STRATEGIC BUSINESS PLAN
ISO/TC 35
Paints and varnishes

EXECUTIVE SUMMARY

The scope of ISO/TC 35 is standardization in the field of paints, varnishes and related products.
The global paint market is a mature market with a sales volume of around USD 175 billion in 2021. Some 40 % of this turnover is coming from the waterborne segment.

This technical committee provides an umbrella under which all, with knowledge on paints and its application, can meet for efficient standardization and coordination. To maintain and optimize a set of coherent standards ISO/TC 35 cooperates closely with the European technical committee for paints and varnishes (CEN/TC 139) and with ASTM D01 ‘Paint and Related Coatings, Materials, and Applications’.

Important innovation drivers for the industry are changes in legislation concerning environmental, health and safety and overall efficiency and performance improvement.

Main challenges for ISO/TC 35 are to establish involvement from all major stakeholders and the availability of resources (experts, secretarial support) to do a proper job.

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 International Standards, and to ensure adequate resources for projects throughout their development.

1.2 International standardization and the role of ISO

The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade.

Three bodies are responsible for the planning, development and adoption of International Standards: ISO (International Organization for Standardization) is responsible for all sectors excluding Electrotechnical, which is the responsibility of IEC (International Electrotechnical Committee), and most of the Telecommunications Technologies, which are largely the responsibility of ITU (International Telecommunication Union).

ISO is a legal association, the members of which are the National Standards Bodies (NSBs) of some 164 countries (organizations representing social and economic interests at the international level), supported by a Central Secretariat based in Geneva, Switzerland.

The principal deliverable of ISO is the International Standard.

An International Standard embodies the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in an ISO Technical Committee (ISO/TC), representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its Technical Committees are also able to offer the ISO Technical Specification (ISO/TS), the ISO Public Available Specification (ISO/PAS) and the ISO Technical Report (ISO/TR) as solutions to market needs. These ISO products represent lower levels of consensus and have therefore not the same status as an International Standard.

ISO offers also the International Workshop Agreement (IWA) as a deliverable which aims to bridge the gap between the activities of consortia and the formal process of standardization represented by ISO and its national members. An important distinction is that the IWA is developed by ISO workshops and fora, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.

2. BUSINESS ENVIRONMENT OF THE ISO/TC

2.1 Description of the Business Environment

The following political, economic, technical, regulatory, legal and social dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of this ISO/TC, and they may significantly influence how the

relevant standards development processes are conducted and the content of the resulting standards:

The scope of ISO/TC 35 is standardization in the field of paints, varnishes and related products. In practice this comes down to the maintenance and development of the following:

- Standards on definitions and terminology to speak the same “paint” language;
- Standards on Volatile Organic Compounds (VOCs);
- Standards for test methods for binders for paints and varnishes;
- Standards for test methods for ready-made paints, in liquid or powder form, and for the dried film (among others testing of physical properties);
- Standards for test methods, specifications and assessment standards in view of the preparation of steel substrates before application of paints and related products;
- Standards dealing with protective paints systems for steel structures;
- Technical reports and recommendations in any of the above fields.

As coatings are used almost everywhere it means that many other technical committees are involved or of interest, for example standardization for the building and construction sector and automotive industry. Cooperation with the adjacent technical committees is very important. It is the objective of ISO/TC 35 that all items involved in the performance of coatings are to be dealt with by the technical committee itself. This is in order to achieve a coherent set of standards and to ensure an integrated approach. This technical committee provides an umbrella under which all, with knowledge on paints and its application, can meet for efficient standardization and coordination.
The paint industry (and the raw materials industry) has for a long time been the ongoing subject of numerous regulatory activities. This has led, for example, to a considerable reduction of the use of organic solvents and certain heavy metal compounds in paints and coating materials but, on the other hand, also to an ongoing need for research and development. In section 3 more about the drivers for innovation and product development are described and explained.
The regulatory activities will keep on developing especially in the field of health and safety and environmental aspects.

