

BUSINESS PLAN

CEN/TC 69 INDUSTRIAL VALVES

EXECUTIVE SUMMARY

Business Environment

- Europe represents approximately 28,6 % of the world market.
- The parties involved are:
 - manufacturers of industrial valves, actuators and safety devices against excessive pressure;
 - users in specific industries (oil and gas, power generation, chemical, petrochemical, pulp and paper, water supply and sewage, building).
- Industrial valves are covered by a European directive, the Pressure Equipment directive, which was adopted in 1997 and revised in 2014; it has changed the business environment of industrial valves market.

Benefits

The aim of European standardization is to prepare standards on valves for all industrial applications and for all types of fluids.

Industrial valves are covered by the Pressure Equipment Directive (PED) 97/23/CE, revised in 2014 as 2014/68/UE.

The aim of this Directive is to replace specific national rules with European rules, to put an end to any barrier to trade and to improve safety within the European Union.

This European Directive specifies Essential Safety Requirements which are addressed by European Standards named "harmonised standards".

Other European Directives have an impact on the market of industrial valves, even if CEN/TC 69 is not directly involved: for example ATEX Directive 2014/34/UE (Equipment and protective systems intended for use in potentially explosive atmospheres), Machinery Directive 2006/42/EC, Electromagnetic compatibility Directive 2004/108/EC (EMC)....

- Since 1990, 75 European standards were adopted, among which 28 are EN ISO standards (i.e. identical standards in CEN and ISO organizations);
- 29 harmonised standards under Pressure Equipment Directive (97/23/CE - 2014/68/UE) have been published.

European standards allow maintaining a high level of quality, reliability and functional safety.

Priorities

The priorities have been:

- to develop European product standards to meet the requirements of Pressure Equipment Directive (97/23/CE - 2014/68/UE).
- to develop standardised methods for the valve design, calculation and testing;
- to prepare performance standards applicable to specific industries;
- to take into account environmental aspects in European Standards, using the work developed in other Standardization Committees (for example CEN/TC 406).

1 BUSINESS ENVIRONMENT OF THE CEN/TC 69

1.1 Description of the Business Environment

The following political, economic, technical, regulatory, legal, societal and/or international dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of this CEN/TC, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards.

The European valve industry highly segmented in the past has been under the process of concentration. Important actors in the concentration process are non-European valve manufacturers. This implies that nowadays valves manufacturers are members of international firms well represented in most of the European countries. Therefore the market of industrial valves is international.

The scope of CEN/TC 69 is the standardization of valves for all industrial applications and for all types of fluids, also including: steam traps; valve actuator interface; safety devices against excessive pressure (safety valves and bursting discs), control valves (excluding the actuator element and their interface).

CEN/TC 69 deals with industrial valves of all metallic materials and thermoplastic materials. CEN/TC 69 scope excludes sanitary valves which are under the responsibility of CEN/TC 164 "Water supply" (in its working groups WG 8 "Sanitary tapware" and WG 14 "Building valves and backflow prevention").

CEN/TC 69 deals with gate, globe and check valves, butterfly valves, plug and ball valves, control valves, diaphragm valves, thermoplastic valves, actuators and safety devices against excessive pressure (safety valves, bursting discs, pilot operated safety valves, CSPRS – Controlled Safety Pressure Relief Systems).

CEN/TC 69 deals with valves for building for all fluids, except water supply for human consumption (covered by CEN/TC 164).

On the European market, the valve users are divided into different sectors, such as oil and gas, chemical industries and water supply. Therefore to answer the needs of these different valve users, CEN/TC 69 has developed standards to deal with the requirements of these specific sectors.

Industrial valves are covered by the Pressure Equipment Directive (PED) 97/23/CE, revised in 2014 as 2014/68/UE.

The aim of this Directive is to replace specific national rules with European rules, to put an end to any barrier to trade and to improve safety within the European Union.

This Directive had a direct influence on CEN/TC 69 work, as the European Commission has mandated CEN to prepare standards, named "harmonised standards", to address the essential safety requirements specified in this Directive.

