

INQUIRY INTO FURTHER INQUIRY INTO THE REGULATION OF BUILDING STANDARDS

Organisation: Network Architectural

Date Received: 16 September 2021

16 September 2021

Public Accountability Committee

Email: public.accountability@parliament.nsw.gov.au (and via online form at PAC website)

Dear Committee members,

SUBMISSION TO FURTHER INQUIRY INTO THE REGULATION OF BUILDING STANDARDS

Network Architectural (**Network**) specialises in supplying high-quality architectural solutions to architects and specifiers across Australia. Amongst other products, we are the exclusive supplier in Australia of ALPOLIC NC cladding manufactured by reputed Japanese company, Mitsubishi Chemical Infratec Co (Mitsubishi). ALPOLIC NC is a quality mineral core barrier (calcium carbonate) composite specifically developed by Mitsubishi over several years post Grenfell to be the safest in the world.

Network thanks the Government and Cladding Product Safety Panel (**Panel**) for work done to try and provide guidance on cladding products and systems. We wish to provide the Committee with this evidence-based submission on issues with the Panel process and recommendations of cladding products. These issues have grave safety and financial consequences for building owners, taxpayers and others.

Issues include a lack of side- by- side highest standard AS 5113 firewall testing by the Panel, the ignoring of existing testing (including from NATA accredited CSIRO) and a staged approach to recommendations and non-consideration of safe composites in Stage 1 of the Panel's work. All of these process issues have led to initial recommendation of solid aluminium over safer, superior and less costly safe composites like Mitsubishi ALPOLIC NC.

Consequences include potential deaths and further rounds of costly replacement of unsafe substandard cladding (this time solid aluminium in place of polyethylene) when safer, superior and more cost effective alternatives -like ALPOLIC NC- could have been used. These consequences go well beyond Project Remediate, with the Panel's staged process to recommendations now driving almost sole and widespread use across industry of solid aluminium- a product whose inherent dangers and substandard qualities can't be mitigated (let alone removed) by any façade system design requirements.

Background

- In the 80s and early 90s cheap solid aluminium cladding was commonplace in Australia. But builders and architects soon discovered its many problems: being pure metal it conducted heat ("cooking" buildings), its paint facade peeled quickly, oil-canning of panels was evident and it was not effective at mitigating fire risk.
- Composite cladding - where a layer of some substance is sandwiched between aluminium sheets - then became common. A wide variety of composite cladding hit the market: some with a mineral core (the best), including ALPOLIC NC, some with a corrugated metal core (dangerous) and some with a 100% polyethylene core (most dangerous). Composite cladding is as also referred to as "bonded laminate" or "aluminium composite".
- The 2017 Grenfell Tower Disaster building included flammable (most dangerous) polyethylene core cladding.

- In response to Grenfell, all composite cladding was instantly considered suspicious - not just the polyethylene core type that was responsible for the rapid spread of flame engulfing the building.
- As a result, suppliers saw an opportunity to start flooding the market with solid aluminium cladding again - much of it cheap and nasty from fly-by-night Chinese producers. The two leading suppliers of solid aluminium in Australia (Fairview and HVG) are the same two companies that were/are subject to class actions because they sold the most dangerous Grenfell style polyethylene based cladding in the first place. That is, they have sold one bad product and are now selling another.
- In the absence of guidance and because of misinformation lumping the best composite cladding in with the worst, many buildings have used solid aluminium cladding since 2017. In July 2020, several years after Grenfell, the Government appointed the Panel to advise on “safest” and “most suitable” replacement cladding focussing on “innovative products” (all wording in quotes was originally on the Panel website, but has now been removed).
- In April 2021 the Panel delivered its Stage 1 report (**Report**) recommending:
 - Criteria for removal of cladding -cladding with less than 8% combustible material can stay on Project Remediate buildings (note-this 8% threshold is significantly lower than the 30% threshold for removal applied to non-Remediate buildings in NSW and elsewhere in Australia), and
 - Initial replacement cladding materials - an initial 4 cladding product categories were recommended for Project Remediate -solid aluminium, solid metal sheets, non-combustible cement render and fibre cement. The last three are too heavy/expensive to realistically be used in high-rise settings in more than small sections, which leaves solid aluminium as the effective sole recommendation.
- On possible future replacement cladding materials - the Report said it “may” in future consider safe, compliant composites meeting the following Panel criteria:
 - less than 8% combustible material in the core (note this is different to the 8% criteria for removal above which applies to the whole of the cladding), and
 - compliance with National Construction Code (**NCC**) e.g. through compliance with c1.9e(vii) NCC

(“**safe composites**” are those meeting both criteria). The Report gives no commitment on, or a specified time for, endorsement of safe composites and, despite the 31 August 2021 release of a submission (or in Network’s case re-submission) form for Stage 2 products, there is still no commitment and process questions remain.
- Despite contrary Government statements since the Report, the Report does not require recommended solid aluminium to undergo highest Australian Standard large scale firewall testing but it does require this of safe composites. There has been shifting guidance on whether safe composites require that testing to first be endorsed or whether that testing will be done on all endorsed products – both Stage 1 and 2 – at a later stage of Project Remediate.
- The upshot of the above is that by delaying consideration of safe composites, the Panel has effectively endorsed sole use of solid aluminium despite the evidence below that it is less safe, less durable and more costly than alternatives like ALPOLIC NC.
- The Panel Report surprised many in the industry given the known inferior performance of solid aluminium compared to safe composites. It is at odds with similar decisions taken in the UK and elsewhere, where safe composites with mineral cores like Mitsubishi ALPOLIC NC have been endorsed and encouraged. No other jurisdiction in Australia or the world has promoted solid aluminium over superior and innovative mineral core composites.