Categories of relevant stakeholders for ISO/TC 35 are:

- Industry (paint manufacturers, manufacturers test equipment, manufacturers of raw materials for paints (e.g. organic solvents, binders);
- Customers (industrial users (e.g. construction, ships, industrial appliances, automotive industry, private consumers);
- Governments and public authorities (in view of legislation and as user);
- Non Governmental Organizations (concerning environmental, health and safety aspects);
- Users (paint applicators, inspectors, structural and corrosion engineers and specifiers).

2.2 Quantitative Indicators of the Business Environment

The global paints and coatings market attained a value of USD 174,3 billion in 2021. Strict governmental and environmental regulations, such as the Clean Air Act, the Occupational Safety and Health Administration (OSHA), and EU legislation, are restraining the market growth of the solvent-based product. The waterborne segment led the market and accounted for the largest share of more than 39 % in 2021. The increasing spending in the construction sector and consumer preference for eco-friendly products are expected to support the segment growth over the forecast period.

The ongoing growth in the urbanization and construction industry, especially in the Asia-Pacific region, to drive the consumption of paints and coatings. The rate of urbanization in the Asia-Pacific region is around 1,5 % per year, the world's highest. It is estimated that by the year 2030, over half of the population in the region will be urban. According to the United Nations, as of 2021, 33 megacities in the world require planned habitation for the rapidly growing urban population. the global construction output will grow by 85 % to reach USD 15,5 trillion by 2030. The decorative paints market is roughly 45 % of the € 75 billion global paints and coatings market.

The demand for paints and coatings is rising in the automotive industry due to increased overall vehicle demand, aging vehicles. the paints and coatings for the automotive sector are also evolving. One of these evolutions is in the use of smart coatings because they offer the potential to significantly improve surface durability while adding additional functionalities or properties like self-healing, super-hydrophobicity, self-stratifying, self-sensing, soundproofing, and vibration damping. Key Market Players PPG BASF Sherwin-Williams Diamond Paints to Strengthen the Market Position by Majorly Focussing on Construction and Automotive Industries.

Innovative formulation technologies have significantly facilitated to cater to numerous new and diverse consumer demands. Anticorrosive protection, low-VOC content coats, and nano-coatings are few of the recent innovations available in the present market. Keeping in mind the uncertainties of COVID-19

World TOP TEN Paint companies in 2021:

1.	SHERWIN-WILLIAMS (US)	www.sherwin-williams.com	USD 19.08 billion
2.	PPG Industries (US)	www.ppg.com	USD 14.39 billion
3.	AKZONOBEL (NL)	www.akzonobel.com	USD 10.53 billion
4.	NIPPON Paints (JP)	www.nipponpaint.co.jp	USD 7.656 billion
5.	RPM Inc (US)	www.rpminc.com	USD 5.744 billion
6.	DIAMOND Paints (US)	www.diamondpaint.us	USD 4.116 billion
7.	BASF (DE)	www.basf.com	USD 3.943 billion
8.	AXALTA (US)	www.axaltacs.com	USD 3.893 billion
9.	KANSAI Paint (JP)	www.kansai.com	USD 3.686 billion
10.	Asian Paints (IN)	www.asianpaints.com	USD 2.489 billion

(Source: World's Top ten Paints Companies 2021 Annual Report, WPCIA Washington, January 5, 2022, http://www.wpcia.org>news)

3. BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC

The TC, its sub committees and working groups prioritize the work based on the demand from the industry’s stakeholders. To understand the demand it is good to know the main drivers for the paint manufacturers.

The paint industry is still a conventional industry and is building on proven technologies for formulation, production and performance testing. Successful innovations are often more the result of evolution than of revolutionary new ideas. Many innovations are a result of new technologies developed by the suppliers of raw materials. This is often done in close cooperation with the coatings manufacturers.

