Key Fire Sprinkler Clauses

BS 9999:2008 - *Code of Practice For Fire Safety in the Design, Management and Use of Buildings*

Compared to Approved Document B (ADB) this standard offers a more flexible approach to building design, incorporating fire engineer principles. Unlike ADB this standard considers the occupants who will inhabit a building as well as the buildings characteristics.

BS 9999 allows for more attractive trade-offs to be gained should a fire sprinkler system be installed. Importantly by installing a fire sprinkler system the fire growth rate can be reduced, thereby allowing for a reduction in the risk profile of a building (8.5.3). Indeed if sprinklers are installed, the fire growth rate can be reduced by one level in Tables 4, 12 and 13, subject to defined limits.

For example an occupancy which was determined to have a fast fire growth rate, could be downsized to a medium fire growth rate. As the risk profile of a building can be reduced savings can be made:

- ✓ Longer travel distances – the 45m rule can be extended.
- ✓ Larger compartments – larger open spaces.
- ✓ Smaller doors
- ✓ Relaxed fire resistance between compartments
- ✓ Relaxation in heat detectors

An example of how a sprinkler system can reduce a properties risk profile:

A property which will have awake, but unfamiliar occupants and a fast rate of fire growth will result in a B3 risk profile. A sprinkler system would reduce this to a B2 category as the fire growth rate would be reduced.

The original B3 risk profile would have restricted travel distances to 16m in a single direction and 40m (more than one direction). However, as we have now reduced the risk profile to B2, we can enjoy more freedom with 20m and 50m. Similarly if we had kept the B3 risk profile we would have had to maintain an exit width of 6mm per person. A B2 profile enables us to reduce this to 4.1mm.

As such sprinkler systems can in fact bring about significant through design flexibility.

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