Other European Directives have an impact on the market of industrial valves, even if CEN/TC 69 is not directly involved:

- ATEX Directive 2014/34/UE for equipment and protective systems intended for use in potentially explosive atmospheres;

- Machinery Directive 2006/42/EC
CEN/TC 69 agreed that a valve with actuator (electric, pneumatic, hydraulic, energy accumulator or spring-loaded) is not a machinery, nor a partly-completed-machinery (PCM) in terms of article 2, clause g) of the Machinery Directive 2006/42/EC, unless it is requested and designed to be incorporated into a machine or into a partly completed machine or into an equipment which shall be joined together for the specific application to influence the flow of a fluid in this machinery or equipment.
- Electromagnetic compatibility Directive 2004/108/EC (EMC)

The European manufacturers have been facing the competition from emerging countries and from non-European countries: industrial valves are not only covered by European standards, but also by International standards. Therefore CEN/TC 69 has developed close links with the following committees:

- ✓ committees under ISO management (ISO is the International Organization for Standardization)
 - ISO/TC 153 "Valves";
 - ISO/TC 138/SC 7 "Valves and auxiliary equipment of plastic materials";
 - ISO/TC 185 "Safety devices for protection against excessive pressure";
- ✓ committees under IEC management (IEC is the International Electrotechnical Commission)
 - IEC SC 65B WG 9 "Final control element" (control valves).

1.2 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 CEN /TC.

Industrial valve market

[data from the European Industrial Forecasting report « The World Valve & Actuator Market 2014-2019 » dated October 2014]

The following figures are taken from a study prepared by *European Industrial Forecasting* (October 2014) ordered by CEIR.

Market share estimation per type of industry in 2014	
General industry	43,9 %
Oil and gas	25,0 %
Chemicals	14,6 %
Power generation	6,9 %
Water and sewage	9,6 %
TOTAL MARKET SIZE (in billion of US \$)	62,3

Europe represents 28,6 % of the total international market.

Market share per geographical areas in 2014	
West Europe	21,1 %
East Europe	3,2 %
Russia	4,3 %
USA/Canada	16,9 %
Latin America	6,1 %
China	14,3%
Japan	7,0 %
Middle East	9,1 %
India	3,8 %
Pacific	8,6 %
Africa, other Asia	5,6 %

European Industrial Forecasting forecasted the following world market (in billion of US \$):

	2012	2013	2014
World market	60,0	66,6	62,3

2 BENEFITS EXPECTED FROM THE WORK OF THE CEN/TC 69

- The first benefit of European standardization within CEN/TC 69 is to allow industrial valves manufacturers and users to meet in a well-known structure, to write together standards which are used by all.
- The second benefit is that European standards are expected to remove technical barriers to trade and open markets throughout Europe. European standards prepared by a CEN technical committee replace national standards on the same subject, in all countries member of CEN. Since the beginning of CEN/TC 69 work, 75 European standards were published, some of them are under revision.

Moreover some of these standards were developed in common between CEN/TC 69 and ISO committees: 28 identical EN and ISO standards were published. These identical EN and ISO standards are meant to be used world-wide.

- The third benefit is that European standards allow maintaining a high level of quality, reliability and functional safety. On the European market, industrial valves in compliance with European standards respect a high level of performance, are safe for use by customers, are friendly for the environment and are more efficient than some products manufactured in other non-European countries.

- The fourth and very important benefit of CEN/TC 69 is to prepare harmonized standards which support the Pressure Equipment Directive (PED). Presently 29 published European standards have already been cited in the Official Journal of the European Union under Pressure Equipment Directive (97/23/EC – 2014/68/UE) and confer presumption of conformity with Essential Safety Requirements of that Directive.

3 PARTICIPATION IN CEN/TC 69

All the CEN national members are entitled to nominate delegates to CEN Technical Committees and experts to Working Groups, ensuring a balance of all interested parties. Participation as observers of recognized European or international organizations is also possible under certain conditions. To participate in the activities of this CEN/TC, please contact the national standards organization in your country.