The same is valid when it concerns test methods to determine the properties of dry and wet paint (viscosity, density, gloss, corrosion resistance, adhesion, etc.) and the substrates before painting (e.g. surface roughness, cleanliness). Also here the industry and manufacturers of test equipment work closely together.

Besides decoration, a very important function of coatings is the protection of substrates to increase the life time of the painted objects. Paint fits well in a world where sustainability is becoming of increasing importance. Life Cycle Analysis is becoming more and more important for the industry and its stakeholders. Environmental Product Declarations (EPDs) are becoming more and more important.
Most coatings are a mixture of (natural and manufactured) chemical substances and often rely on proper drying by emitting solvents and/or chemical reactions to achieve the desired properties. Relevant aspects concerning health, safety and the environment are regulated by legislation, usually varying from country to country. Legislation is a key driver for the paint industry: REACH, national regulations on VOCs (volatile organic compounds) and on Indoor Air quality.

The cost of transport of both raw materials and the finished products has always been a driver for the paint industry to continuously optimize their production footprint in line with the market and to use preferably local raw materials. Applying paint is often a labour intensive job and also requires skilled personnel. Therefore it is not surprising that product developments are driven by the need to increase the paint robustness for application methods and improving the application speed.

Reproducible and practical standards are required to guarantee that requirements for paint properties are measured in the same way independent of place or person to enable objective assessments and to speak the same “paint language” all over the world.

4. REPRESENTATION AND PARTICIPATION IN THE ISO/TC

4.1 Membership

Countries/ISO member bodies that are P and O members of the ISO committee

4.2 Analysis of the participation

A good number of principal players in the paint industry are represented, but there are quite a number of countries with a substantial paint industry that are not yet visibly involved. Attendance of meetings and participation of experts is limited to a small number of countries. The involvement of the Western European countries (especially Germany, France, UK, Scandinavia, the Netherlands) is reasonable. More active involvement from Eastern Europe would be welcomed. Due to the improved cooperation with ASTM D01 the participation of the USA within ISO/TC 35 is now at a good level. From Asia Pacific, Japan is very active; Korea and China were active in the past. After a period of silence it is expected that they will become more active again. With the new JWG with ISO/TC 67, Australia has become active. The Middle East, Africa, and South America are under-represented.

ISO/TC 35 is actively trying to get more involvement by actively using personal networks of the experts within the industry and trade organizations (e.g. CEPE), and maintaining

and establishing new contacts with the national standardization bodies. A dedicated LinkedIn page will be set up [link to be added once agreed].

The economic partners involved in the work of the technical committee are mainly:
- paint manufacturers;
- producers of testing equipment;
- industrial users (e.g. construction, timber industry, industrial appliances, automotive, industry);
- applicators and inspectors (e.g. for corrosion protection);
- testing laboratories, research institutes, certifying bodies.

Presently it is not felt that a specific stakeholder lacks in participation, but the global spread of representation is a point of concern as explained above.

5. OBJECTIVES OF THE ISO/TC AND STRATEGIES FOR THEIR ACHIEVEMENT

5.1 Defined objectives of the ISO/TC

The work programme of the committee is directed towards serving the global market and eliminating trade barriers whilst keeping close contact with the continuing changes in the industry and its user requirements. For this ISO/TC 35 works close together with other ISO/TCs, ASTM D01 and others to come to one globally accepted set of coatings standards that contribute to
- Reduction or elimination of commercial trade barriers. The close cooperation with CEN/TC 139 under the Vienna Agreement plays an important role here when it concerns Europe.
- Practical use of unambiguous test results with acceptable precision through the world.
- Support legislation and international agreements, in particular with regard to environmental protection, (occupational) health and safety to make the world a better place for the current and future generations.

The work carried out within the TC upholds all the rules and procedures concerning maintenance, project and document management required by ISO. When possible the fast track options are used to speed up the process without compromising on quality.
ISO/TC 35 strives at full compliance with the ISO requirements at all times.

