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CODEMARK™
CMA-CM40035 (Rev 1)

SAI004 ALUCOBOND FIRE BEHAVIOUR

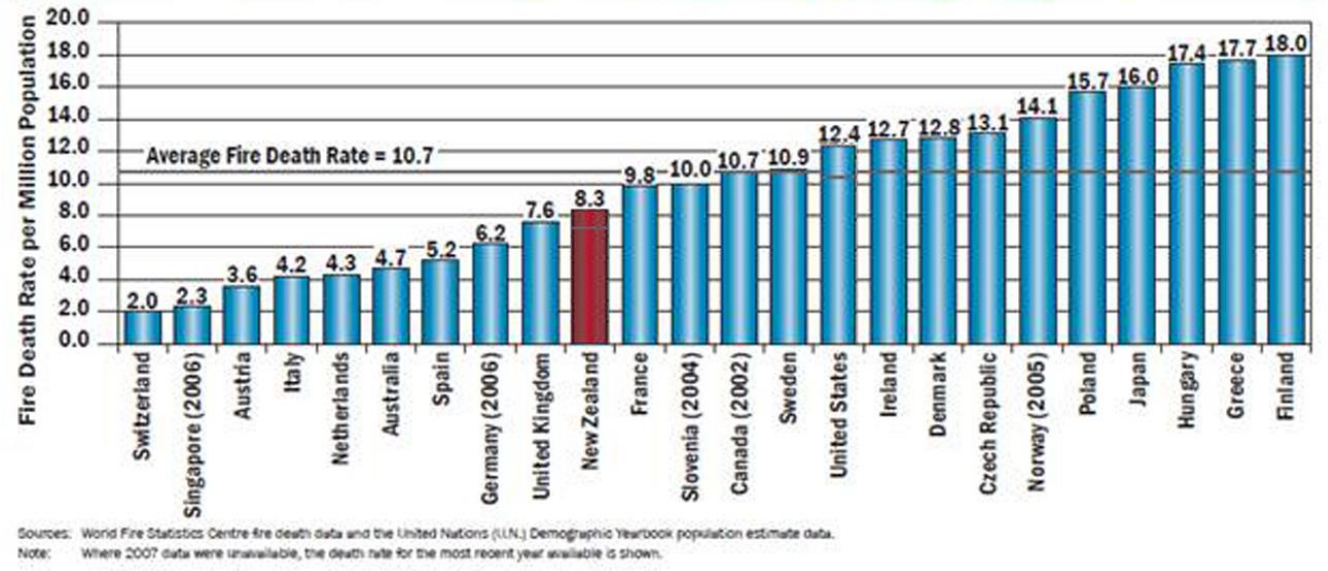
TELARC REGISTERED ™
Quality
ISO 9001

ALUCOBOND NZBC SECTION C3 COMPLIANCE

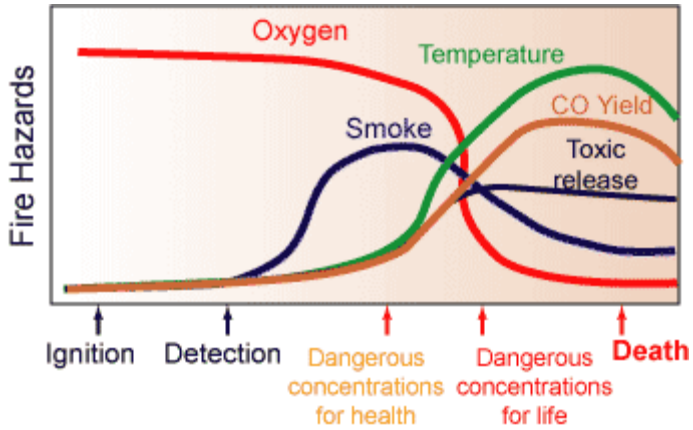
OVERVIEW

For valid reasons the New Zealand Building Code requires buildings to be constructed so that there is a low probability of harming people, even if they are not in close proximity to a fire source. People in a property or neighbouring property could also be harmed through **spread of flame of the exterior cladding** of a building, or by **spread of flame and smoke development inside a building**.

Figure 1. 2007 International Fire Death Rates per Million Population



Sources: World Fire Statistics Centre fire death data and the United Nations (U.N.) Demographic Yearbook population estimate data.
Note: Where 2007 data were unavailable, the death rate for the most recent year available is shown.



