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MEMO TO ALL ASGA MEMBERS

I am happy to explain where we are currently at in the legislation regarding ACM flammability issues and signage.

With the release of the new NCC:2019 (National Construction Code - old BCA) Signage lost its exemption under the Ancillary Items Provisions from having to comply with the flammability requirements of external wall materials.

Rather than applying the same criteria that is applied to materials used for cladding, the ABCB decided to apply a different standard. They chose AS 5637 and this standard requires a completely different set of tests to be applied to the materials, than the one used for cladding materials. This means that if a material is compliant for use as Cladding, it CANNOT be deemed to comply with the ones that applies for Signage, and the reverse also applies.

I have spoken to the Australian Building Codes Board (ABCB) and the Australian Standards Board (ASB) and while they admit they had not considered all the impacts caused by these changes, the majority of the impacts are not unintentional so the majority of these changes are unlikely to be altered but we may be able to get some clarification or exemptions.

Below is a brief summary of where I believe we are at with this:

The NCC now reads

C1.14 Ancillary elements

An ancillary element must not be fixed, installed or attached to the **internal parts or external face** of an external wall that is required to be non-combustible unless it is one of the following:

(a) An ancillary element that is non-combustible.

- (b) A gutter, downpipe or other plumbing fixture or fitting.
- (c) A flashing.
- (d) A grate or grille not more than 2 m² in area associated with a building service.
- (e) An electrical switch, socket-outlet, cover plate or the like.
- (f) A light fitting.

(g) A required sign.

(h) A sign other than one provided under (a) or (g) that—

- (i) achieves a group number of 1 or 2; and**
- (ii) does not extend beyond one storey; and**
- (iii) does not extend beyond one fire compartment; and**
- (iv) is separated vertically from other signs permitted under (h) by at least 2 storeys.**

(i) An awning, sunshade, canopy, blind or shading hood other than one provided under (a) that—

- (i) meets the relevant requirements of Table 4 of Specification C1.10 as for an internal element; and**
- (ii) serves a storey—**
 - (A) at ground level; or**
 - (B) immediately above a storey at ground level; and**
- (iii) does not serve an exit, where it would render the exits unusable in a fire.**

(j) A part of a security, intercom or announcement system.

(k) Wiring.

(l) A paint, lacquer or a similar finish.

(m) A gasket, caulking, sealant or adhesive directly associated with (a) to (k).



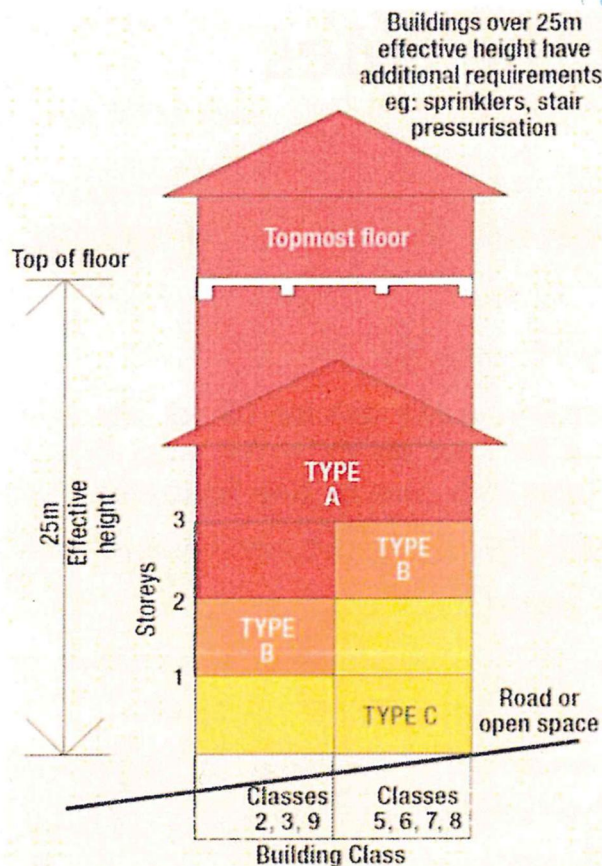
Definition Non-Combustible

C1.9 (e) The following materials may be used wherever a *non-combustible* material is required:

- (i) Plasterboard.
- (ii) Perforated gypsum lath with a normal paper finish.
- (iii) Fibrous-plaster sheet.
- (iv) Fibre-reinforced cement sheeting.
- (v) Pre-finished metal sheeting having a *combustible* surface finish not exceeding 1 mm thickness and where the *Spread-of-Flame Index* of the product is not greater than 0.**
- (vi) *Sarking-type materials* that do not exceed 1 mm in thickness and have a *Flammability Index* not greater than 5.
- (vii) Bonded laminated materials where—**
 - (A) each lamina, including any core, is *non-combustible*; and**
 - (B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and**
 - (C) the *Spread-of-Flame Index* and the *Smoke-Developed Index* of the bonded laminated material as a whole do not exceed 0 and 3 respectively.**

Other than required signs all signs attached to the external fire wall (almost all external walls are fire walls) of Type A and B buildings MUST be either made from, a Non Combustible Materials, a material Certified as being Non Combustible under AS 1530.1, or meet the requirements for ancillary element of 1.3.3 – C1.14 (g) & C1.14 (h).

Definition for Types A & B Building – This will be the majority if not all of the Coles stores



Large Isolated Structures can also be classed as Type C provided they have sprinklers installed, have a total floor area less than 18000²m, do not have a single fire compartment greater than 5000²m and have at least 6m clear unobstructed continuous vehicular access around the entire building.



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Requirements of C1.14 (a)

An ancillary element that is non-combustible.

Requirements of C1.14 (g)

Allows for required signs to be made of combustible material means

Requirements of C1.14 (h)

An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following:

(a) *An ancillary element that is non-combustible.*

(h) *A sign other than one provided under (a) or (g) that—*

(i) *achieves a group number of 1 or 2; and*

(ii) *does not extend beyond one storey; and*

(iii) *does not extend beyond one fire compartment; and*

(iv) *is separated vertically from other signs permitted under (h) by at least 2 storeys*

Let me expand on C1.14(a) implications

(a) An ancillary element that is non-combustible.

Non-Combustible means it is made of

Signs must be made from Non-Combustible materials.

(i) Plasterboard.

(ii) Perforated gypsum lath with a normal paper finish.

(iii) Fibrous-plaster sheet.

(iv) Fibre-reinforced cement sheeting.

(v) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0.

(vi) Sarking-type materials that do not exceed 1 mm in thickness and have a Flammability Index not greater than 5.

(vii) Bonded laminated materials where—

(A) each lamina, including any core, is non-combustible; **and**

(B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; **and**

(C) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively.

(viii) a material that has been tested against 1530.1 and been deemed as non-combustible.

Let me expand on C1.14(h) implications

(h)(i) achieves a group number of 1 or 2

The Group 1 or 2 they are referring to is the AS 5637:2015 calls for a AS/ANZ 3837 sample test or ISO 9705 full room - these are used to determine the fire hazard properties through specific tests:

Group 1 - Materials that DO NOT reach Flashover after exposure to 100Kw for 600sec followed by 300Kw for another 600 sec

Group 2 - Materials that DO NOT reach Flashover after exposure to 100Kw for 600sec but DOES flash over when exposed to the following 300Kw for another 600 sec

Group 3 – Material that reach Flashover in more than 120 Seconds after exposure to 100Kw

Group 4 – Material that reach Flashover in less than 120 Seconds after exposure to 100Kw

Sample Test - <https://www.youtube.com/watch?v=2TpRLHr1kBw>

Full Room Test - <https://www.youtube.com/watch?v=X-45ymnRAI8>



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As there is no correlation between this test and the ones used for the certification of cladding materials there can be no deemed to satisfy provision which would have allowed use of cladding materials for signage manufacture.