5.2 Identified strategies to achieve the ISO/TC's defined objectives

To maintain and optimize a set of coherent standards ISO/TC 35 cooperates closely with the European technical committee for paints and varnishes (CEN/TC 139) and with ASTM D01 'Paint and Related Coatings, Materials, and Applications'. There are also liaisons with other ISO/TCs and CEN/TCs that cover areas and aspects that are relevant for paints and varnishes. ISO/TC 35 and the CEN/TCs cooperate through the Vienna Agreement.
For many other relevant fields contact and cooperation is established through liaisons. For each liaison a liaison officer is appointed. A full overview of liaisons is found on the ISO website.

The cooperation between ASTM D01 and ISO/TC 35 has moved from harmonizing existing standards of both organizations to focusing on new standards development, to avoid duplication of items. The only criterion for new standards is that new standards must fulfil

the needs of the international community. It is not relevant if this standard is an ASTM or ISO standard as long as competent experts are involved and both parties are satisfied with the result.

To work efficiently and effectively ISO/TC 35 organizes once a year a meeting week in which as much as possible the meetings of working groups, subcommittees and the TC take place. Physical attendance is not always possible or practical and therefore also the option to participate by internet digital platforms is offered for all meetings. All documents and meetings are in the English language. Many working groups also meet during the year additional to the yearly plenary meeting. In preparation of meetings a lot of work is done by correspondence.
The plenary ISO/TC 35 meeting is always scheduled as the last meeting in the meeting week.

Resources especially in terms of time that the experts, secretaries and chairs can spend are limited. It is also for that reason that it becomes more and more difficult to find new experts for vacancies. Setting priorities and making choices based on the needs and demands of the stakeholders is required by all working groups and committees. When there is no longer a need or lack of interest for a working group or subcommittee they are disbanded or kept dormant.
When liaisons have proven to be no longer effective or needed, then they will also be abandoned.

Each subcommittee and working group have their own scope and areas of responsibility. Issues that are of importance for all or most of the ISO/TC 35 activities are discussed in the Central Advisory Group (CAG) in which all chairs, convenors and secretaries have a seat. The CAG meeting is always scheduled before the plenary meeting.

The strategy of ISO/TC 35 comes down to aiming at doing the important things as efficient as possible within the set boundaries of ISO.

6. FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE ISO/TC WORK PROGRAMME

Critical factors for successful paint standardization are listed below and for each factor also the most important challenges that faced are explained:

a Participation of experts dealing with the subject in their daily work. In practice, however, these experts are over-loaded with work for their company and are therefore often not available for standardization work. Additional the dynamics of people’s careers have changed over the years; people tend to change function or company more often.

b Availability of funding and laboratory facilities to provide new data requirements and to provide experimental backup to check precision comparisons of proposed standards.

c With an increasingly global industry it becomes more difficult to find 5 P-members to participate in a project. And as already mentioned in section 4, only a limited number of member countries are actively involved; often there is enough interest in a

standard, but only a few countries can deliver experts or more experts are located in the same country.

d Adequate resources (e.g. funding) for help of professionals from standardization institutes, including the work of the secretariats. Also here we see that more tasks are done by less people, against lower costs. Proper application of the standardization rules, organization of efficient meetings and assistance in drafting unambiguous standards are indispensable.

e Development of globally relevant standards must be the objective. Viewpoints can differ because of national education and habits, different commercial interests, different climates etc. Without a clear outline of the purpose of the standard and the commitment of all parties concerned a standard cannot be developed within a reasonable time schedule.

7. STRUCTURE, CURRENT PROJECTS AND PUBLICATIONS OF THE ISO/TC

7.1 Structure of ISO/TC 35

7.2 Current projects of ISO/TC 35 and its subcommittees

7.3 Publications of the ISO/TC 35 and its subcommittees

Reference information

Glossary of terms and abbreviations used in ISO work and deliverables

General information on the principles of ISO's technical work