5 mm 系列钢丝,标距为 $100d_n$ 的扭转次数应不小于 8 次。

三、国际标准制技术讨论实践经验分享

详实的数据和基础材料支撑

Table 3 Mechanical Property of steel wires						
Nominal tensile strength grade MPa						
	1570	1670	1770	1860	1960	
Typical diameter d mm	5.00/7.00					
Tensile strength Rm MPa	1570≤Rm<1770		1670≤Rm<1870		1770≤Rm<1970	1860≤Rm<2060 1960≤Rm<2160
Proof Strength Rp0.2 MPa	Min. 1180	Min. 1250	Min. 1330	Min. 1400	Min. 1470	
Elongation A %	Min. 4.0 (L0=250mm)					
E modulus MPa	(2.0±0.1)×10 ⁵ , if requested,					
Number of torsions	Min. 14/12 turns x 100d					
Wrapping test	No fracture at 8 turns x 3d					
Mass of coating	Min. 300g/m ²					
Adhesion of coating	No peel off at 8 turns x 5d					
Uniformity of coating	Min. 4 times at 60sec/time dipping, if requested					
Tensile fatigue test	No breakage at 0.45Fm, 2ΔFm/Sn=360MPa, n=2.0x10 ⁶ , if requested					
Note	aProof strength Rp0.2: 0.75 x Nominal tensile strength and rounded to the nearest 10MPa bTensile strength and proof strength shall be calculated from the cross-sectional area corresponding to the nominal diameter. The result shall be rounded to the nearest 1 MPa. cif relaxation property is required for the structures those requirements should be specified by considering the required design conditions between designer or purchaser and manufacturer.					

三、国际标准制技术讨论实践经验分享

产品



INTERNATIONAL
STANDARD

ISO
5003

Second edition
2016-03-01

Flat bottom (Vignole) railway rails
43 kg/m and above

Rails Vignole de masse supérieure ou égale à 43 kg/m

Reference number
ISO 5003:2016(E)

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- ISO 5003: 2016
- 铁路用热轧钢轨

- Harmonize and unify main technical indicators of various countries
- Bring steel rails for high-speed railways into standard
- Bring Chinese unique grades U71Mn, U75V into standard

- 协调统一各国主要技术指标
- 纳入高速铁路用钢轨
- 纳入我国特有牌号U71Mn、U75V

三、国际标准制技术讨论实践经验分享

➤ 钢轨国内外标准调研报告

- 收集、整理、翻译国内外钢轨产品标准、断面图，共计中国、日本、美国、俄罗斯等7个国家，国际铁路联盟、CEN/TC256 “铁路” 2个组织的27个标准。
- 通过对比分析国内外钢轨发展现状及标准中的主要技术指标，为合理设置技术指标，争取标准立项打下坚实基础。

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三、国际标准制技术讨论实践经验分享

标准号	牌号	化学成分			P
		C	Si	Mn	
中国 GB2585-81	U71	0.64-0.77	0.13-0.28	0.60-0.90	0.040
	U74	0.67-0.80	0.13-0.28	0.70-1.00	
	U71Cu	0.65-0.77	0.15-0.30	0.70-1.00	
	U71Mn	0.65-0.77	0.15-0.35	0.70-1.50	
	U70MnS	0.65-0.75	0.15-0.15	0.95-1.15	
本送审稿	项目	GB2585-81	本送审稿	铁道部 200km客 运专线	EN 13
日本 JIS E1101- 1993	适用范围	铁路用公称 重量38~50 kg/m钢轨	用连铸坯生产 的37kg/m以上 热轧钢轨（不 包括客运专线 和高速铁路用 轨）不适用全 长热处理钢轨。	时速200公里客 运专线用60kg/m 钢轨	适用于46k 和高速 底对
	制造	模铸	连铸坯	连铸坯、模铸	连铸坯
	氧含量 不大于	未规定	30×10^{-6}	20×10^{-6}	20×10^{-6}
美国 ASTMA1- 1992 ISO5003	氢含量 不大于	没有要求	2.5×10^{-6}	钢水 2.5×10^{-6} 成品 1.5×10^{-6}	3.0×10^{-6} 2.5×10^{-6}
	检验项目	化学成分、 低倍、白点、 落锤、拉力、 尺寸、表面、 硬度	化学成分、拉 伸、显微组织、 脱碳层、非金 属夹杂物、落 锤、超声波探 伤、表面、尺 寸、残余应力、 断裂韧性、疲 劳、氧含量、 氢含量、低倍	化学成分及残留 元素、氢含量、 总氧含量、拉 伸、硬度、显微组织、 脱碳层、非金属 夹杂物、低倍、 落锤、尺寸、表 面、超声波探伤、 残余应力、断裂 韧性、疲劳、疲 劳裂纹扩展速率	断裂韧性、疲 劳率、延伸、断 裂成分、显微组 织、表面、超声
UIC360-86					