4 OBJECTIVES OF CEN/TC 69 AND STRATEGIES FOR THEIR ACHIEVEMENT

4.1 Defined objectives of CEN/TC 69

The objectives of CEN/TC 69 have been the preparation of:

- 1) basic standards for terminology, design, tests and marking;
- 2) product standards to harmonise the practices in Europe, which are used by manufacturers and customers of industrial valves on the European market;
- 3) harmonised product standards giving presumption of conformity with the essential safety requirements of the Pressure Equipment Directive (PED);
- 4) standards for fitness of use in process industries (water, oil and gas, chemical ...), with the exceptions stated in 1.1 (i.e. sanitary valves and valves for building for water supply for human consumption)

Regarding item 3), a number of standards of CEN/TC 69 were published or are currently being prepared or being revised to support the Pressure Equipment Directive (PED).

The European standards address the Essential Safety Requirements (ESRs) that are listed in this Directive, by specifying requirements and/or measures for reducing or eliminating risks associated with the hazards related to pressure relevant to the products covered by the standards. Once the harmonized standards are published and are cited in the Official Journal of the European Union, they can be used by manufacturers and suppliers to claim "presumption of conformity" with the relevant ESRs of the PED.

4.2 Identified strategies to achieve CEN/TC 69's defined objectives

To reach its objectives, CEN/TC 69 has several working groups (WG) to deal with specific items:

WG 1	"Basic standards"
WG 4	"Butterfly valves"
WG 10	"Safety devices against excessive pressure"
WG 12	"Valves for the process industry"
WG 16	"Thermoplastic valves"

To comply with CEN rules, some of them were disbanded once their work was completed.

WG 1 deals with all the basic standards: terminology, design, calculation methods, testing methods, face-to-face and centre-to-face dimensions, marking and valve actuator.

WG 4, 10 and 16 deal with product standards.

WG 12 deals with performance standards applicable to specific industries or specific uses.

The priorities of CEN/TC 69 are:

- to develop and revised terminology standards referred to in all other standards of CEN/TC 69;
- to develop and revise product standards to meet the requirements of the Pressure Equipment Directive (PED);
- to develop standard to provide the minimum performance requirements of industrial valves to comply with European Legislation;
- to develop and revise tests methods for the valve design and performance standards applicable to specific industries;
- to update standards to meet the market needs and new regulations, as well as technology evolutions.

The European manufacturers have been facing competition from emerging countries and from non-European countries: industrial valves are not only covered by European standards, but also by International standards. Therefore CEN/TC 69 has developed close links with the following committees:

- ✓ committees under ISO management (ISO is the International Organization for Standardization)
 - ISO/TC 153 "Valves";
 - ISO/TC 138/SC 7 "Valves and auxiliary equipment of plastic materials";
 - ISO/TC 185 "Safety devices for protection against excessive pressure";
- ✓ committees under IEC management (IEC is the International Electrotechnical Commission)
 - IEC SC 65B WG 9 "Final control element" (control valves);

Via the Vienna Agreement with ISO committees (ISO/TC 153, ISO/TC 138/SC 7, ISO/TC 185), development of standards have been made in parallel in CEN and in ISO: it has allowed CEN and ISO committees to gain time and to avoid the duplication of work.

CEN/TC 69 has several liaisons:

- with CEN committees to co-ordinate the development of standards and to be kept informed of the work made by other committees:
 - CEN/TC 12 "Materials, equipment and offshore structures for petroleum and natural gas industries"
 - CEN/TC 74 "Flanges and their joints"
 - CEN/TC 155 "Plastics piping systems and ducting systems"
 - CEN/TC 164 "Water supply"
 - CEN/TC 182 "Refrigerating systems, safety and environmental requirements"
 - CEN/TC 228 "Heating systems in buildings"
 - CEN/TC 235 "Gas pressure regulators and associated safety shut-off devices for use in gas transmission and distribution"
 - CEN/TC 268 "Cryogenic vessels"
 - CEN/TC 269 "Shell and water-tube boilers"
 - CEN/TC 305 "Potentially explosive atmospheres – Explosion prevention and protection"
 - CEN/PC 406 "Mechanical products - Ecodesign methodology"

