Relation between the IEA HPP Annex 28 and the work of CEN

IEA HPP Annex 28

The IEA HPP Annex 28 [1] started his work in January 2003. The objectives of the project are the development of comprehensive test procedures for alternate and simultaneous operating heat pumps for production of space heating and domestic hot water production as input to adequate calculation methods for the seasonal performance of these systems. The developed test procedures and calculation methods are intended as input to standardisation committees, on the European level to CEN. Therefore, close and continuous cooperation with the respective technical committees of CEN are an important issue in the project work of the Annex.
Both testing and calculation are required for standards concerning combined operating heat pump systems and thus are strongly related to the European standardisation process. Both for testing as for calculation of combined operating heat pumps, no standards on the European level exist, and only national regulations in different European countries cover partly combined operating systems.
As up to now 10 countries are participating in the IEA HPP Annex 28, the opportunities to develop a comprehensive framework, which can be easily transferred to standards are auspicious.

Background of the work of CEN in the field of the IEA HPP Annex 28

Energy performance directive (EPD) [2]

In the European Union, the building and system standards are to be harmonised to transfer good practise experiences of single EU members and thereby explore energy saving potentials. The harmonisation is effectuated under the Title „Directive .. on the Energy Performance of Buildings“ (EPD)[2]. The EPD came into operation in december 2002. CEN activities in the framework of the EPD comprises a revision and further development of standards both on the building side as on the systems side. Several working groups are active in the building sector and work on a series of standards for the calculation and design of buildings and building related technologies and the respective testing of the components in use. For the subject of IEA HPP Annex 28 CEN/TC 228 dealing with the calculation of heating systems is most important.

Mandate of the EU to CEN/CENELEC for the testing of domestic hot water appliances [5]

Based on the Council directive 92/75/EEC [6] on energy labelling the EU has given a mandate to CEN/CENELEC to elaborate adapt and adopt European measurement standards for water-heaters, hot water storage appliances and water heating systems [5]. As heat pumps are concerned as well the standardisation work has also close connection to the work of the IEA HPP Annex 28. The mandate will mostly be dealt within the CEN technical committees TC 113 (test procedures for the systems) and TC 228 WG 4 (requirements of the calculation method concerning the test procedure)

Relation between the IEA HPP Annex 28 to CEN

CEN/TC 113: Heat pumps and air conditioning units

CEN/TC 113 is a product technical committee, i.e. is to produce product specific standard. TC 113 is active in the revision of test procedure for heat pump systems.

- CEN/TC 113/WG 8 developed the new test standard prEN 14511 [8] replacing EN 255 [11], EN 814 [10] and EN 12055 [9].

- A new working group of the TC is to be founded to revise the EN 255-3 [4], the actual standard for testing heat pump water heaters.
  On the Madrid working meeting, TC 113 was informed about the activities of the IEA HPP Annex 28. The secretary of TC 113 was charged to create a liaison between TC 113 and the

operating agent of the IEA HPP Annex 28 (decision 208) [7]. The contact information between the operating agent and the convenor of TC 113 has been exchanged.

CEN/TC 228: heating systems in buildings

CEN/TC 228 is system technical committee active in the field of heating systems in buildings. Subjects covered by TC 228 are design, installation, commissioning, instruction for operation, maintanance and use of heating systems as well as calculation method for the design heat load and the system performance.

- CEN/TC 228/WG 1 is to develop design criteria of water based heating systems. Prof. Dr. Thomas Afjei, the national team leader of Switzerland in IEA HPP Annex 28, is participating in WG 1.

- CEN/TC 228/WG 4 is to develop calculation methods for heating systems in the framework of prEN 14335 [3]. Carsten Wemhöner as operating agent of the IEA HPP Annex 28 is participating in the subgroup of WG 4 which deals with heat pump systems.

- Calculation of DHW systems is also treated in WG 4, so results of the IEA HPP Annex 28 on this subject can be directly brought in the standardisation process, as well.

Summary:

Objectives of the IEA HPP Annex 28 are strongly related to the standardisation work on the European level. Therefore close cooperation with the respective working groups of CEN are already in operation in the field of calculation methods and will further on be established with the constitution of new working group in the field of testing. To produce common standards which enable a fair treatment of a variety of available products on the European market, a broad contribution of European countries is important. The IEA HPP Annex 28 is thus a platform to work out results on the research level, which can be transferred directly into the respective committees of the European standardisation.

References

[1] Zogg, M. et al (2003), test procedure and seasonal performance calculation of residential heat pump with combined space and hot water heating, legal text Annex 28, IEA HPP, Paris

[2] Directive 2002/91/EC of the European Parliament and of the council of 16 December 2002 on the energy performance of buildings

[3] prEN 14335:2002, Heating systems in buildings, methods for calculation of system energy requirements and system efficiencies

[4] EN 255-3:1997, 'Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors - Heating mode - Part 3: Testing and requirements for marking for sanitary hot water units

[5] Mandate to CEN and CENELEC (2002) for the elaboration and adoption of measurement standards for household appliances: Water heaters, hot water storage appliances and water heating systems, TREN D1 D(2002), Brussels

[6] Council Directive 92/75/EEC of 22 September 1992 on the indication by labelling and standard product information of the consumption of energy and other resources by household appliances, Official Journal L 297, 13/10/1992, p. 0016 - 0019)

[7] CEN/TC 113 N 381 E, Resolutions taken by CEN/TC 113 17th meeting, Madrid, 6/7. 3 2003

[8] prEN 14511:2003 Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling

[9] EN 12055:1998 Liquid chilling packages and heat pumps with electrically driven compressors - Cooling mode - Definitions, testing and requirements

[10] EN 814:1997 Air conditioners and heat pumps with electrically driven compressors -Cooling mode

[11] EN 255:1997 Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors - Heating mode