项目			GB258 5-81	本送审稿 50、 60、 75	38、 43	铁道部 200km 客运专线	铁 道 部 300km 客 运 专线	Pr-EN Mm	X	Y	Z	UIC360
钢轨断面	轨头宽度		±0.5	±0.5	±0.5	±0.5	±0.5		±0.5	+0.6 -0.5	+0.65 -0.5	±0.5
	轨腰厚度		+1.0 -0.5	+1.0 -0.5	+1.0 -0.5	+1.0 -0.5	+1.0 -0.5		+1.0 -0.5	+1.0 -0.5	+1.0 -0.5	+1.0 -0.5
	轨底宽度 (WF)		+1.0 -2.0	+1.5 -1.0	+1.0 -1.5	±1.0	±1.0		±1.0	+1.5 -1.0	+1.7 -1.0	<150 ±1.0 150 ≤ WF<160 +1.0 -1.1
	轨底边缘厚度		—	+0.75 -0.5	—	+0.75 -0.5	+0.75 -0.5	—	+0.75 -0.5	+0.75 -0.5	+1.0 -0.5	
	鱼尾板高度 ----			+0.6 -0.5	±0.6	±0.6	±0.6	<16 5 ≥ 16 5	±0.5 ±0.6	±0.5 ±0.6	±0.5 ±0.6	H<165 +0.5 -0.5 165 ≤ H ≤ 180 +0.6 -0.6
	轨高 (H)		+0.8 -0.5	±0.6	+0.7 -0.6	±0.6	±0.6	<16 5 ≥ 16 5	±0.5 ±0.6	+0.5 -1.0 -1.1	+0.5 -1.3 -1.4	H165 +0.5 - 0.5 165 ≤ H ≤ 180 +0.6 -0.6
外形	端面斜度	垂直	1.0			距轨端1~2.5m≤0.4/1.5m		距轨端1~3m ≤0.3/2m	±0.6	±0.6	±0.6	+0.6 -0.6
		水平		≤0.8	≤1.0	距轨端1~2.5m≤0.6/1.5m		距 轨 端 1~3m ≤0.6/2m				
	端部弯曲	向上	0.5 未安机 矫直，弯 曲不大 于 向上： 0.8 向下： 0.2 左 右： 0.8	≤0.5	≤0.8	距轨端0~1.5m 部位	≤0.5/1.5m	0~1m： ≤0.3/1m 0~2m： ≤0.4/2m	0.5/1.5m			0.70
		向下		≤0.2	≤0.2		≤0.2/1.5m	0.2/2m				
		左右		≤0.5	≤0.5		≤0.7/1.5m	0~1m： ≤0.4/1m 0~2m： ≤0.6/2m				
	全长扭转				≤全长的 1/1000	≤0.45/1000		≤0.45/1000				
	全长均匀弯曲				≤全长的 0.5/1000	弯曲半径R>1500m		弯曲半径 R>1500m	弯曲半径R>1500m	弯曲半径R>1500m		
	断面 不对称	轨头	0.5	±1.2 没有能 轧机可 按 ±1.5	±1.5	±1.2	±1.2		±1.2	±1.2	±1.2	<150 ±1.2 150 ≤ WF<160 ±1.5
轨底		1.0										
鱼尾板安装斜度				±0.6	+1.0 -0.5	+1.0 -0.5	+1.0 -0.5		±0.35	±0.35	±0.35	+1.0 -0.5