Network could sell solid aluminium but has consistently refused to do so, even after the Panel Report recommended it. This is because of the evidence of dangers below.

Evidence: Mitsubishi ALPOLIC NC v solid aluminium

ALPOLIC NC compliant and a safe composite under Panel definition

Network has provided NATA accredited independent testing to the Panel supporting ALPOLIC NC's compliance with:

- the Report threshold for safety to stay on buildings (< 8% combustible material in product) - ALPOLIC NC contains < 5% and has zero polyethylene within the product
- the Report criteria/threshold for safety to be recommended as a replacement material in Stage 2 i.e.:
 - <8% combustible material in the core - **ALPOLIC NC contains zero polyethylene or combustible material within the mineral core barrier, and**
 - meets c1.9e(vii) of NCC 2022 in relation to non-combustibility of individual elements of the cladding product (each individual lamina).

These make Mitsubishi ALPOLIC NC a safe composite which is allowed to both stay on Project Remediate buildings and which the Panel has indicated it “may” consider in Stage 2.

See Annexure 1 Att 3 and Annexure 3 on composition and Annexure 1 Att 7-10 on combustibility testing of elements.

ALPOLIC NC v solid aluminium- evidence on safety, suitability and cost

Network has also provided the Panel with independent CSIRO, Ignis Labs, Excelplas and other evidence supporting:

1. **Mitsubishi ALPOLIC NC's fire safety and solid aluminium's fire dangers on highest Australian Standard (AS) 5113 firewall testing (simulating a real fire).**
 - Independent Ignis Labs reports at Annexure 1 Att 2, Att 11-12 (**summary at Annexure 1 Att 4**) and Annexure 3 pg 10
 - NATA accredited CSIRO report (Annexure 2) and further independent reports from Ignis Labs (Annexure 1- Att 2 and 11) show solid aluminium cladding is dangerous and melts so that:
 - sheets detach from their mechanical fixing and
 - holes melt in the cladding sheet exposing the façade and causing it to shed large chunks of debris, potentially onto firefighters and others egressing a building. The Ignis Labs Report shows chunks of up to 19kg. The CSIRO report shows 96kg of debris overall and many larger chunks including 5 chunks larger than 5kg weighing a total of 73 kg (table on pg 11 (7.3))
 - Comparative video of the (above) CSIRO test on solid aluminium and a CSIRO test on Mitsubishi ALPOLIC (both commissioned by ACLAD, an independent cladding designer/supplier)
https://www.networkbuilding.com.au/Videos/Fire_Test_Comparison/Fire_Test_Comparison.mp4 .
 - Excelplas report (Annexure 3)
 - A leading supplier of solid aluminium (Fairview) also confirms/admits solid aluminium is unsafe and inferior in these ways e.g table at top of page 3 and pages 3-4 of the following Budget Estimates document referring to shedding 23 kg chunks and other dangers/suitability issues:
<https://www.parliament.nsw.gov.au/lcdocs/other/14308/Tabled%20document%20-%20national%20construction%20code%20series.pdf>

2. **Mitsubishi ALPOLIC NC superiority to solid aluminium on other suitability criteria** including:

- thermal conductivity/energy rating and environment performance. Not only does ALPOLIC NC emit 300% less CO2 emissions during its manufacture than solid aluminium, its calcium carbonate mineral core barrier provides an insulating effect that prevents heat from entering a building far more so than for 100% aluminium (which easily conducts heat). This also translates to lower cooling costs. See Annexure1 Att 6 and Annexure 3 pg 10 extract: *“Thermal Conductivity of 3mm Solid Aluminium is over 500x higher than that of ALPOLIC NC”. This increased Thermal Conductivity can also result in a higher chance of structural panel failure through thermal movement and waterproofing failures*,

Mitsubishi has also recently registered an Environmental Product Declaration (**EPD**) with the Australasian EPD Programme, (EPD Registration Number SP – 03725). An EDP is an independently verified document that reports transparent and comparable environmental information about the life cycle environmental impact of a product. This EPD has been verified according to the requirements of the Australasian EPD Programme, ISO 14025 and EN 15084:2012+A1:2013. This is a significant milestone given worldwide environmental impact concerns and demonstrates Mitsubishi’s genuine commitment to environmental transparency. It should be a key criteria for recommending products for Project Remediate.

