



STRATEGIC BUSINESS PLAN – ISO/TC 328

Executive summary

Engineered stones are composite products made of granular material, powder, binding agents and coloring additives, industrially manufactured by means of different molding technologies, mainly through vibration and simultaneous compression under vacuum.

In the actual technologies Engineered Stones are manufactured in the following sizes, even if larger sizes are sometimes used particularly for the slabs:

- Slabs up to 4,5 square meters of surface area
- Blocks of more than 3 cubic meters in volume

The typical thickness on the market is between 10 and 30 millimeters. Other thinner thicknesses are possible for specific installations.

Recent market studies have estimated the presence of more than 200 Engineered Stones manufacturers of industrial dimension in the world, with a strong concentration in the Far East, but there are more than 1500 smaller manufacturers worldwide.

ISO/TC 328 is aimed to produce a set of internationally agreed principles, terminology, framework suitable for the global market of engineered stones products in order to achieve the harmonization of performance and safety requirements on which the characterization of the products depends.

The main objectives and priorities in the work of the committee are:

- the development of test methods aiming to the characterization of engineered stones;
- the development of definitions and requirement standards;
- the intention to develop International Standards also supporting the United Nations Sustainable Development Goals (SDGs), like for example the environmental sustainability.

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 two macro-groups of engineered stones are distinguished according to the binders actually used:

- Organic resin (mainly of polyester type);
- White or grey cement.

A second classification is based on the nature of the main raw materials:

- Marble chips (beautiful aesthetic but lower mechanical resistance, not resistant to acid, etc.)
- Quartz chips (higher mechanical resistance, resistant to acid, etc.).

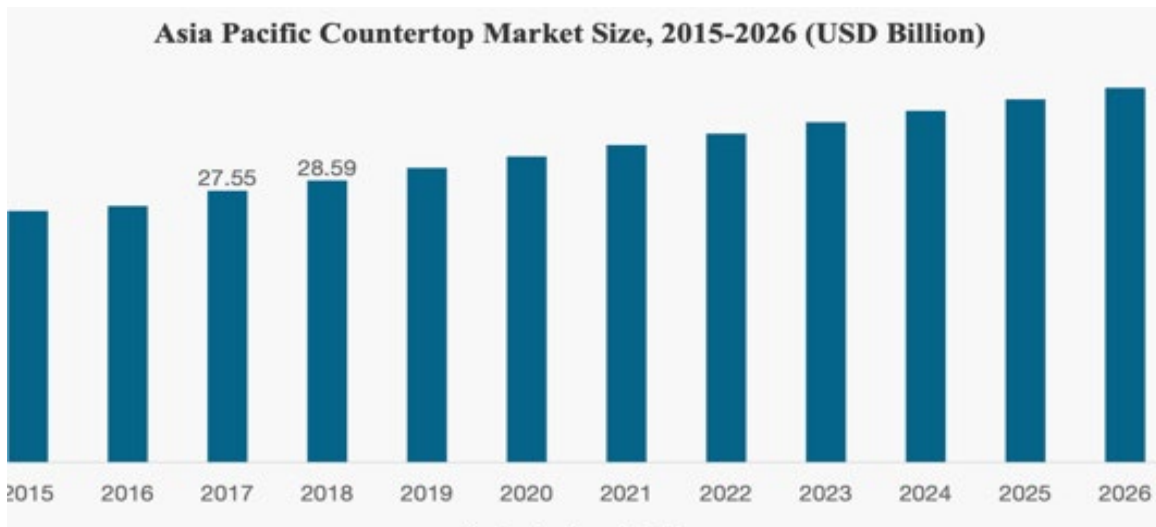
A further product classification can be based on the grain size of the granular material, particularly as far as the maximum dimension.

With reference to the growth forecast, it has been estimated that from 2014 to 2019 the growth has practically doubled.

Therefore the worldwide production is constantly growing and the global production is estimated for 2024 in over 230 million square meters of finished product, and for 2029 in over 279,4 million square meters with a world demand estimated as follow (million square meters):



(Source: Freedonia Group e Data Bridge Market Research)