三、国际标准制技术讨论实践经验分享

善于利用规则，善于建立规则

推进过程中:

- 8次会议工作组
- 100多条技术意见
- 11个成员国数次谈判
- 3轮集体投票
- 17项重大修改

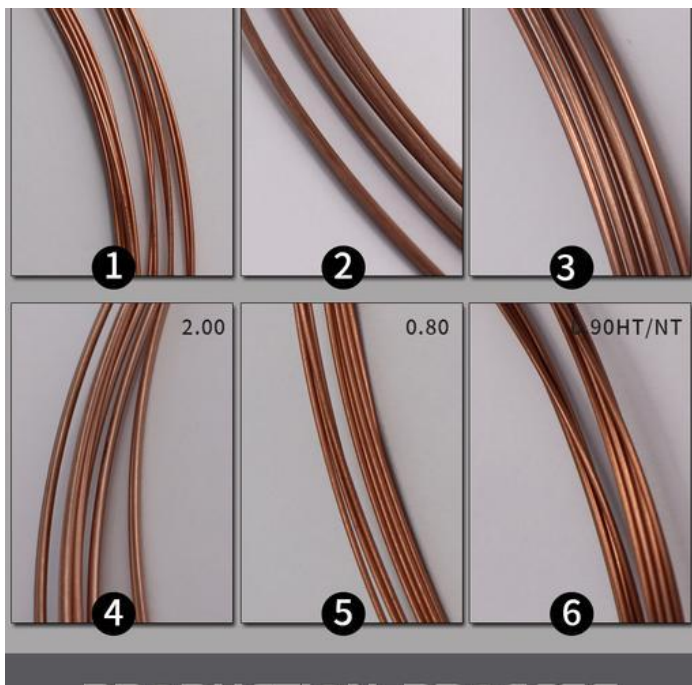
DIS 投票结束后仍然
收到86条技术意见

Template for comments and secretariat observations					Date: 2015-03-23	Document: ISO/TC17/SC15 N124	Project: ISO/DIS 5003
MB/ NC ¹	Line number	Clause/ Subclause	Paragraph/ Figure/ Table/	Type of comment ²	Comments	Proposed change	Observations of the secretariat
JP No.01		Title		ed	The original title should not be changed without proper reason. The term of "flat bottom railway rails" has been used in ISO 5003 for a long period. Changing the term will confuse the user.	Change the text as follows: "Flat bottom railway rails 43 kg/m and above" or "Flat bottom railway rails (Vignole railway rails) 43 kg/m and above"	Accepted with the following change: "Flat bottom (Vignole) railway rails 43 kg/m and above"
GB No.02		1.	Para 1, Last word	Ed	Add "s" to "railway"	Amend	Accepted
GB No.03		1.	Para 3	Ed	Hyphens missing	Say "non-heat-treated" and "heat-treated".	Accepted
GB No.04		3.7	Line 1	Ed	"for diminishing" should be "for reducing"	Amend	Accepted
GB No.05		3.7	Note 2	Ed	Hyphen missing from "sub critical"	Amend	Accepted
AT No.06	page 2	4	4a	te	The rail profile (by referring to any other standard or submitting a drawing) Because this standard does not define profiles, it would be clearer for the manufacturer if the purchaser submits a drawing. e.g. for the profile UIC60, several drawings do exist	The rail profile and the profile tolerances as defined for the dimensions listed in Table 2a (by submitting a drawing)	Accepted with the following changes: The rail profile (by submitting a drawing) and the profile tolerances as defined for the dimensions listed in Table 2a.
AT No.07	page 2	4	4c	te	To define the profile tolerances of table 2 identify the profile class (X or Y)	The profile class X or Y (see table 2)	Rejected because the change in comment AT No.06 includes tolerances. Also delete the requirement show in c)
JP No.08		4 e)		ed	In, ASTM E 45 and ISO 4967, the method to determine the parameters or rating limit is the same. Therefore the acceptance criteria should also be the same.	Change the text of e) as follows: "e) the non-metallic inclusion determination method (see 7.6)"	Rejected because JP No.52 was rejected.
<div><div>1 MB = Member body / NC = National Committee (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by **)</div><div>2 Type of comment: ge = general te = technical ed = editorial</div><div>ISO/REC electronic balloting commenting template/version 2012-03</div></div>							