- durability – ALPOLIC NC’s superiority on durability translates to less replacement and lower long-term cost to building owners and taxpayers (in the case of government funded buildings). See Annexure1 pg4
- rigidity – See Annexure 3 pg 9 indicating *“solid aluminium will incur significant oil-canning effects at high temperatures. This will in turn dramatically reduce the aesthetic appearance of your project and increase possible risk of structural failure.”*
- cleaning/maintenance costs. See Annexure 1 Att 5 showing cleaning and maintenance costs solely to maintain the warranty over 10 years for 5000 square metres of solid aluminium is \$900,000, compared to nil for ALPOLIC NC
- warranty. As per Annexure 1 Att 5 and Annexure 3 pg 10, key solid aluminium products do not have meaningful warranty compared to ALPOLIC NC. In particular they are not backed by a manufacturer and do not include all replacement costs and labour and they make the warranty conditional on a façade cleaning program and record keeping of that program.

3. **ALPOLIC NC is also less costly than solid aluminium** – no more costly on upfront cost and less expensive on ongoing cost (as per above there is no cleaning required to maintain warranty).

Issues with Panel process and guidance

There are grave safety, effectiveness and cost consequences for building owners and taxpayers arising from the following issues with the Panel’s process and recommendations on cladding products:

Issue 1: Stage 1 recommended solid aluminium is dangerous and inferior even with the Panel’s façade design requirements

Evidence on dangers and inferiority

The Panel recommended solid aluminium:

- without conducting/citing any AS5113 fire testing (in its Report), let alone side by side AS5113 testing with safe/r composites, and

- despite credible independent AS5113 and other evidence (above) that it is dangerous and inferior to alternatives. This includes AS5113 firewall testing on two different façade systems by Ignis Labs and CSIRO as well as NATA accredited evidence on other qualities.

The Panel has ignored/dismissed this accredited and independent evidence on solid aluminium dangers and has not done (or cited) any fire testing of its own.

Why façade design requirements don't remove or sufficiently mitigate the dangers

The Panel has also incorrectly suggested that mechanical fixing and cavity barrier design requirements mitigate the above dangers, attempting to explain away the validity of the above CSIRO test because it was done on a standard QLD vs standard NSW façade. These attempts to dismiss the evidence are simply not grounded in fact:

- The CSIRO and Ignis Labs tests were conducted with mechanical fixing and the above dangers still occurred, including the shedding of large chunks and the panel melting away from its fixing -See Annexure1 Att 4 and Annexure 2 table on pg 10 and 17.20 minute point of the video of that CSIRO test: https://www.networkbuilding.com.au/Videos/Fire_Test_Comparison/Fire_Test_Comparison.mp4. The horizontal CSIRO thermocouple (thermometer) in front of the cladding panel is all that stopped it completely falling to the ground
- Cavity barriers only mitigate fire propagation within the cavity. They do not eliminate, or sufficiently mitigate, the above melting, shedding of 19-23kg chunks and sheet detachment dangers of solid aluminium. Even the Panel Report notes the function of cavity barriers relates to propagation.
- As outlined below, inherently safer products like ALPOLIC NC will -perform better than inherently unsafe ones like solid aluminium no matter what façade system they are tested on -QLD industry standard without cavity barrier s(using aluminium framing), NSW industry standard with cavity barriers (using steel framing), without cavity barriers, with cavity barriers etc. **Best façade design requirements should absolutely be put in place but they do not change the relative inherent performance of the cladding products on top, nor do they remove or sufficiently mitigate the inherent dangers of solid aluminium.** Better to start with a no risk product than try (unsuccessfully) to mitigate the dangers of another.
- It is also difficult to see how the Panel can dismiss a report from CSIRO -one of only two organisations its own Report says it will accept on AS5113 testing
- The Panel has seemingly not accepted the Ignis Labs AS5113 report submitted by Network which shows the same solid aluminium dangers as CSIRO. It can only be assumed this is because Section 6 of the Panel's Report requires AS5113 testing from one of two labs currently NATA accredited to do it-either CSIRO or Warrington.

It should be noted that Ignis Labs is still awaiting its NATA accreditation for AS5113 testing, a process that takes over a year (e.g. CSIRO was only granted their NATA accreditation for this test late in 2020). The fact it is awaiting its NATA accreditation does not make Ignis Labs evidence any less credible. It is a respected independent lab and endorsed by the ACT Government for fire safe cladding reviews.

The Ignis report also shows on side by side testing the exact same dangers of solid aluminium as the CSIRO report. The two reports show the dangers across two different types of façade. As noted below, if the Panel won't accept this then it should at least do its own side by side test of solid aluminium versus ALPOLIC NC on a third type of façade of its own choosing. Network even stands

ready to pay for this. It won't change the relative results, nor will it remove or sufficiently mitigate the solid aluminium dangers.

