BUSINESS PLAN

SPACE HEATING APPLIANCES WITHOUT INTEGRAL HEAT SOURCES

EXECUTIVE SUMMARY

Business Environment

The scope of CEN/TC 130 is:

- to prepare product standards defining the characteristics of space heating appliances without integral heat source (e.g. radiators, heating panels, convectors with or without a fan)
- to prepare test standards for determining the nominal thermal output of above mentioned appliances in order to provide a common basis for their evaluation as well as to determine the thermal output in different operating conditions to be used as a basis for designing heating systems, insuring the reproducibility and repeatability of test data within stated tolerances
- to prepare product standards defining the characteristics of radiators valves and fitting operated automatically or manually with or without presetting to control the heat emission
- to specify methods and procedures to evaluate all the other characteristics included in product standards
- to define criteria and procedures to provide factory product controls to maintain the product characteristics within stated tolerances

Parties involved

Manufacturers
Consumers
Designers
Public Authorities
Laboratory

Benefits

The following benefits for industry, trade and consumers can be stated:

• Standardized and coordinated evaluation methods for the various heat emitters available on the market
• Replacement of national standards with single European standards
• Support of the evolution of new products on the market
• Elimination of trade barriers

Priorities

- Revision of the existing product standards to be in line with the new Construction Products Regulation 305/11/UE
- Extension of the present standards to low temperature and dry cooling applications
- Standardization of new products present on the market
- Removal of barriers related to trade and installation
- Removal of barriers related to national technical requirements

1 BUSINESS ENVIRONMENT OF THE CEN/TC

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:

Economical and legal aspects

Heating appliances without integral heat sources, and particularly radiators and convectors, are traded on the basis of their thermal output. The standard thermal output is therefore the basis for determining the selling price and for comparing different products.
This has determined legal disputes due to the variety of testing and rating methods, to different national Standards and to the lack of Standards to insure the repeatability of test results within specified tolerances.
The aim of the European Standard is to provide a standardised and harmonised method for determining thermal outputs which are repeatable within sufficiently narrow tolerances, therefore providing a valid instrument to answer to the economical and legal aspects.

Political and technical factors

The political factors are linked with European energy plans concerning energy savings in the use of fossils fuels as well as to promote renewable energies (e.g. solar) and different energy generation methods (e.g. heat pumps). From the technical standpoint these systems are low temperature systems requiring suitable terminal units with reliable performance data.

The main essential requirements of heat emitters are to be identified as follows:

1. Thermal output (rated and in different operating conditions). The thermal output is to be determined in standardized conditions ensuring repeatability and reproducibility of the test results within standardized tolerances.
2. Fitness to withstand without deformation or breakage the stated maximum operating pressure stated by the manufacturer
3. Characteristics of the painting and protective layers (safety, hygienic, durability)
4. Durability

The essential characteristic 1, is a prerequisite:

1. To assess the commercial value of the product (radiators are traded on the basis of their rated thermal output).
2. To enable the heating system designer to size heat emitters on the basis of the calculated space thermal load (see EN 12831).

The standardization work carried out by CEN TC 130 is therefore to be considered important in any energy saving plan.

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:

Structure of the market

The products in which CEN TC 130 is involved cover different market sectors and they are therefore to be considered separately in this regard.

Radiators and convectors:

Market sector: mainly residential and commercial
Radiators and similar appliances still cover a large proportion of the heat emission product market in Europe.
Radiator production is presently based on the following technologies:
* Steel radiators: products obtained from sheet steel or steel pipes in different families
* Aluminium radiators: die-cast products (sectional) or products obtained by assembling extruded aluminium profiles)
* Cast iron radiators: sectional models
Radiators as low temperature heating systems are suitable for heating systems connected to heat pumps or other low temperature heat production systems.
Radiators are assembled on the basis of a project involving the determination of the heat emission in relation to the calculated heat loads.
European market total sales volume: around 2.9 billion EUR.

Radiant heating and cooling systems embedded in the building structures

Market sector: mainly residential and commercial
The bulk of to-day's market is covered by systems consisting in pipes with or without additional heat distribution devices embedded in floors.
These systems are low temperature heating systems suitable also for heating systems connected to heat pumps or other low temperature heat production systems.
These systems are field assembled on the basis of a project involving the determination of the heat emission in relation to the calculated heat loads.
They can, however, be assimilated to products since they are presently traded as kits consisting in pipes, distribution headers, controls and other accessories together with a project.
Total European market: as kits and not products are involved the figure is to be considered a rough estimate around 1.1 billion EUR.