- with international committees, to develop common standards in parallel and to avoid the duplication of work:
 - ISO/TC 185 "Safety devices for protection against excessive pressure"
 - ISO/TC 138/SC 7 "Plastics pipes, fittings and valves for the transport of fluids/Valves and auxiliary equipment of plastics materials"
 - IEC SC 65B WG 9 "Final control element" (control valves)
- with other organisations which are interested by CEN/TC 69 work:
 - AEGPL "Association Européenne des Gaz de Pétrole Liquéfiés"
 - CEIR "Comité Européen de l'Industrie de la Robinetterie"

4.3 Environmental aspects

CEN/TC 69 created a liaison with CEN/PC 406 "Mechanical products - Ecodesign methodology" in June 2011.

CEN/TC 69 has been closely following the work done by this committee, in particular the CEN/TS 16524 providing a methodology for the reduction of environmental impacts in product design and development, and the drafting of the CEN/TR giving guidelines for the selection of environmental communication models.

The following 7 key environmental aspects identified in CEN/TS 16524 should be considered by CEN/TC 69.

- Raw materials: aspect relating to the choice of materials, components (purchased), and fluids used in the product composition (excluding packaging)
- Manufacture: aspect relating to all the processes required to develop the product and components (excluding packaging), internally and externally (number of parts, "polluting" operations, etc.)
- Use: aspect relating to all the resources required to use the product (energy-using product, energy source, energy interaction with an assembly, product requiring consumables, servicing, product life time, etc.), ...
- Recyclability at product end-of-life: aspect taking account of the reduction of the product impact at end-of-life and of its recyclability rate
- Hazardous substances: aspect relating to substances contained in a product likely to penalise product end-of-life (heavy metals, flame retardants, fluorine atoms, bromium, chlorine, etc.)
- Transportation: aspect relating to the geographic distribution (regional, national, European, worldwide) of the number of suppliers and subcontractors, shipment volumes, etc.
- Packaging: aspect taking into account the amount, reuse, recyclability, biodegradability of packaging, etc.

Hazardous substances are partly covered by EN ISO 15848-1 and 2 which aim to classify industrial valves to reduce the fugitive emissions of dangerous substances to atmosphere.

CEN/TC 69 should be aware of the consequences of the limitation of some substances in REACH and the possible impact in product standards.

Other themes in the framework of a multi-criteria approach are:

- the determination of the carbon footprint of valves;
- the determination of the recyclability rate;
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The objectives of CEN/TC 69 are to promote the environmental approach in a B-to-B context, and to comply with legislation.

5 FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF CEN/TC 69 WORK PROGRAMME

Firstly CEN/TC 69 must consider the impact of the revised Pressure Equipment Directive (PED) 2014/68/UE on its harmonized standards.

Secondly CEN/TC 69 has been relying on a CEN Consultant to assess its standards providing presumption of conformity to PED, hence allowing their reference to be cited in the Official Journal of the European Commission.

However CEN/TC 69 must be aware that the situation is about to change: the European Commission is considering stopping the funding of these CEN Consultants. Therefore CCMC has been leading a reflection to put in place self-assessment from Technical Committees for the draft standards aimed to provide presumption of conformity to European Directives.

It is presently difficult to assess the impact of this change on the work of CEN/TC 69.

Thirdly CEN/TC 69 must follow all new possible requirements from existing or new European directive/regulation and must define position considering the possible standards revisions or creations.

Lastly CEN/TC 69 has had also to take into account the decreasing availability of experts. Some countries are less or no more involved in the standardization work. In the last decade, CEN/TC 69 has encountered difficulties to ensure the involvement of active experts. This may hinder the progress of standards developed by CEN/TC 69.