Issue 2: Panel's staged approach, non-consideration of safe composites in Stage 1 and failure to accept existing side by side fire testing or commission its own

The consequence of the three parts of this issue are that building owners have been denied a basis for comparison/informed choice and ultimately access to a safer, superior and more cost-effective option than solid aluminium- i.e. Mitsubishi ALPOLIC NC

- There was substantial independent and NATA accredited evidence before the Panel at the time of its Report that Mitsubishi ALPOLIC NC is inherently far safer, more suitable and more cost effective than solid aluminium no matter what façade system it is placed on (see above). However, the Panel have, through application of a baseless staged approach to recommendations (next sub-heading), removed the need to transparently release that comparative evidence. This has in turn removed the capacity for informed owner/industry choice.
- If the Panel didn't want to accept existing AS5113 testing before it then it should have commissioned side by side testing itself using the same façade system on all tests (as the control method). This would have allowed comparison of inherent product safety by Remediate and other owners. Even the Building Commissioner has called (in recent social media) for apples-to-apples firewall testing of products.
- AS5113 firewall testing is the only way to demonstrate how cladding performs on a large-scale fire wall, including how it interacts with other standard components in a "real life" fire situation which includes worse case scenarios like the chimney effect experienced in the Grenfell Tower disaster. As per Issue 3, this was not required for solid aluminium at all, let alone side by side with safe composites.
- The Panel's staged approach and failure to commission side by side AS5113 testing have allowed it to exclude the comparative product information at the heart of its remit to give guidance on safest and otherwise most suitable products. In the case of Project Remediate owners this has denied them access to the safest/ most suitable products. For non-Remediate owners/stakeholders, the predictable consequence is that many have immediately assumed the Panel Report Stage 1 recommendations mean Stage 2 products are banned/inferior (see wider Consequences below).

No valid reason given by Panel for its staged approach

- The Panel Report falsely suggests that national review of the composite/bonded laminate category in NCC2022 and NCC2025 prevented the Panel considering that category for Stage 1 Project Remediate:
 - in fact, bonded laminates were not under review for NCC2022 (now released) in any relevant respect. Only their affixation method was under review and this was not relevant given all Project Remediate products were to be mechanically affixed
 - bonded laminates were not and are not proposed for review for NCC2025 any more than any other product category. There are currently no proposals for change for bonded laminates under NCC2025

Evidence to support this:

- consultation version of National Construction Code (**NCC**) 2022:
<https://www.abcb.gov.au/News/2021/05/06/Consultation-on-NCC-2022-PCD-stage-1-now-open>, and
- email from the Chair of the ABCB, Neil Savery, to Network confirming no wider NCC2022 review while noting it is too soon to say what NCC2025 will include (**Annexure 4**). To be clear all

cladding products, not just bonded laminates, are considered for every NCC review (2019, 2022, 2025 etc) and until such review is underway it is not clear which products (solid aluminium, bonded laminate or other) might be proposed for change.

- The Panel's need to balance the requirement for "timely advice" with the need for "thorough investigation" was the only other reason given by the Panel for its staged approach. This does not explain why it did not consider safe composites alongside Stage 1 products where the Panel already had required/sufficient evidence to support "thorough investigation". For example, the Panel had, at the time it reported, NATA accredited evidence on Mitsubishi ALPOLIC NC's composition as a safe composite and compliance with c1.9e(vii) NCC 2022 so there was no reason not to consider it side by side with solid aluminium and endorse it in Stage 1 (with Mitsubishi ALPOLIC NC and solid aluminium to both undergo further AS5113 testing on a system of the Panel/Remediate Principal Façade Consultant's choice if that is what the Panel required).

"Timely advice" may have justified a staged approach if there was insufficient evidence to consider Stage 2 products on the same basis as Stage 1 products, but it did not justify disregarding CSIRO and other independent evidence of the dangers of solid aluminium or different safety standards across Stages (next Issue) These flaws in the Panel process have compromised building owner/ firefighter safety and informed choice.

Issue 3: Different fire safety testing standards and suitability criteria across Stages- lowest combustibility testing for solid aluminium and highest testing for safe composites

This does not allow for proper safety/suitability comparison and is related to the above two issues.

Stage 1 products/systems:

- are only required to meet the low NCC combustibility requirements in 8.2 Panel Report and the design requirements in section 8.3 (which, as per below, don't cure the fire dangers of solid aluminium). For Project Remediate this means AS1530.1 testing but it should be noted that outside Remediate solid aluminium sheets landing on Australian shores do not even need to undergo AS1530.1 testing as they get a clear pathway through c1.9(e)(vii) of the NCC. There are many different grades of solid aluminium and many examples of suppliers changing grades without any testing for non-combustibility
- appear not to have to undergo AS5113 firewall testing or meet other testing/criteria for suitability in sections 6 (points 3 and 4) and 9 of the Panel report e.g. around warranties, wind loading, thermal performance, durability, aesthetics. Note here "Shifting the Goalposts" under Issue 5 below and the continued lack of clarity/answers from the Panel/Government on the simple question of whether solid aluminium will have to undergo any AS5113 testing, let alone side by side AS5113 testing with safe composites.

Stage 2 products/systems:

- must produce NATA accredited testing to show compliance with NCC combustibility requirements in section 6
- also have to undergo NATA accredited AS5113/CV3 firewall testing and meet other testing/criteria for suitability in sections 6 (points 3 and 4) and 9 of the Panel Report.

As per Recommendations below, side-by-side AS5113 fire testing of solid aluminium and ALPOLIC NC (and any other safe composites) on the same façade system and applying the same AS5113 criteria is required to correct this issue and show the public once and for all which is safer. If the Panel won't commission this itself it needs to at least say what façade system it will accept that side by side testing on. That way suppliers can at least commission (or pay the Panel/ Government to commission) independent NATA accredited CSIRO/Warrington to do the testing.

