

All fired up ... for new date

Industry faces a new deadline for changes to fire testing, writes Ecolibrium's Mark Vender.

The Australian Building Codes Board (ABCB) has issued a corrigendum (a correction in other words) for NCC 2019, which delays the changeover to new testing requirements for passive fire protection systems. Previously, as of May 1, 2022, these systems were to be tested to the latest version of AS 1530.4; this has now been pushed back to September 1, 2022, in line with the revised adoption date of NCC 2022.

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The move comes amid calls from industry stakeholders for more time to prepare for the changes. A number of fire damper manufacturers have flagged a lack of suitably tested products, which could lead to problems with non-compliance. Manufacturers of other common passive fire-protection products are in a similar position. One notable case is that of fire-rated duct.



The changeover to new testing requirements for passive fire systems has been delayed.

TESTING TIMES

Normal HVAC ducts stop operation or shut down automatically in fire mode. Where these ducts pass through fire-rated barriers, they require a fire damper for fire-stopping the opening.

Other ducts operate in building fire mode to supply air for pressurisation or to exhaust hot smoke. These cannot contain fire dampers, and require a fire resistance level, or FRL. This is done by adding a fire-proofing material – such as fire spray, fire board, or duct wrap – and conducting a series of fire tests to AS 1530.4.

Testing is done for internal and external fire exposure.

Internal fire exposure occurs when there is a fire inside the duct or very hot exhaust products. In this test the duct surface must be kept cool enough that combustibles close to the duct will not ignite. It is also important for the duct to keep its cross-sectional area so it can exhaust at the design flow rate.

TRIAL BY FIRE

Fire testing is also done for external fire. In this case, the support system must hold the duct up for the duration of the FRL, and the internal temperature inside the duct must stay below the fire test temperature rise limit.

The testing is rigorous. It is conducted in a full-scale fire test furnace, subjecting duct assemblies to temperatures above 1,000°C for periods of up to four hours. The tests are also expensive, costing more than \$50,000 each.

And according to Trafalgar Group owner John Rakic, the requirements in AS 1530.4-2014 are more onerous than the old ones. He says this means increased fire protection materials will be required.

"Since 2005, internal and external fire protection have been the roughly the same thickness," he says, "so they just use the same thickness for both internal and external fire."

Rakic points out that the requirements for external fire testing omitted the temperatures measured on the inside face of a duct in the determination of the FRL.

APPROPRIATE PROTECTION

"Now that the grandfather clauses are being killed off, we will see fire protection on ducts provide the appropriate protection in accordance with fire test methods and internationally accepted performance criteria used in the NCC and AS 1668.1," says Rakic.

"Designers and builders will need to read the NCC and AS 1668.1 and determine what each duct is used for and whether it needs internal fire testing, external fire testing, or both."

Rakic also notes that a number of manufacturers do not presently have compliant products – and the industry in general is not well-placed for the changeover to AS 1530.4.

"People need to be aware that the requirements for fire-rated duct are changing, and externally tested ducts will have the most significant change."



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To read the Corrigendum to NCC 2019 and NCC 2019 Amendment 1, scan the QR code.