三、国际标准制技术讨论实践经验分享

善于利用规则，善于建立规则



[ISO 16124:2015](#) Steel wire rod — Dimensions and tolerances

[ISO 23475-1:2021](#) Testing method for steel tyre cord — Part 1: General requirements

[ISO/AWI 23475-2](#) Testing method for steel tyre cord — Part 2: Adhesion test

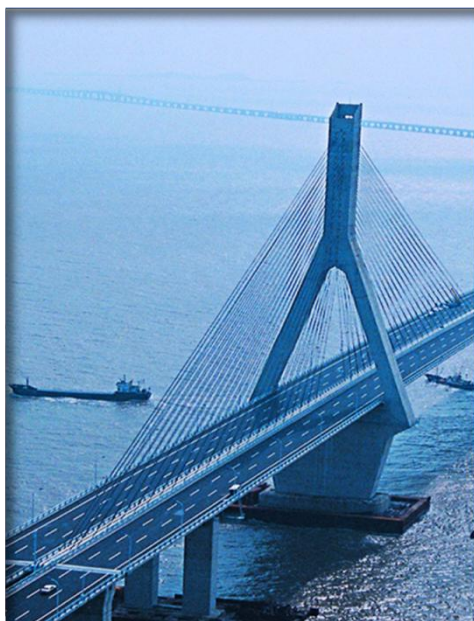
三、国际标准制技术讨论实践经验分享

项目的选择：符合利益相关方的关注点；符合委员会发展方向。



**Key areas
重点关注**

Areas concerned by
national policy
国家政策重点关注领域



**Engineering and
equipment supporting
工程、装备配套**

Major projects and
supporting equipment
重大工程、装备配套



**Method extension
方法延伸**

Advanced product
matching method
先进产品配套方法



**Application extension
应用延伸**

Marine engineering,
electricity, packaging...
海工、电力、包装。。。

三、国际标准制技术讨论实践经验分享

"上下游协同发展，带动产品、装备、工程“走出去”



四、国际标准制修订程序及要求

加强战略布局，引领标准高质量发展

Undertake secretariats

各国高度重视
(ISO/ TC17/ SC12)



Seek new areas

积极寻求新领域、
交叉领域（电工钢）

Propose new work items

结合国家相关政策，围绕新材料和技术创新提出项目、固化成果
(钢铁产品环境绩效指数计算方法、消毒剂国际工作组)



INTERNATIONAL
STANDARD

ISO
3651-3

First edition
2017-05

**Determination of resistance to
intergranular corrosion of stainless
steels —**

**Part 3:
Corrosion test for low-Cr ferritic
stainless steels**

*Détermination de la résistance à la corrosion intergranulaire des
aciers inoxydables —*

*Partie 3: Essai de corrosion pour les aciers inoxydables ferritiques à
faible teneur en chrome*

Reference number
ISO 3651-3:2017(E)

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- ISO 3651-3: 2017
- 低铬铁素体不锈钢晶间腐蚀

- 完善体系
- 促进铁素体不锈钢出口贸易

- ISO 630-3:2021 结构钢 第3部分：细晶粒结构钢交货技术条件



- 本标准的修订与我国在**俄罗斯亚马尔液化天然气项目**的落成同步开展，新标准纳入我国优势牌号，新增-60℃冲击性能F质量等级要求，按本标准技术要求生产的结构钢已应用在北极圈内的世界级天然气项目。
- 本标准的发布，扩大了**我国在结构钢产品和国际标准的优势地位**。新标准将为我国优势产品的推广和应用奠定了基础，助力我国结构钢产品出口。



“冰上丝绸之路”的重要支点
俄罗斯亚马尔液化天然气项目

三、国际标准制技术讨论实践经验分享



Metal oxide anode is a key material in cathodic protection and anti-corrosion, electrolytic seawater to prevent marine organisms from fouling and adhesion, and electrolytic ballast water treatment systems for ships