Issue 4: The Panel's failure to separately consider inherently best products and inherently best façade systems.

The Panel was charged to find the safest and most suitable products and (separately) the safest and most suitable façade systems as part of its remit to give general, not just Project Remediate, guidance. This necessarily entails a scientific process of AS5113 testing all Stage 1 and Stage 2 products on the same (control method) façade system to allow apples to apples comparison of the inherent safety of cladding products.

Instead, the Panel seems to be saying it will compare different product/system combinations. For example:

- the Panel has not specified a façade system for solid aluminium to be AS5113 tested on and has just specified two system design requirements in 8.3 of its Report
- the Government recently indicated to Network representatives that the Panel/Project Remediate team will require Stage 2 cladding product suppliers to (re)submit their products for Stage 2, with each cladding product supplier (versus the Panel or a qualified façade designer) to propose the façade system to be used in AS5113/CV3 testing as part of that
- in a new 31 August 2021 application process for product suppliers/manufacturers at <https://www.nsw.gov.au/customer-service/projects-and-initiatives/project-remediate/application-to-supply-cladding-materials-or-systems> section 6 appears to require cladding product suppliers/manufacturers to demonstrate compliance of a system including their product against NCC criteria relating to condensation, weatherproofing and structural integrity. These NCC requirements apply to systems not products and it is not appropriate for cladding product suppliers versus the Panel to specify appropriate NCC compliant systems.

The above points mean AS5113/CV3 testing/comparison (and it would seem also assessment on condensation, weatherproofing etc) in relation to products is to be determined by the Panel on different systems so that it is impossible to ascertain which are inherently better products and which are inherently better systems. This prevents the inherent qualities of cladding products being compared by the public side by side, apples to apples. It prevents transparency as to what is safest or otherwise best.

As per Recommendations 1 and 2, if the Panel requires further AS5113 testing, then it should specify a single façade system to test all products - both safe composites and aluminium - on. It should also test façade systems in a similar way i.e. with the same- and probably least safe - product to see which is the inherently safest system irrespective of the cladding product placed on it.

As per Recommendation 4 the Panel needs to similarly either:

- remove requirements on cladding product suppliers to provide evidence of systems performance under 6(a) of the new application process introduced 31 August, or
- specify which single (control method) system it wants product suppliers to demonstrate NCC compliance on in relation to these condensation weatherproofing and structural integrity criteria.

The safest/ best products on the safest/best façade systems will produce the safest/best buildings as these products do not rely on particular façade design to perform in a safe/superior manner.

Issue 5: Failure by Panel/Government to clarify how and when Stage 2 products should be AS5113 tested and whether Stage 1 products will be tested side by side in the same way

Despite various rounds of correspondence from Network to the Panel and Government, these points have not been clarified. This includes a failure since 2020 to clarify if all products will be AS5113 tested and since April 2021 to clarify:

For Stage 1 products: if they will be AS5113 tested at all, let alone side by side with Stage 2 safe composites

For Stage 2 products:

- 1) whether NATA accredited AS5113 testing must be commissioned by a supplier and provided to the Panel in order for safe composites to be endorsed or if that testing will be commissioned by the Project Remediate team after a product is endorsed
- 2) what (control) façade system the Panel will accept AS5113 testing on (in order to endorse Stage 2 products and ensure apples to apples comparison to Stage 1)
- 3) which AS5113 criteria will be considered/essential, and
- 4) when the Panel will publish findings of AS5113 testing and make Stage 2 recommendations.

The context here is that further AS5113 testing takes 4-6 months and costs \$100,000 and so is not something that organisations should just commission without clarification on what is expected/will be considered as valid by the Panel, especially when there is inconsistency between the face of the Panel report and Government statements. At the same time every day lost in commissioning such testing is a day later in potential Panel endorsement causing damage to Stage 2 supplier businesses and jobs and denying the public the transparent side by side testing needed. This is part of a pattern of non-transparency and failure to answer reasonable requests and issues raised (see next section on “Shifting of the Goalposts”).

On the issue of which AS5113 criteria are considered relevant for assessing and comparing safety, the Panel’s analysis of solid aluminium would suggest that propagation/spread of flame is the only criteria they consider relevant. If largest debris chunk size and other AS5113 criteria were of any concern, then as per Evidence above, solid aluminium would not have been recommended. The Panel should make clear which AS5113 safety criteria it has and will apply equally across both Stages.

