



shade&shield shutters

Shutters that work, we've got you covered!

Bryce Hedditch

Australian Standard Testing

Why is it important?

Windows and doors - BAL FZ

Windows and doors - What is important

- ▶ Per AS3959-2009, Sec 9.5, glazed window/door systems are required to be either:
 - ▶ Tested to AS1530.8.2
 - ▶ Have an FRL of -/30/-

The FRL of -/30/- was retained in the options in BAL FZ when the standard was issued, due to a lack of products in the market.

AS1530.8.2 requires -/30/-, plus a full cool down period without failure, plus internal radiant heat to be below 15kW/m².

Why is this important?

Why is AS1530.8.2 important?

- ▶ Radiant heat over 15kW/m² is not compatible with sustaining life.
- ▶ High levels of radiant heat will significantly overheat the interior of the house.
- ▶ High levels of radiant heat can ignite soft furnishings like synthetic fabric curtains, creating a secondary internal building fire. An internal fire is typically more toxic than a bushfire.

In simulated burn over testing, temperatures in excess of 200 °c have been recorded inside the building.

This is a result of insufficient radiant heat blocking!

Why is AS1530.8.2 important?

To survive a bush fire, especially in BAL FZ conditions, 2 elements are required from the whole building, including windows and doors:

- ▶ No breach of the fire into the house.
- ▶ Maintaining a safe environment inside the house for the duration of the fire, from a temperature and air quality perspective.

Failure to do either will result in loss of life.

BAL FZ tested window products (AS1530.8.2):

- ▶ Sonnenschutz BAL FZ shutter system, tested to AS1530.8.2 at Exova Feb 2010
- ▶ Paarhammer BAL FZ window, tested to AS1530.8.2 at Exova Oct 2011
- ▶ Nilfire BAL FZ window, tested to AS1530.8.2 at BRANZ late 2012

Windows and doors - BAL FZ

Advantage of tested systems:

- ▶ Sonnenschutz Shutters
 - Sub 6kW/m² inside shutter, ~ sub 3kW/m² inside window
 - Security.
 - Shading (harmony with fire weather).
 - Debris/impact resistance during fire event.
- ▶ BAL FZ windows (intumescent glass)
 - Sub 7kW/m² inside window
 - More design flexibility
 - Unknown debris/impact resistance during fire event.

Shuttered House Designs Country Cottage

Hardie Linea over fire stop plaster



Shuttered House Designs Modern

4.8m Slider
Minimal thresholds



Shuttered House Designs Modern

MgOx board rendered



Windows and doors - BAL FZ

Advantage of tested shutter systems:

- ▶ Safety when needed, clear views when not.
- ▶ Shading and security benefits.
- ▶ Cost impost over BAL 40 aluminium systems ~ \$7000 on a simple 3 bed house.

