

Increasing need for reliable performance data of HVAC products



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Energy efficiency has a key role in the EU policy. Ecodesign regulations, EPBD requirements and Energy Efficiency Directive present strong requirements to reduce energy consumption of buildings and GHG emissions. HVAC systems play a major role in improved energy efficiency. Good performance of systems is based on good and reliable products. The main focus of this issue is on energy efficiency of air conditioning and heating products, particularly how certified performance data can support high performance buildings.

Nowadays many forces are acting to shape the building industry and HVAC, but there is only one common key performance indicator: energy efficiency. Components, products, HVAC systems, and buildings need to be characterized with increasing quantity of performance data. All actors in the value chain from building designer, building contractor, manufacturer of building material, building components and building equipment, to building operator and building owner are looking at a common direction: better performing buildings. The energy saving quest for the designer and the engineer is about the need to find, manage and analyse a huge quantity of performance data to deliver better project performance within the given short timeframe.

The building industry and product suppliers like HVAC manufacturers need to operate in a very rapidly changing environment. Strong and fast material

and product innovation including new product and new hybrid product innovation are flooding the market. Product complexity is going up, but a new product and a new concept need to be properly defined and characterized technically. The amount of technical data needed to describe material or product performance according to a new set of rules or conditions is increasing manifold. The number of technical conditions and rules to describe the thermal performance of a building or project is also increasing significantly. We cannot ignore that this tremendous challenge is happening in a new era. An era of optimum efficiency is required to succeed in this period of economic recession, minimum financing flexibility, reduced safety margin and only long to very long term gains as the reward, but with immediate commitment to succeed. We have to do a lot more and better with less for sure, to travel the path of efficiency. A large choice of design, materials, components and equipment being part of the ultimate solution, the quantity of alternative product and performance data to design is increased tenfold by this wide and rich market offering.

Products with performance that can be compared must only be considered in order to reach a decent data integrity pool to work from. Comprehensive and detailed performance data must be based on the same test conditions on paper and in practice. The same tolerance is required for each performance parameter being considered or computed. A third party data performance process with accreditation is sought for continuous update. Data and associated data formats must be readily available simultaneously for a wide range of suppliers and competitors. Voluntary third party certification should be investigated considering its strong built in potential for the benefit of the consultant.

Based on the BMS and monitoring systems, we have a flood of data never seen in this industry before. How can we use these data for energy efficiency of buildings? Several European projects and company research are looking for the answer for this question. **3E**