Shifting of the Goalposts

- Section 8.4 Report suggests safe composite suppliers must commission and provide NATA accredited AS5113/CV3 firewall testing in order to be considered for endorsement (even though Stage 1 products were waved through and recommended in section 8.2 without any such testing.
- Government guidance given to Network representatives following the Report was that the Panel does not require or want this testing done in order to be considered for endorsement. The guidance was that the Panel/Remediate team will instead commission required testing - for both Stage 1 and Stage 2 products - after a Project Remediate Principal Façade Consultant is appointed. If this is the case then there was/is nothing stopping the Panel recommending safe composites at the time of reporting/immediately, noting they will be subject to further AS5113/CV3 testing before use in Project Remediate in the same way as solid aluminium and other Stage 1 products.
- Further Government guidance to Network was that written guidance for Stage 2 suppliers would be issued early July.
- Written guidance was not issued in July 2021. On 31 August 2021 (just ahead of a 1 September Project Remediate industry briefing) a registration process was released (“Application to Supply Cladding Materials or Systems” for Project Remediate) - <https://www.nsw.gov.au/customer-service/projects-and-initiatives/project-remediate/application-to-supply-cladding-materials-or-systems>. The Panel and Global Façade Consultant will consider applications but only cladding materials endorsed by the Panel can be used in Remediate.
- The industry briefing indicated this new registration process was the relevant one for Stage 2 product suppliers, but there is still no commitment that the Panel will endorse safe composites by a certain date that will allow them to be:

- (1) used in initial Project Remediate buildings, and
- (2) understood generally (outside Remediate) as safe superior cladding product alternatives which are equal or superior to Stage 1 Panel recommendations.
- Questions remain about whether solid aluminium suppliers must submit under this new registration process and exactly what AS5113 testing and criteria will be applied. The 4 questions above - which Stage 2 suppliers have been asking since April 2021 - remain unanswered. It is also unclear if cladding product suppliers are supposed to submit testing on their own/differing façade systems without knowing which the Panel might accept. As per Issue 4 above, different façade system/product combinations do not allow apples to apples comparison of cladding products as they do not apply a scientific control method to determine comparative inherent product safety/superiority.

Issue 6: Panel has fundamentally failed to discharge its remit

The Issues above mean the Panel has not discharged its remit to:

- provide guidance to the Cladding Taskforce (and in turn to councils, building owners, industry and Project Remediate) on the “**safest**” and “**most suitable**” cladding products (bold wording now removed from Panel website)
- “*consider cladding products and assembly methods available in the NSW marketplace, **with a particular focus on new or novel products or solutions***” (bold wording now removed from Panel website). As per background above solid aluminium is in no way new or novel and was not used for 30 years post 1990’s as superior products entered the market

Issue 7: Panel criteria for removal of cladding for Project Remediate means many Remediate owners are unnecessarily removing safe cladding at great cost

While the Mitsubishi ALPOLIC NC/A1 product has less than 5% combustible material and is well below the Panel’s criteria for staying on Remediate buildings (page 12 of the Excelplas report at Annexure 3), a <30% threshold is applied generally in NSW (outside Remediate) and elsewhere in Australian and the world. **The Panel has provided no evidentiary basis in its Report (e.g evidence globally from a real fire or testing) showing that aluminium composites with less than 30% combustible material in the core have contributed to flame spread or are otherwise dangerous** and so should be removed.

Cladding at less than 30% combustible material has been accepted by Australian Councils and Courts as safe to stay based on auditing by qualified fire safety engineers. This 30% threshold is also consistent with the NSW Fair Trading Report’s Ban on non-conforming building products.

Requiring Project Remediate owners to remove existing composite cladding solely because it has between 8 and 30 % combustible material (versus for other reasons) is a significant cost and imposition that is not, at least based on evidence Network has seen, required.

Mitsubishi (a company that warned the public about the danger of 100% polyethylene vs <30% combustible material cladding 13 years before Grenfell (video at Ann 6)) has developed a range of ALPOLIC products over the years, some of which have between 8 and 30% combustible material. This range was specifically used based on Mitsubishi testing that showed that 30% was the critical fire safety point to mitigate propagation/flame spread.

Potential further issue: Failure of Panel to state if and how insurance has affected product recommendations

- It would be hoped that insurance costs/exclusions are not the explanation for the perverse Panel approach of essentially excluding all safe composites from Stage 1 consideration.
- Underwriters/insurers by and large recognise that all composites are not created equal i.e. some are safest cladding available (safer than solid aluminium) while others are dangerous. At least those who have done their due diligence/risk assessment recognise this and cover safe compliant composites rather than excluding all composites. For example:
 - The ICA has for some time, after doing its due diligence, formulated guidelines dividing aluminium composites into 4 categories from safest to not (ALPOLIC NC is in the highest safety category D).
 - Other professional indemnity and public liability underwriters and insurers that have similarly recognised safe composites are: Berkshire Hathaway, FM Global, Coverforce, Vero, Liberty, Neutral, Chubb, Quanta, Silverback etc
 - While some insurers/underwriters of professional indemnity insurance were previously, in the absence of guidance or their own due diligence, applying a blanket approach excluding coverage for all aluminium composites (instead of just those that contained polyethylene, were non NCC compliant, or rated low under ICA guidelines), this has to some extent abated.
 - For example, Vero, the underwriter of the main architect's professional indemnity insurer, Planned Cover, has recently informed Network that, while Vero does not endorse any product or manufacturer, an EN13501-01 A1 rating or passing the AS 5113 EW test except for debris mass are sufficient for Vero to accept a product as non-combustible (noting that Mitsubishi ALPOLIC NC panel has that rating and passes that test). Vero assess building materials on the basis of their combustibility or non-combustibility as building components, rather than what is accepted by the (low) NCC and so they do not rely on AS 1530 fire tests as an indicator of non-combustibility at full scale.
- Irrespective of the approach of individual underwriters/insurers, the insurance industry was in fact looking to the Panel to expertly consider and endorse products (including specific safe composites products) **based solely on fire safety and suitability** and **not factoring in the position of some insurers**. This would have lent further support to the approach taken by those insurers who have conducted due diligence of recognising that all composites are not created equal. It would also have provided the necessary due diligence for those in the insurance industry who had not done it.
- The Panel should perhaps make clear whether, as an expert independent body including fire experts, it has endorsed Stage 1 products based solely on fire safety and suitability so as to give further guidance to the insurance industry (amongst others), rather than the other way around i.e. letting (some) insurance industry players guide the Panel's approach (towards blanket exclusion of all composites no matter even those are safest, compliant and no risk).
- If insurance did play a part in Stage 1 Project Remediate recommendations, or is to further play a part in Stage 2, that should be made clear so that the wider industry, insurers and owners outside Remediate -who were always going to look to the Panel report for technical guidance on safest and best - are told:
 - Which products are safest and most suitable based solely on technical consideration and evidence, and

