

## SIA Technical Guidance Note 2/18: COMBUSTIBLE MATERIALS IN CLOSE PROXIMITY TO FREESTANDING STOVES

**If possible always avoid using combustible materials above or adjacent to a freestanding stove.**

This document is not intended to be definitive but as an informative guide to best practice in identifying hazards and mitigation of risk for appliance manufacturers, installers and end users of stoves.

**ALWAYS refer to appliance manufacturers instructions for details of tested clearances to combustible materials and other reference items before making decisions based on other criteria and experience.**

As combustible shelves, timber fireplaces, lintels and beams have potentially thousands of possible configurations in conjunction with stoves outset or set partially or fully within chambers, it is not possible to give firm tested guidance dimensions to these features. Ventilation within a fireplace chamber may reduce temperatures but its effectiveness in practice will vary due to individual installation conditions.

If siting of combustible materials above a stove is unavoidable, as a guideline, materials that are in 'line of sight' to the stove are more likely to overheat due to direct radiation from the stove body than materials that are not in 'line of sight' (e.g. with stove fully inside a chamber). Materials above the stove are far more likely to overheat than materials alongside. Particular care should be taken over conduction into combustible materials from fixings which may be heated significantly by their position within or near a flue passage way for example.

A guideline limiting temperature for solid timber (not surface finishes) is approximately 80-85 degrees C with a normal ambient room temperature. In some instances, surface finishes may be discoloured or degraded at significantly lower temperatures than this. **Choose temperature tolerant materials and finishes wherever possible.**

Possible Hazard	Possible methods to reduce risk
<p><b>Heat conduction through metal fixings:</b> Heat damage to combustibles can be caused by conduction of intense heat through metallic fixings into combustible materials. Always inspect an existing installation for this hazard, particularly heat from flue-ways and above a stove that could be conducted by fixings into combustible materials.</p>	<p>Re-site or replace any existing fixings to ensure minimal conduction of heat. Ensure any new fixings are sited where they cannot pick up significant conducted heat through construction materials or flue-ways.</p>
<p><b>Radiation or conduction of excessive heat from a single wall flue pipe connecting an appliance or the surface of a single skin stove body.</b> Radiation can increase substantially when the stove is run hotter than normal either inadvertently or through over firing of fuel load or air controls. Even if an installation seems to have had no problems in use to date, unless clearances are correctly set there remains an underlying risk that overheating damage may occur in future.</p>	<p>Manufacturers will state clearances from their appliances based on CE testing. Building Regulations guidance for horizontal clearance distance from combustible materials to a single wall flue pipe e.g. a connecting length is 3 x diameter. For example 450mm from a 150mm (6") flue pipe. This is still not a guarantee that overheating will not occur in unfavourable circumstances. Temperatures of combustible materials can be substantially lowered with a simple heat shield constructed of a non-combustible material and small air gap (6-12mm for example) between the shield and combustible material. <b>See BS8303 for guidance on shielding methods.</b></p>
<p><b>Combustible materials above a stove:</b> Wherever possible avoid this situation. <b>Beams or other combustible materials overhanging a chamber lip are particularly at risk from overheating.</b></p>	<p>Ideally remove all combustible materials and replace with non-combustible equivalents. Decorative lintels and beams can be obtained in non-combustible materials for example. Ensure that radiated heat cannot directly impact on the materials concerned either by siting the stove within a chamber or providing heat shielding between the stove and combustible materials.</p>
<p><b>Concealed combustible materials:</b> These can be concealed within load bearing or partition walls or in the form of battening behind wall surface cladding or other features. <b>Heat build up behind non-combustible surfaces may pose a risk to concealed combustible materials.</b></p>	<p>Always check the construction methods of partition or other walls for concealed timber within their constructions. All combustible materials closer than stove manufacturers tested distances must be removed or protected from the effects of both radiant and convected heat, including concealed battening, studding or framing.</p>
<p><b>Damage caused by use of fire rated boards or materials instead of non-combustible materials.</b></p>	<p>Fire rated boards are designed to give a limited protection from fire for a fixed period only. They may break down and lose strength and integrity after being exposed to heat for a duration and expose risks that have not been considered. These materials are not always suitable and should be replaced with true non-combustible materials.</p>