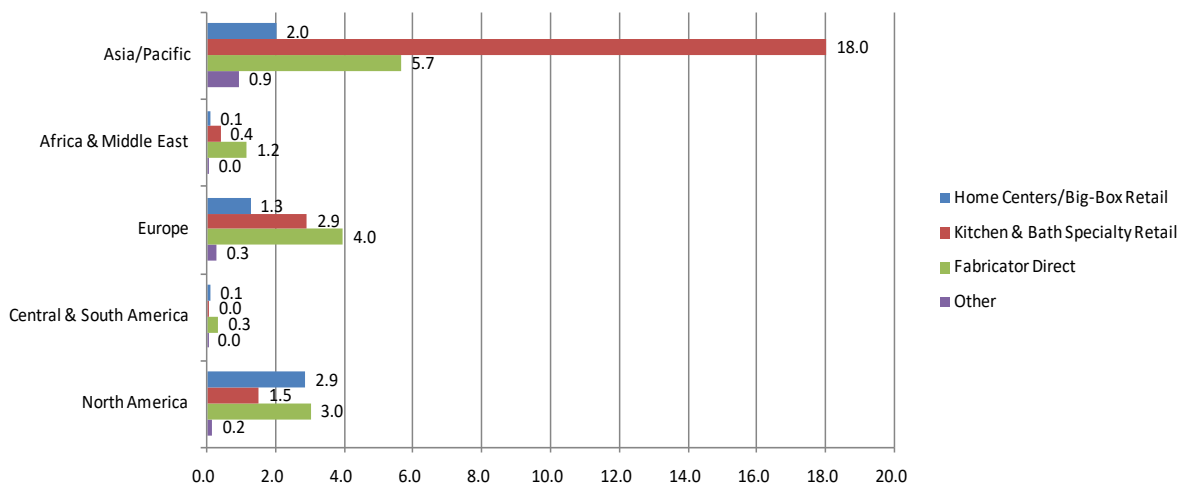


(Source: Freedonia Group e Data Bridge Market Research)

2.2 Quantitative Indicators of the Business Environment

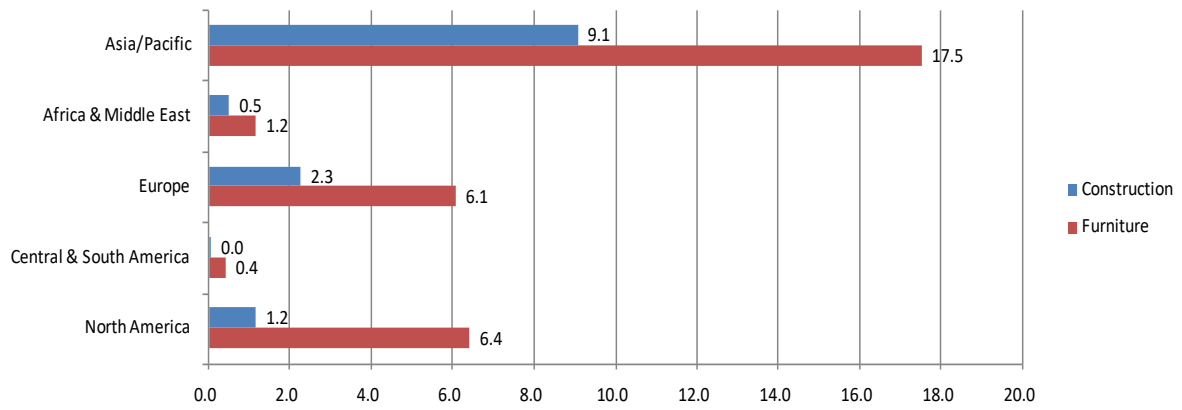
The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the ISO/TC:

Engineered stones are put on the market in the form of slabs, tiles and cut to size products. The distributing channels are listed here below in percentage according to the different areas.



(Source: Freedonia Group e Data Bridge Market Research)

Originally used for flooring and wall finishes, today the demand for these products is constantly increasing for different applications, such as in furnishings for kitchen and bathroom countertops.



(Source: Freedonia Group e Data Bridge Market Research)

3 Benefits expected from the work of the ISO/TC

The main priorities in the work of the committee are related to the global harmonization of the information to be provided by the manufacturer to the end user in terms of quality aspects, performance characteristics and safety requirements of the products.

The intention is to work out International Standards globally recognized as guidelines and frameworks based on the international collaboration and becoming essential tools to help governments, industry and consumers to contribute to the achievement of the SDGs (Sustainable Development Goals) as well.

Both consumers and manufacturers recognize the impacts of their choices and actions.

Reducing the environmental impact, promoting the use of renewable resources and encouraging responsible purchasing are just some examples of the ways that new ISO standards could contribute to sustainability in the field of engineered stones.

This sector is able to make extensive use of quarry marble and granite discards, thereby contributing to solving the problem of the environmental impact of the fabrication process of natural stones.

The advantages associated to these products in terms of environmental compatibility are not limited to this. Engineered stones show the following advantages:

- a) high mechanical resistance, allowing the use of thin products of large sizes, thus facilitating movement and installation and permitting reduction of the embodied energy costs;
- b) durability of the material due to the absence of micro and macro defects, which permits minimization of successive costs and intervention for possible damage once the material is installed;
- c) low porosity of the material, which means that cleaning and ordinary maintenance are reduced to a minimum;
- d) maximum possibilities in the choice of colors for the realization of works in perfect harmony with the environment.

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 listing of the countries that have attended the first plenary meeting is given in the following Table.

Country	Member Body	Membership Status
BRAZIL	ABNT	P
FRANCE	AFNOR	P
INDIA	BIS	P
ITALY	UNI	P
PORTUGAL	IPQ	O
RUSSIAN FEDERATION	GOST R	P
SPAIN	UNE	P
SWEDEN	SIS	P
UNITED STATES	ANSI	P
P Participant O Observer		

As for the importing countries, it can be safely said that with the exception of many African countries, as they are too poor, engineered stones are marketed throughout the rest of the world. Interesting are the cases of Japan and Australia which, despite not having local productions, are among the largest importers.