I have spoken to several ACM Suppliers and to paraphrase their responses: "It's an expensive test (around \$60k), there is no guarantee our product will pass and signage is such a small part of our business, that we cannot get approval from senior management to get our products tested."

ACM product that has been certified against AS 5637 is limited but the list is growing. I am also aware of several products that have 1530.1 Certification and this list is also growing.

The use of ACM products generally gets more complicated due to several bad experiences (Certifiers signing off on product A, only to find out the builder/installer had used the cheaper non-compliant product B). Because of this it's getting extremely difficult to find a certifier in Qld who will sign off on any ACM product. I expect this will spread.

(h)(ii) does not extend beyond one *storey*

This means that the size and location of an external sign must be limited to the extent that the sign does not span the internal floor.

(h)(iii) does not extend beyond one *fire compartment*

This restricts the size and location of external signs so that the sign does not span an internal fire compartment.

(h)(iv) is separated vertically from other signs permitted under (h) by at least 2 *storeys*

This means you can have signs on Level 1, and level 4

I've spoken with a Fire Engineer: provided the signs are vertically very close together (less than 100mm) they may be able to class the 2 linked signs, as if they were 1 larger sign, provided that the sign has meet all the other restriction of C1.14(h)

Now for the major issues

Issue 1

Currently there is no cost-effective translucent material other than glass that can achieve a Group 1 or 2 classification. The NCC:2019 does allow for Performance Based Solutions. This is where a Fire Engineer "signs off" that the components that the sign/s are made of, along with the location of sign in relation to, location of other signs, and existing opening within the firewall, do not increase the risk of the fire spread. Every illuminated non-required sign attached to an external wall of a Type A & B Building will require a Performance Based Solution.

As there are non-combustible AS 1530.1 certified and AS 5637 certified alternatives available. I doubt that a Performance Based Solution would be granted by a fire engineer for a non-illuminated sign made from anything other than compliant materials, unless there were extenuating circumstances.

As the components of a Performance Based Solution are site specific (Type of Building structure, Classes of Occupancy, Location on the building, Position of other signs, What the external wall is made of) – this is not going to be a 1 size fits all solution that covers every situation.

I have been and, am still, working with several Fire Engineers and Certifiers to ensure that I have streamlined this process and developed what I believe to be as cost-effective process as possible. These discussions will result in changes in the materials used to manufacture signs, so that the signs comply as far as possible with the new requirements.



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Issue 2

You may have noticed I have highlighted “internal part” of the C1.14(h) quote from the NCC:2019. The PCA’s and Fire Engineers I am working with agree that this includes (except in specific situations) the internal lining of an external wall. This means that those signs will have to be made to different standards and materials than that of the other internal signs.

Issue 3

The NCC:2019 also removed the exemption signage had from AS 4282 Control of Obtrusive Light Effects Outdoor Lighting. This will likely result in more councils/certifiers asking for lighting reports. This may require a reduction in brightness or the use of dimmable LED's and transformers to ensure compliance. I am working with several lighting consultants to develop a streamlined and cost-effective process as I can.

For an example of the complexity of this issue:

You have a Type, A Building, where the external walls are clad with an approved cladding material (not certified under 1530.1 as non-combustible or AS5637 as being Group 1 or 2).

You are asked to apply a 6mx4m self-adhesive vinyl transfer directly to the cladding. This from my understanding is allowable.

As there is no minimum sized sign that the new rules apply to – you cannot apply a similar self-adhesive vinyl transfer to some left-over cladding and screw that to the wall regardless of how small the sign may be, even though it is the same material as the wall is made of, as the material is not approved for use in signage unless it's a required sign which is exempt from C1.14(H).

If any current ASGA financial member would like some clarification or additional information, please do not hesitate to contact Glenn Hain on 0432 934 280 or email g.hain@hotmail.com.

Glenn will advise ASGA Head Office of your contact with him.