Reasons for fatalities:
1) 23% Smoke inhalation and burns
2) 51% Smoke inhalation only
3) 25% Burns only
4) 1% Other

NFPA Estimates 2003 – 2007: All fire related deaths, not only those in buildings

THE ALUCOBOND PLUS SOLUTION

The generic term for Alucobond is aluminium composite material (ACM) and there are many different ACM manufacturers. ACM is not used to stop fire since it consists of two aluminium skins covering a core material, usually 3mm thick; however quality ACM designed for use on a building can be expected to not spread flame in the event of a fire.

The facts are:

1) Many ACM manufacturers promote an "FR" version of their ACM product. Could FR reasonably be misinterpreted as Fire Rated, Fire Resistant or Fire Retardant? Some suppliers incorrectly refer to their FR product as non-combustible[1]. The reference FR is therefore relative and does not assure a certain performance.

   To avoid confusion Alucobond have two product versions featuring low combustibility and name them **Alucobond PLUS** and **Alucobond A2**.

2) "FR" versions between different ACM brands perform differently when exposed to fire. Naming a panel FR is therefore not stating it meets a minimum standard – it is just a product code and is solely dependent on the manufacturer's definition of FR.

   The Burnable Thermal Units (BTU) of the core material sandwiched between the aluminium skins affects the performance of an ACM under exposure of flame. Alucobond PLUS and A2 have low BTU values enabling it to pass testing accepted by the NZBC.

3) When evaluating ACM for suitability on a building section C3 *"fire affecting areas beyond the fire source"* of the NZBC stipulates the requirements for exterior and interior surface finishes. According to the definition of the code ACM is considered a surface finish on buildings and the acceptable performance measured as follows:

   a. Externally > Evaluated on the ability to not spread flame
      Alucobond PLUS complies by passing testing under NFPA 285.

   b. Internally > Evaluated by the amount of smoke production and heat released
      Alucobond PLUS complies by passing testing under ISO 9705 and is classified a group 1-S material, the best classification group available.

4) Alucobond PLUS is therefore suitable for both exterior and interior application in all risk groups of the NZBC. Alucobond "A2" is manufactured with an even higher specification which is less combustible and is mostly used in European countries.

At Kaneba we strive to be the most trusted provider of architectural cladding solutions in New Zealand, which is why we provide the ultimate product assurance in the form of a CodeMark.

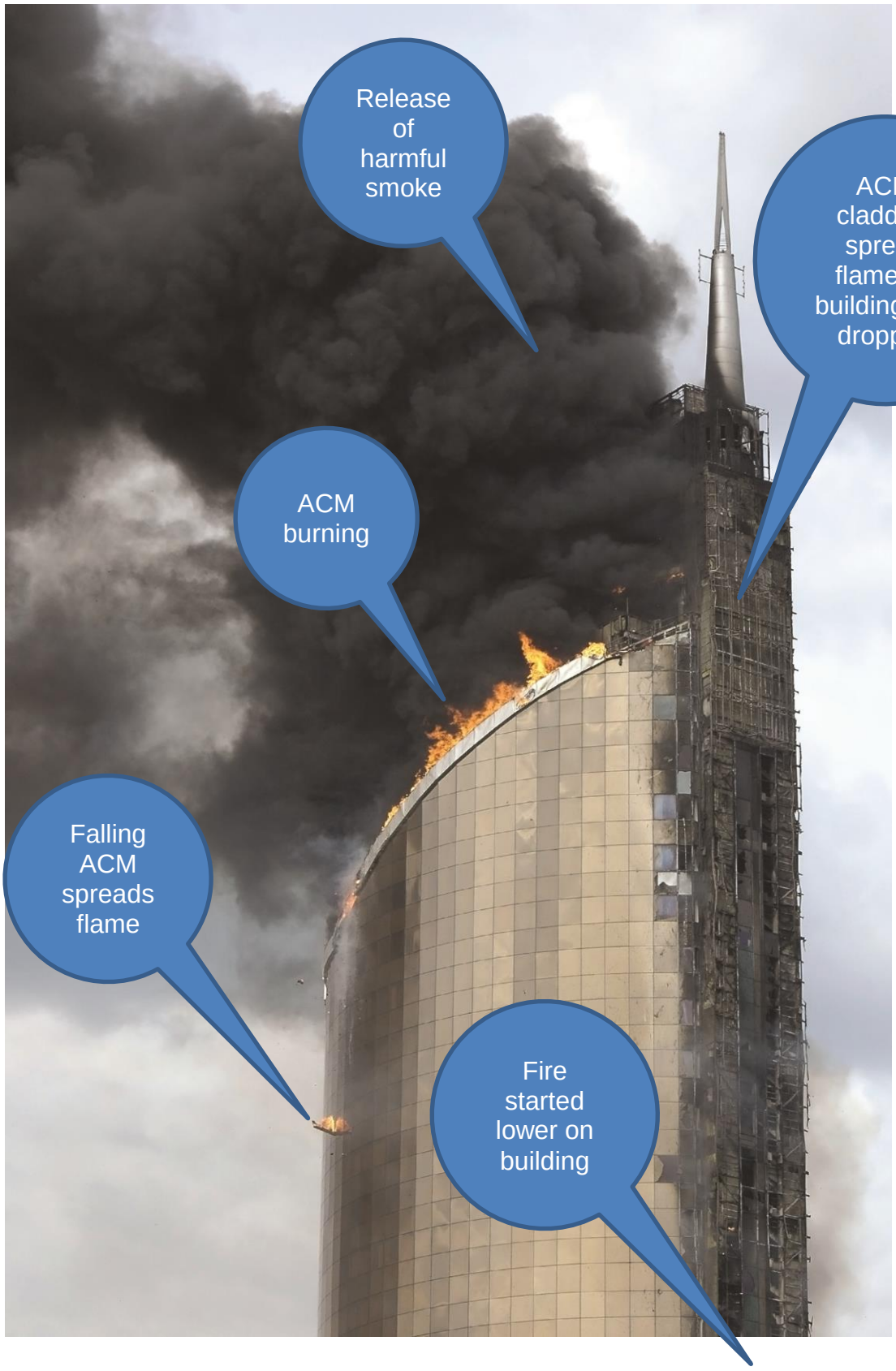
Kaneba Alucobond CodeMark certificate What is Kaneba Alucobond CodeMark?