金属氧化物阳极是阴极保护防腐蚀、电解海水防海生物污损附着、电解法船舶压载水处理系统中的关键核心材料

INTERNATIONAL STANDARD
ISO 19097-1
First edition
2018-02

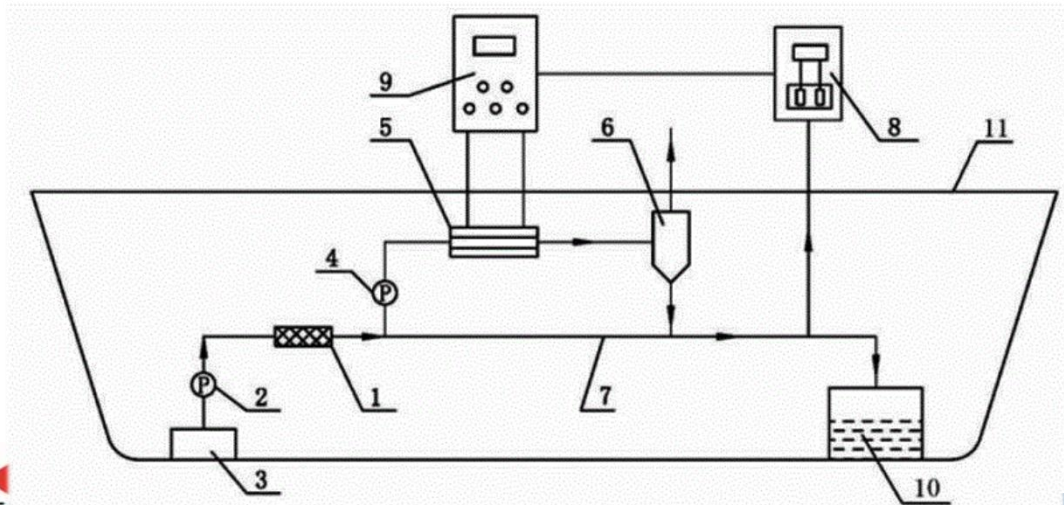


Accelerated life test method of mixed metal oxide anodes for cathodic protection —
Part 1:
Application in concrete
Méthode d'essai accéléré de durabilité des anodes à oxydes métalliques mixtes pour la protection cathodique —
Partie 1: Application dans le béton



• ISO 19097系列

• 阴极保护用金属氧化物阳极加速寿命试验方法



三、 国际标准制技术讨论实践经验分享

海工、 电力、 包装

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INTERNATIONAL
STANDARD

ISO
21062

First edition
2020-05

Corrosion of metals and alloys —
Determination of the corrosion rates
of embedded steel reinforcement in
concrete exposed to simulated marine
environments

Corrosion des métaux et alliages — Détermination des vitesses de
corrosion de l'acier encastrés simulée de l'armature dans le béton
exposé à l'environnement marin

ISO 21062: 2020

金属和合金的腐蚀 模拟
海洋环境混凝土结构钢筋
腐蚀速率测定

ISO

Reference number
ISO 21062:2020(E)

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ISO

N 974

ISO 24259

包装用钢带

Form 6: Result of voting on New Work Item Proposal

To be completed by the secretariat and sent to the ISO Central Secretariat and to all P- and O-members of the TC or SC concerned, with a copy to the TC secretariat in the case of a subcommittee.

Please attach the results of the NWIP ballot from CIB to this form

ISO/TC 122 Packaging

N 974

Title:

English title:

Steel Strapping for Packaging

French title:

Titre manque

Results (the compilation of results is given as an annex)

The following criteria for acceptance have been met:

☒ Approval by a 2/3 majority of the voting P-members; and

☒ a commitment to participate actively in the development of the project by at least 4 P-members in committees with 16 or less P-members and at least 5 P-members in committees with 17 or more P-members (r ISO/IEC Directives, Part 1 clause 2.3.5) and have nominated an expert

☒ Justification statements have been checked (all negative votes must be accompanied by a statement justifying the decision, or they shall not be counted. See ISO/IEC Directives Part 1, clause 2.3.4)

In light of results, the proposal is therefore:

☒ Approved (all approval criteria met) and the project will be registered:

☒ as new project in the committee's work programme (stage 20.00)

☐ as a Working Draft (WD – stage 20.20)

☐ as a Committee Draft (CD – stage 30.00)

☐ as a Draft International Standard (DIS – stage 40.00)

☐ Disapproved (one or more approval criteria not met)

(note that if no option is selected, the default will be abandoned)

☐ The draft will be registered as a preliminary work item (stage 00.60)

☐ Abandoned.

