

Ductwork standard ends confusion and reveals new opportunities



The introduction of the British Standard for cleanliness levels in ductwork in April 2012 has lived up to its promise of ending confusion within the industry. **Andrew Steel** (pictured), Managing Director of **Airmec**, argues that it is both a duty of care and a business imperative to clean and maintain systems – just as it was before BS EN 15780 came into force.

BS EN 15780:2011 Ventilation for buildings – Ductwork – Cleanliness of ventilation systems clearly defines vital goals to be achieved by anyone responsible for maintaining ventilation systems by recognising that different room uses require different standards and that newly installed ductwork should be handed over in a clean condition.

The harmonised British and Euro standard defines cleanliness criteria, recognising that absolute cleanliness cannot be achieved but that a degree of objectivity is needed in assessment. You can be sure ventilation ductwork inspected and maintained according to the new British Standard is really clean according to objective test and measurement results.

Standardised levels of cleanliness in ductwork systems are defined according to a building's intended use. So ventilation system specifiers, installers and facilities managers now have clear guidance, a published set of standards and clear criteria that can apply to all building ventilation ductwork.

This standard applies to both new and existing ventilation and air conditioning systems and defines the assessment criteria of cleanliness, cleaning procedures of these systems, and the validation of the effectiveness of cleaning. It also applies to products used in air conditioning and ventilation systems for human occupancy. Although the standard doesn't apply to installations for industrial processes, it does apply to other areas of

the building such as office areas.

There were many in the HVAC industry who said they weren't confused in the first place and TR/19 has served us well, so why change at all?

The bottom line was that the UK really had no choice but to introduce this British Standard as our national implementation of EN15780: 2011. A vast international reservoir of experience went into creating the new standard and as expected the well-respected Building and Engineering Services Association (B&ES) standard TR/19 was updated in 2013 to reference the new British Standard amongst the other updates it included.

Consequently a positive way to view the standard would be to grasp the opportunity to take a fresh view of your installed systems. After all, BS EN15780:2011 has been introduced at a time when businesses are looking at the carbon footprint of every item of equipment they operate and looking for ways to find savings, so re-examination of cleaning and maintenance regimes is on the agenda anyway. There is not so very much to distinguish the new standard from the familiar HVAC TR/19 and, indeed, both can only offer guidance, not mandatory standards, so compliance with the new standard does not require big changes to be made.

Good practice

At Airmec, we always saw the standard as a positive development that would make us all look again at familiar practices and assumptions. It ensures that we are all



aware of, and in agreement on, what is good practice in cleaning and maintenance and how to measure its effectiveness. And as the often-quoted saying goes, if you can't measure it, you can't manage it.

We often see systems that, according to the logbook, have been regularly cleaned but which, by professional standards fall well short of acceptable, safe and efficient good practice. Many users' philosophy, which was typically set up with a safety brief only, has not been reviewed for years and does not consider energy efficiency or equipment service life as objectives. The new standard gives us all a benchmark and can be an eye opener for building managers.

The British Standard also cross-references with other standards that apply to HVAC systems such as BS EN 12599:2000 which defines test procedures and measuring methods for new systems. Finding a way around the standards maze will never be easy, but this new standard definitely appears to be a step in the right direction, and should help managers to understand their obligations and help them manage their overall running costs.

The ultimate goal for facilities professionals is to design and build a system enabling good standards of cleanliness to be maintained throughout the life of the equipment easily and inexpensively. The new standard does set out precisely what the level of cleanliness should be when a new system is handed over, depending on the type of building and level of risk its use indicates. It is worth remembering however, that while much of the publicity around BS EN 15780 has focussed on its guidance on new ductwork it also applies to existing ventilation and air conditioning systems. Application of the new standard can also serve to increase the service life of expensive ventilation



equipment – a concept that proves popular in any boardroom these days.

Dust levels

The Standard clearly defines cleanliness values for existing ductwork depending on application. As an example dust levels should be <3.0g/m² in a medium risk building (4.5g/m² for re-circulation and secondary ductwork). Medium risk areas cover offices, hotels, restaurants, schools and the like. A typical low risk area would be a low-occupancy storeroom and high risk would be, say, treatment areas of hospitals.

This is not the place to go into much more the detail on the new standard, but the key point to remember is that BS EN 15780:2011 Ventilation for buildings –

Ductwork – Cleanliness of ventilation systems clearly defines, for the first time what is considered acceptably clean in ductwork and differentiates pragmatically between different types of building use to define low, medium and high risks. This enables building managers to plan appropriate and proportionate cleaning and inspection regimes. By use of this standard facilities professionals can unambiguously

- classify the risk
- assess the need for cleaning
- assess the frequency of cleaning required
- decide what method of cleaning to adopt, and
- measure objectively the effectiveness of cleaning and adjust their regime as necessary.

At Airmec we have trained all of our technicians and consultants to undertake inspections that both comply with the new standard and also seek to emphasise that duct cleanliness is not just purely a safety issue. An appropriate duct cleanliness maintenance regime can also provide significant contributions to energy efficiency. Consequently as utility prices continue to rise and the penalties to businesses for wasting energy increase an effective cleaning and maintenance regime can deliver a meaningful return on investment.

In summary both the duty of care and business imperative to clean and maintain systems is just the same as it was before BS EN 15780 came into force, but now there is virtually no room for doubt over the regimes that need to be in place. Doing too little is potentially dangerous and leads to inefficiencies; doing too much means paying too much. This standard really does help you to judge and quantify what really is best for your building and occupants.

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