A 5.1

FURNACE TEMPERATURE AS3959-2009, AS1530.8.2

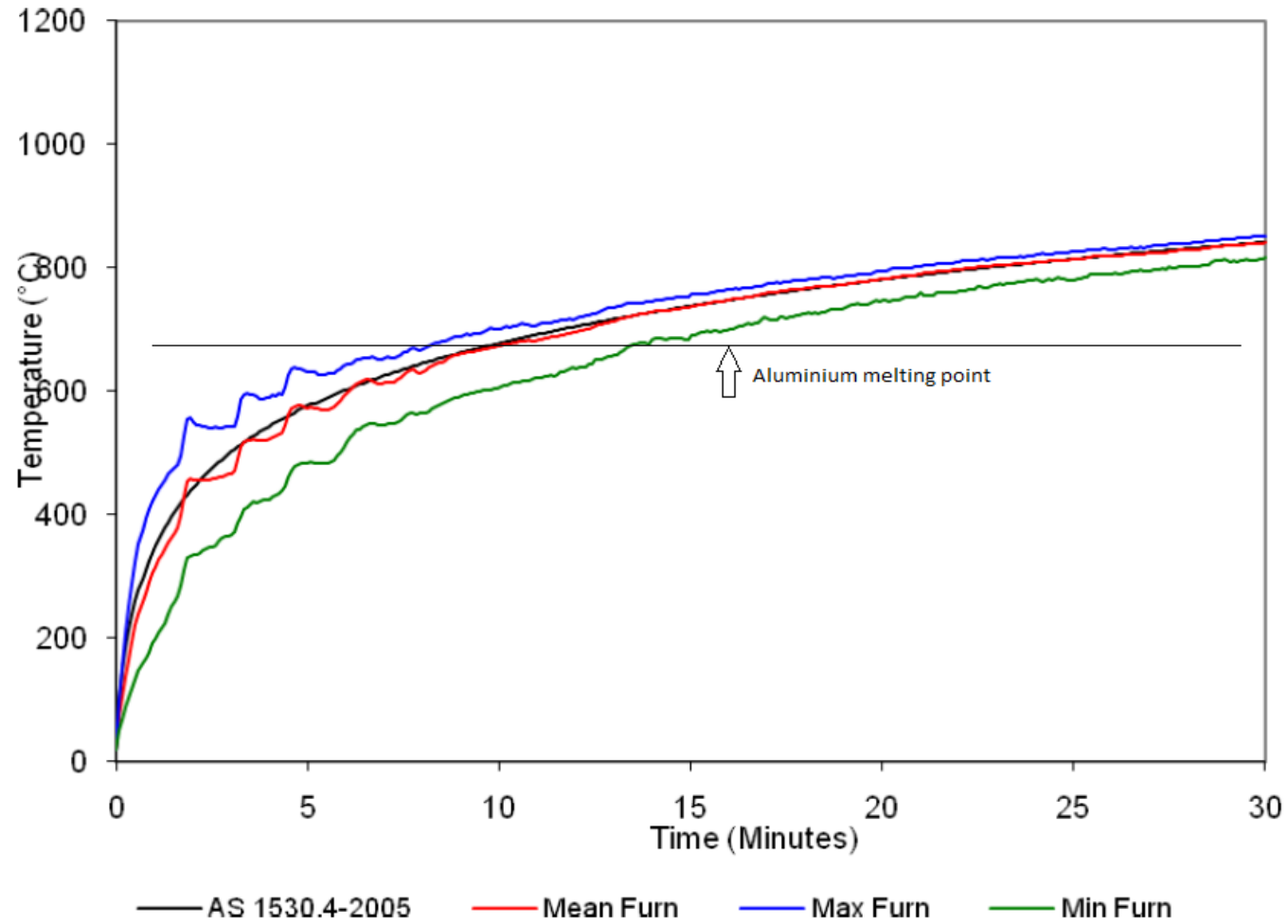
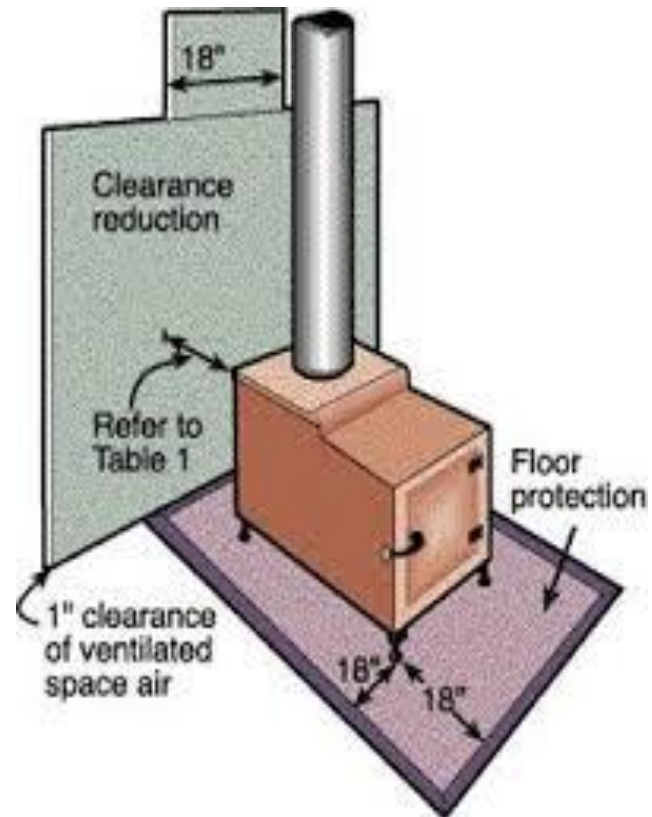


Figure A5.1: Furnace Temperatures vs. Time.

Windows and doors - AS 1530.8.2

Advantage of tested systems:

What is this?



Windows and doors - AS 1530.8.2

Advantage of tested systems:

What could go wrong?





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shutters

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