ISO

ISO 5156

金属和合金的腐蚀 消
毒剂腐蚀试验方法

Form 6: Result of voting on New Work Item Proposal

Date: 2020-06-25

ISO/TC 156
N 6775

Title of TC/SC concerned:

Corrosion of metals and alloys

To be completed by the secretariat and sent to the ISO Central Secretariat and to all P- and O-members of the TC or SC concerned, with a copy to the TC secretariat in the case of a subcommittee.

Please attach the results of the NWIP ballot from CIB to this form

ISO/TC 156

N 6775

Circulation

2020-04-01

Deadline

2020-06-25

Title:

English title:

Corrosion of metals and alloys- Corrosion test method for disinfectant

French title:

Titre manque

Results (the compilation of results is given as an annex)

The following criteria for acceptance have been met:

☒ Approval by a 2/3 majority of the voting P-members; and

☒ a commitment to participate actively in the development of the project by at least 4 P-members in committees with 16 or less P-members and at least 5 P-members in committees with 17 or more P-members (r ISO/IEC Directives, Part 1 clause 2.3.5) and have nominated an expert

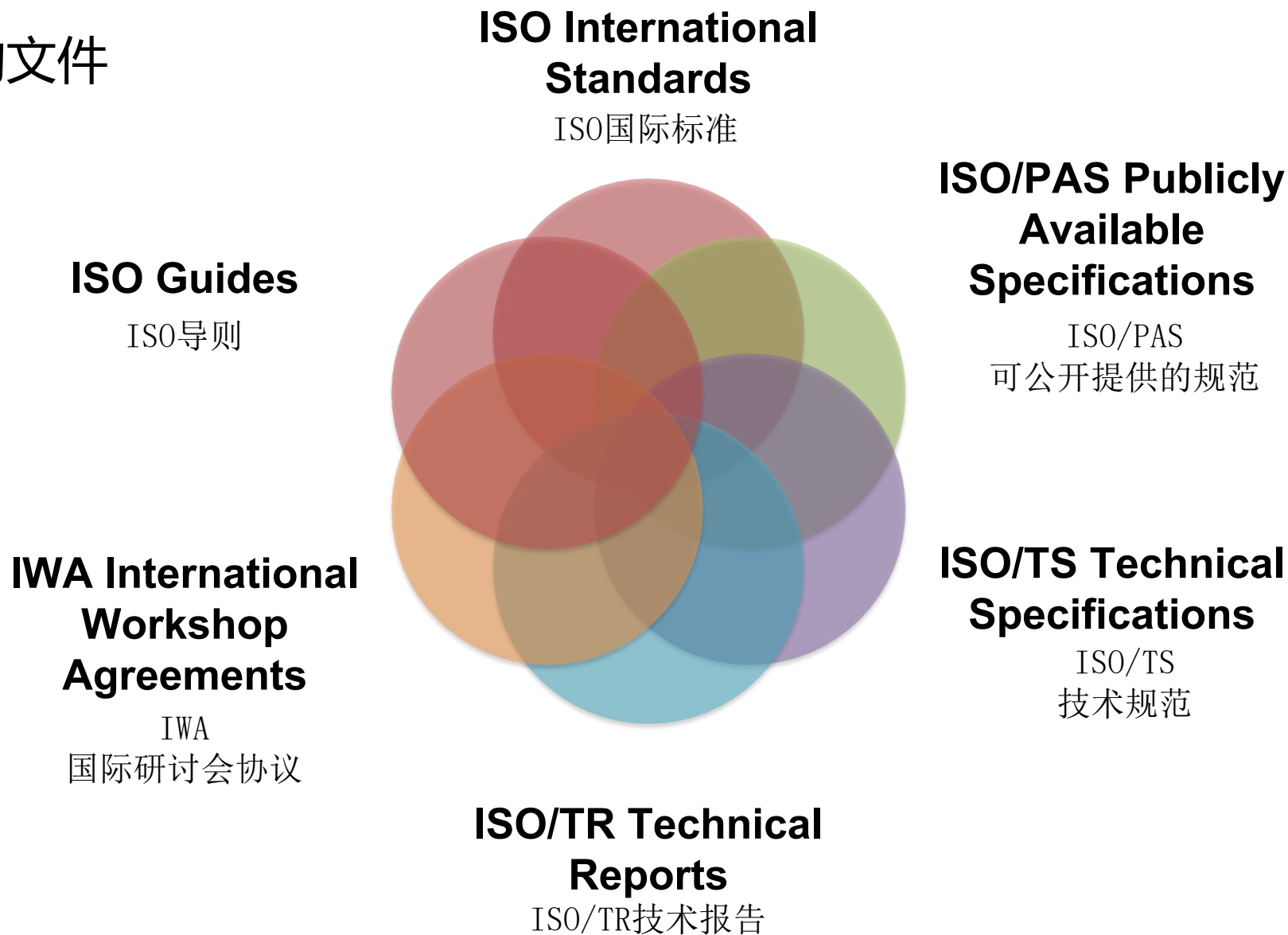
☒ Justification statements have been checked (all negative votes must be accompanied by a statement justifying the decision, or they shall not be counted. See ISO/IEC Directives Part 1, clause 2.3.4)