Ceiling Mounted Radiant Panels

Market sector: commercial and industrial
Radiant heating panels are mainly used in heating systems for large high ceiling spaces.
Having a sizeable heat emission by radiation they can provide comfort conditions with a lower air temperature as compared with mainly convective heat emitters.
Total European market: around 100.000.000 EUR.

Radiator valves and fitting

Market sector: residential and commercial
Valves fittings are components that allow a secure connection to the heating system with radiators and convectors, and to allow maintenance of heating systems
Total European market: around 10.000.000 EUR.

2 BENEFITS EXPECTED FROM THE WORK OF THE CEN/TC

- A main advantage of the standards produced by CEN/TC130 lies in the removal of technical obstacles arising from contradictory national standards directives, practices and from user specifications.

- Many standards elaborated and under revision supported the CPD 89/106/EC. Two standards have already been cited in the OJEC and confer presumption of conformity with the essential requirements of CPD. At present these standards are under revision to comply with the CPR requirement
- Standards under elaboration are expected to respond to recent changes and major innovation in the field

3 PARTICIPATION IN THE CEN/TC

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 THE CEN/TC AND STRATEGIES FOR THEIR ACHIEVEMENT

4.1 Defined objectives of the CEN/TC

To develop and maintain European standards for heating appliaces without integral heat sources, particularly for:

- Radiators, convector and similar appliances
- Ceiling mounted heating panels
- Ceiling monted cooling panels
- Floor, wall, ceiling heating systems and components
- Floor, wall, ceiling cooling systems and components
- Radiators valves and fittings

The Committee is working to up-date these published Standards to take into account requirements of new products and improvements derived from extensive activity of European laboratories.

Cooling application

Some of the terminal units included in the TC program can also provide sensible cooling. In this case the cooling test can be performed contextually with the heating test and the heat tranfer models for cooling can be derived from the heating models.
CEN TC 130 experts are working on this aspect in order to include cooling applications in the scope of the standards.

New prefabricated radiant units

New prefabricated units emitting heat mainly by radiation are now available. TC 130 is developing a standard for fan assisted radiators and convectors.

Thermostatic radiator valves

With resolution CEN/BT C69/2012 the compentence for the revision and maintenance of EN 215 "*Thermostatic radiator valves – Requirements and testing*" has been included in the CEN/TC 130 programm of work.

4.2 Identified strategies to achieve the CEN/TC.s defined objectives.

Specific working groups have been created for the different kind of products covered by CEN/TC 130 standards.
Hence, the work program has been divided into 6 working groups:

WG 7 Pre-fabricated heating panels, definitions, testing and methods for determining heat outputs
WG 9 Floor heating - Systems and components
WG 10 Trench convectors and fan assisted radiators and convectors
WG 11 Radiators
WG 12 Connections for heating appliances

The working groups are responsible for producing all the revised draft standards and presenting the final results to the technical committee for approval prior to public enquiry or formal vote.

The working groups organize their work and the necessary meetings themselves, as required and agreed by the TC 130 committee.

CEN/TC 130 plenary meetings are held once a year. Further voting and exchange of information within the technical committee take place by correspondence.

CEN/TC 130 has established and maintains the following liaison:

CEN/TC 57	Central heating boilers
CEN/TC 156	Ventilation for buildings
CEN/TC 228	Heating systems in buildings
JISC	Japanese industrial standards committee
AQUA	Europa European Association of water and wastewater industry
EU-RAY	European association of the hydronic surface heating and cooling industry
NORMAPME	European Office of Craft/Trades and Small and Medium-sized Enterprises for Standardisation

4.3 Environmental aspects

CEN/TC 130 considers the following environmental aspects in the standardization of space heating appliances without integral heat sources:

- raw materials: aspect relating to the reduction of the quantity of material using during construction and the choice of materials including coating;
- high efficiency of the interaction between heating appliances and space to be heated;
- recyclability at product end of life;
- dangerous substances;

In line with the CEN policy of addressing environmental issues in product standards CEN/TC 130 will encourage experts to include environmental issues at any stage in the standard development process

CEN/TC 130 will consider environmental aspects during the preparation and revision of product standards and recommends the use of an environmental checklist according to CEN Guide 4 "Guide for addressing environmental issues in product stantards"

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

The activity of CEN TC 130 is supported by the active participation of product and laboratory experts from the main countries. A much wider participation from other European countries would be desirable.