

TECHNICAL ADVISORY NOTE

Flammability Index verse Non-Combustible: What’s the Difference?

The National Construction Code of Australia (NCC) uses *flammability index* and *non-combustibility* to define the required fire performance properties for many construction materials. Understanding the difference between these two commonly used fire performance criteria is therefore crucial when trying to select the right material for an application.

While *flammability index* and *non-combustibility* both relate to fire, they measure different performance attributes and express very different properties about the material being assessed. These fire measures are not interchangeable and regardless of a third-party endorsement, every material has fundamental characteristics that need to be tested to allow comparison.

Terms such as non-flammable, low combustibility, or similar phrases avoid correlation to the NCC fire performance criteria and should be viewed with caution until the *flammability index* and *non-combustibility* data is obtained to allow a direct comparison with other products. If you are in doubt about the performance of material you are selecting, simply ask the manufacturer for evidence of compliance to the NCC and supporting test data.

The table below will further help to explain the differences between these fire performance properties.

	Flammability Index	Non-Combustible
Simple Definition	How easily a material catches fire	Does not burn if exposed to fire
NCC2019 Definition	Flammability Index means the index number as determined by AS1530.2	Not deemed combustible as determined by AS1530.
Application in NCC	Ranked numbering system depending upon flame height	Simple pass or fail criteria: Combustible or Non-Combustible
Test References	AS1530 Part 2 Test for flammability of materials	AS1530 Part 1: Combustibility test for materials
Attribute Measured	Used to assess the potential fire hazard of material during the early growth of fire where a discriminating or indexed assessment of flammability can be useful when comparing materials.	Establishes the potential fire hazard of material during the fully developed stage of a fire where the reaction of the material to the intense temperatures experienced in this environment need to be understood

	Flammability Index	Non-Combustible
Scope of Australian Standard	<p>Defined for use only with thin sheets of woven, pliable materials. The specimen is mounted vertically on a frame and a flame is applied to pure alcohol heat source at the base of the material. The material is given an index based upon a calculated result combining the following criteria:</p> <ol style="list-style-type: none"> 1. Height of flame; 2. Time of flame; 3. Heat factor. 	<p>Defined for use with most materials that can be prepared into a 50mm thick test section. Determines material combustibility by exposing the material sample to 750°C inside a furnace for a minimum of 30 minutes and assessing it based upon the following criteria:</p> <ol style="list-style-type: none"> 1. Maximum material flaming cannot exceed 5 seconds; 2. Maximum temperature rise in furnace cannot exceed 50°C; 3. Maximum temperature rise of material cannot exceed 50°C.

For further information

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