It is essential that the job specific fire report is evaluated for the requirements of exterior and interior surface finishes.

For further support please e-mail jan@kaneba.co.nz

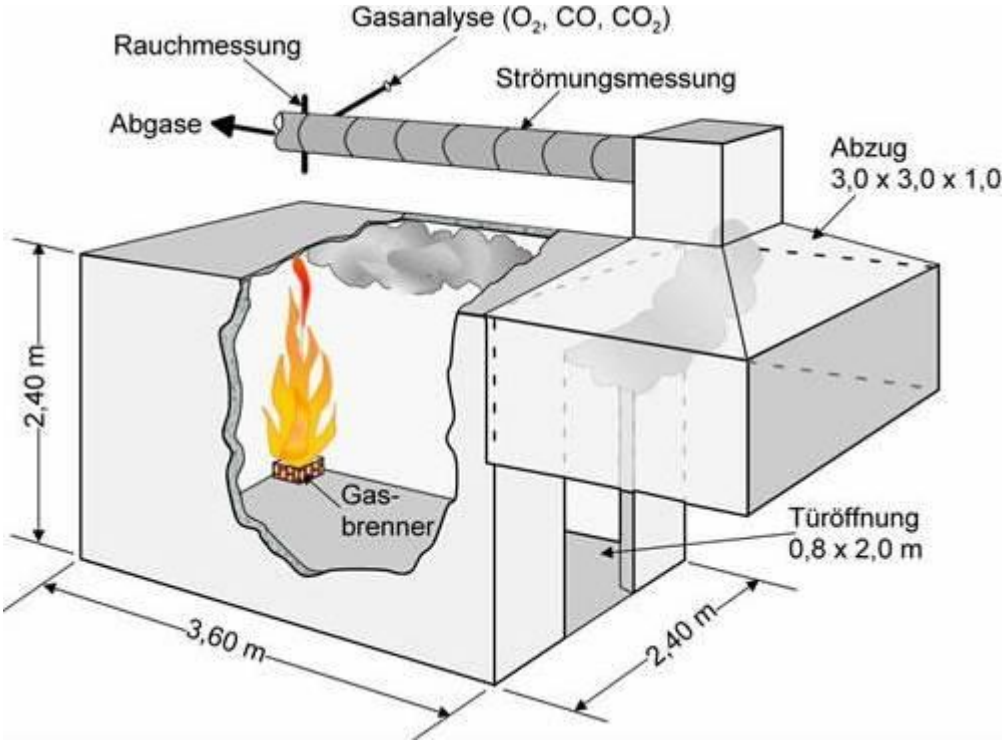
[1] In relation to the NZBC as determined under AS1530 Part 1.

EXAMPLE OF UNSUITABLE ACM APPLICATION SPREADING FLAME



EXAMPLE OF WHERE ALUCOBOND PLUS IS TESTED FOR EXTERIOR APPLICATION

EXAMPLE OF WHERE ALUCOBOND PLUS IS TESTED FOR INTERIOR APPLICATION



Fire in room corner test according to ISO 9705

Images taken while testing Alucobond PLUS in accordance with ISO 9705