The distribution by geographical area of the countries in which at least one production plant exists is as follows:

Europe	Belgium (P), <i>Czech Republic</i> , Germany (O), Italy (P), Portugal (O), <i>Romania</i> , Russian Federation (P), Spain (P)
Middle East	Israel (P), <i>Lebanon, Oman, Turkey</i> (O)
Far East	<i>Cambodia, China</i> , India (P), <i>Malaysia, South Korea, Taiwan, Vietnam</i>
Americas	Brazil (P), <i>Canada</i> , United States (P).
P Participant O Observer In <i>Italics</i> those countries having not joined the TC either as participants or as observers	

Efforts will be made to expand participation of ISO/TC 328 especially involving

- those countries having not joined the TC either as participants or as observers
- and engaging other categories of stakeholders like laboratories and consumers.

International liaison relationships with ISO/TC 328 will be established where appropriate.

5 Objectives of the ISO/TC and strategies for their achievement

5.1 Defined objectives of the ISO/TC

The objectives of ISO/TC 328 will be addressed by working groups.
During the first plenary meeting, ISO/TC 328 decided on this structure:

WG 1: Definitions of engineered stones intended for use in countertops and vanities, floor and wall coverings: raw materials, manufacturing processes, and finished products.

WG 2: Requirements and test methods for engineered stones with resin or cement binders or a combination of the two, intended for use in countertops and vanities (furniture in general).

WG 3: Requirements and test methods for engineered stones with resin or cement binders or a combination of the two, intended for use in floor and wall coverings, ancillary uses, either for interior and exterior (constructions in general).

WG 4: Environmental compatibility of engineered stones with resin or cement binders or a combination of the two during their life cycle: production, application, use, and disposal.

WG 5: Requirements for the preparation and installation procedure of engineered stones with resin or cement binders or a combination of the two, intended for countertops, vanities, floor and walls, either for interior or exterior applications.

The first working group has been approved and established: WG 1 Requirements for preparation and installation procedures.

The second working group is going to be established: WG 2 Environmental compatibility of engineered stones during their life cycle.

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

ISO/TC 328 work is intended to standardize definitions, requirements and test methods for engineered stones with resin or cement binders or a combination of the two, intended for use in countertops and vanities, floor and wall coverings and ancillary uses, either for interior and exterior.

This will be achieved

- keeping as a basis the existing European standards elaborated within CEN/TC 246/WG 4:
 - EN 14617-9:2005 Agglomerated stone - Test methods - Part 9: Determination of impact resistance
 - EN 14617-11:2005 Agglomerated stone - Test methods - Part 11: Determination of linear thermal expansion coefficient
 - EN 14617-8:2007 Agglomerated stone - Test methods - Part 8: Determination of resistance to fixing (dowel hole)
 - EN 14617-16:2005 Agglomerated stone - Test methods - Part 16: Determination of dimensions, geometric characteristics and surface quality of modular tiles
 - EN 15285:2008 Agglomerated stone - Modular tiles for flooring and stairs (internal and external)
 - EN 15388:2008 Agglomerated stone - Slabs and cut-to-size products for vanity and kitchen tops
 - EN 14618:2009 Agglomerated stone - Terminology and classification

EN 15286:2013 Agglomerated stone - Slabs and tiles for wall finishes (internal and external)

EN 14617-6:2012 Agglomerated stone - Test methods - Part 6: Determination of thermal shock resistance

EN 14617-4:2012 Agglomerated stone - Test methods - Part 4: Determination of the abrasion resistance

EN 14617-5:2012 Agglomerated stone - Test methods - Part 5: Determination of freeze and thaw resistance

EN 14617-10:2012 Agglomerated stone - Test methods - Part 10: Determination of chemical resistance

EN 14617-12:2012 Agglomerated stone - Test methods - Part 12: Determination of dimensional stability

EN 14617-13:2013 Agglomerated stone - Test methods - Part 13: Determination of electrical resistivity

EN 14617-1:2013 Agglomerated stone - Test methods - Part 1: Determination of apparent density and water absorption

EN 16954:2018 Agglomerated stone - Slabs and cut-to-size products for flooring and stairs (internal and external)

EN 14617-2:2016 Agglomerated stone - Test methods - Part 2: Determination of flexural strength (bending)

- keeping as a basis the standards all over the world
- taking into consideration the developments in the industry.

6 Factors affecting completion and implementation of the ISO/TC work programme

A factor affecting completion and implementation of the work programme could be the limited participation of producing and importing countries. See also 4.2.

7 Structure, current projects and publications of the ISO/TC

Information on ISO online

The link below is to the TC's page on ISO's website:

[ISO TC 328 on ISO Online](#)

Click on the tabs and links on this page to find the following information:

- About (Secretariat, Committee Manager, Chair, Date of creation, Scope, etc.)
- Contact details
- Structure (Subcommittees and working groups)
- Liaisons
- Meetings
- Tools
- Work programme (published standards and standards under development)

Reference information

[Glossary of terms and abbreviations used in ISO/TC Business Plans](#)

[General information on the principles of ISO's technical work](#)