FORM 6 – Result of voting on NWIP

Version 02/2019

三、国际标准制技术讨论实践经验分享

选择合适的文件



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四、建议



可持续发展目标

1 无贫穷



2 零饥饿



3 良好
健康与福祉



4 优质教育



5 性别平等



6 清洁饮水和
卫生设施



7 经济适用的
清洁能源



8 体面工作和
经济增长



9 产业、创新和
基础设施



10 减少不平等



11 可持续
城市和社区



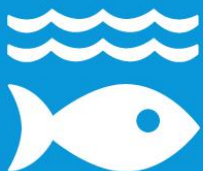
12 负责任
消费和生产



13 气候行动



14 水下生物



15 陆地生物



16 和平、正义与
强大机构



17 促进目标实现的
伙伴关系



四、建议

国际形势变化对标准国际化提出新要求

1.第四次工业革命加速标准与科技的融合

技术标准研制与科技创新同步

01

开始制定标准的时间越来越提前

02

标准与专利紧密结合

03

标准的数字化转型

04

四、建议

2.标准日益成为全球治理体系组成部分

标准在促进全球经济和社会发展
推动全球治理优化与改善方面扮演着独特的角色



标准成为国际贸易的基石和通用技术语言



标准助力全球可持续发展。



ISO标准推动社会治理优化及国际对接。



治理类国际标准

ISO18000 安全及卫生管理系统验证

ISO 37000 组织治理指南

ISO 27001 安全管理体系

ISO 37120 城市可持续发展指标体系

ISO18000 供应链安全管理

ISO 14000 环境管理系列标准

ISO 31000 风险管理体系

ISO/IEC 38500 信息技术治理

四、建议

3.新产业、新业态催生标准化新需求

标准化必须快速匹配产业发展
足市场需求和技术变化

- 智能制造
- 人工智能
- 大数据
- 区块链
- 网络安全
- 无人机
- 机器人
- 自动驾驶
- 纳米技术
- 智能交通
- 智能办公
- 智能医疗
- 共享经济
- 电子商务
- 养老
- 金融
- 教育
- 旅游



四、建议

明确国际标准化工作重点和委员会发展方向。

明确战略

用基础数据和扎实的资料说话。

扎实基础

掌握ISO/IEC导则和国际惯例。

熟悉规则

推进各方合作，采取多种方式实质性推动。

放开眼界

感谢聆听！