- What and how insurance considerations have been or will be applied so that the technical safest/best are not recommended in Project Remediate.

This separation out by the Panel is essential to steer the public, owners, Councils, building industry and underwriters/insurers in the right direction of appreciating the relative safety/risks of products rather than conflating the two (as the Panel may have done) and simply coming out with recommendations that appear to these stakeholders to be suggesting that Stage1 products are technically safest/best in all contexts.

Consequences

- The combination of flaws in process at Issue 2 mean that building owners (both in and outside Remediate) have been denied a basis for comparison/informed choice and ultimately access to a safer, superior and more cost-effective option than solid aluminium- i.e. Mitsubishi ALPOLIC NC.
- Issues 1 to 4 mean the Panel has effectively sent an incorrect and dangerous message to the public and industry generally that solid aluminium is safe and safer than safe, compliant composites. This is driving widespread and sole use of solid aluminium on the thousands of other buildings outside Project Remediate that need cladding replacement (not to mention new builds), magnifying the public safety risk and risks of further rounds of replacement
- While there is nothing preventing safe composites being used outside Project Remediate (e.g. ALPOLIC NC is 100% compliant with the NCC and all state laws), there is a strong disincentive for builders and architects to use them without government appointed Panel endorsement and the current perception is that they are banned or inferior to Stage 1 recommendations like solid aluminium:
- Even where they have done their due diligence and want to use ALPOLIC NC, owners are being pushed by Councils or builders to use solid aluminium in contexts outside Project Remediate due to this perception:
 - e.g. see **Annexure 5** example of an owner who wanted to use ALPOLIC NC after a thorough due diligence but builders were telling him not to given the Panel report had not recommended it. He wanted to know how soon ALPOLIC NC would be endorsed
 - e.g.2 even Councils are misinterpreting the Report to mean solid aluminium is safest and a better choice all around eg within Sutherland Shire Council, City of Sydney Council, Lane Cove Council, Hills Shire and Hornsby Council

Summary of Panel Report Consequences:

- Risk of deaths and injury to egressing occupants and firefighters from chunks of molten mass/falling cladding panels in the event of a fire in buildings clad in recommended solid aluminium
- Building owners incur enormous unjustified expense (in initial replacement rounds and further rounds) when:
 - safety/durability/overall cost issues of solid aluminium manifest, and/or
 - they could have used safer, otherwise superior and less costly options
- Commercially unfair to suppliers of safer/superior products with effect on revenue/jobs
- Government/taxpayer liability
- Wide use of solid aluminium beyond Project Remediate magnifies these consequences.
- In relation to Issue 7, unnecessary enormous expense for some building owners in removing safe composites with between 8 and 30% combustible material when they are being removed solely on this basis i.e. are otherwise safe

Recommendations/ Solutions

The Government/Minister require the Panel to:

1. **Immediately recommend safe composites** provided satisfactory NATA accredited testing to support NCC2022 c1.9e(vii) compliance and <8% combustible material in core has been provided to the Panel. **At the same time the Panel should issue supplementary guidance that use of all (Stage 1 and 2) products in Remediate will only occur once the testing in Recommendation 2 has occurred.** These two aspects will level the playing field.
 - This is especially needed to give Project Remediate and the 1000's of other building owners, as well as Councils and industry guidance towards an alternative shown by evidence to be far/superior to solid aluminium
 - If the Government does not implement this recommendation, then, for fairness to Stage 2 suppliers and to give transparency/best alternatives to building owners as quickly as possible, the Panel should immediately:
 - specify what (industry standard or other) façade system it considers acceptable for Stage 2 safe composite suppliers to commission CSIRO/Warrington AS5113/CV3 system firewall testing of their product on (this should have been specified in Section 6 Panel Report), and
 - immediately endorse safe, compliant composites that meet the same criteria under AS5113 that the Panel appears to have applied to solid aluminium i.e non-propagation as the only relevant criteria. This is to ensure that Stage 1 and 2 products are considered and compared using the same fire performance and other criteria.
2. **Immediately carry out and publish results of side-by-side NATA accredited AS5113/CV3 firewall testing of both Stage 1 recommended products and Stage 2 safe composite products on the same façade system**, so as to allow apples to apples comparison. Alternatively, it should provide suppliers with the required façade design so that they can commission CSIRO/Warrington to do this testing (with the Panel to subsequently publish the results).
 - If the Panel requires further expert assistance in order to say exactly which façade system it considers suitable for testing relative AS5113 performance of cladding products, it should not await appointment of a Principal Façade Consultant to Project Remediate in order to get that assistance. That would entail a further delay of months in which time the above issues of wide use of solid aluminium will continue unabated.
 - Keeping in mind that the façade system that products are tested on should be one that represents what is most likely to be used generally in industry, not just in Project Remediate, it is actually preferable to test relative product performance on an industry standard façade than a façade with “best practice” Project Remediate design requirements. This is because:
 - a poorer (while still industry standard) façade system only further highlights inherent cladding product safety i.e. a safer cladding product (ALPOLIC NC) will perform better under AS5113 than a less safe one (solid aluminium), no matter what the facade system behind it. Another way to put this is that inherently safe cladding products do not need façade system design requirements to be AS5113 safe
 - given the Panel's wider remit to also give guidance for industry, not just Remediate, an industry standard façade is more representative of what will happen when various cladding products are subject to a real fire across the thousands of buildings where this might happen.
 - If the Panel is not minded to specify the industry standard façade for comparative AS5113 product testing then it can specify something better which allows comparison but does not need to await a Principal Façade Consultant to do that. Irrespective of the facade design

implemented by the Remediate Principal Façade Consultant it will not change the relative inherent AS5113 safety of the products that go on top.

- Apart from scientific control method around the same façade system, the Panel needs to ensure the following further integrity controls:
 - products that cannot be used in a real-life installation must not be introduced into the test to achieve a (better) result e.g. no fire rated sealant incorporated into test to protect the material from fire that cannot be exposed to UV or used in conjunction with metal panels in real life applications
 - cladding sheets to be sourced by the Panel (or appointees) independently in the market (e.g. by a mystery shopper), and not by suppliers or manufacturers. This ensures there cannot be any selection of special sheeting by suppliers or manufacturers.

3. consider and compare relative performance of Stage 1 and 2 products against all AS5113 safety criteria (under above applies to apples testing), not just flame propagation criteria. This includes:

- melting point (noting melting can cause sheet detachment and holes in the cladding sheet which expose the façade and in turn allow chunks to fall through), and
- largest debris chunk size (a risk to firefighters/others from falling debris)
- but not total debris mass (for the reasons outlined in Network's submission Annexure1)

4. immediately consider and compare relative performance of Stage 1 and 2 products against other suitability criteria including durability, thermal/environmental performance, warranty (e.g. whether materials or full replacement cost covered) and overall cost (noting the cost of cleaning/maintenance required for some products in order for warranties not to be void). However, these products should be compared based on available evidence for their inherent superiority on these criteria. The Panel should make clear that Section 6 of the new application form at: <https://www.nsw.gov.au/customer-service/projects-and-initiatives/project-remediate/application-to-supply-cladding-materials-or-systems> does not require cladding product suppliers/manufacturers to submit evidence of NCC compliance against these criteria of a particular system as it is the Panel's job to say, based on submissions from façade systems suppliers, which façade/system elements are superior/required.

5. publish clarifying guidance in line with all of the above including:

- comparative performance of Stage 1 and all potential Stage 2 products on both fire safety (AS5113 side by side testing) and other suitability criteria
- clear guidance that recommendation in Stage 2 does not mean a product is inferior to Stage 1 and that, in fact, safe composites meeting NCC2022 c1.9e(vii) should have been considered in Stage 1. This is critical to correcting the assumptions and perceptions of stakeholders well outside Remediate created through the Panel report's staged process.
- if insurance played or is to further play a part in Project Remediate recommendations, guidance on how it played a part including separated guidance on:
 - Which products are safest and most suitable based solely on technical consideration and evidence, and
 - What and how insurance considerations were applied so that the technical safest/best were not recommended in Project Remediate.

Unless clear guidance is published to all stakeholder groups (including consumers, Councils, building and associated industries and insurers), misinformation will continue to circulate and prevent informed choice on cladding safety, risk and cost.

If the Government is not minded to do all of this then it should at least provide immediate clarification to Stage 2 suppliers on all four outstanding questions in Issue 5.

Suggested witnesses

Network recommends that the Panel call on the following witnesses to provide evidence on:

- the relative safety, suitability and overall costs (including cleaning/maintenance) of leading products on market -including solid aluminium and ALPOLIC NC
- the need for further side-by-side fire testing of these products (on the same façade systems to allow comparison)
- any other matter that may assist the Panel

More Information

Network senior executives would be pleased to provide a further briefing to the Committee on any aspect of this submission, if required, noting Clint Gavin should be the contact on technical matters. Contact details are as follows:

Tony Rouady
Co-founder and General Manager

Clint Gavin
National Divisional Manager

Kim Regler
Managing Director

We look forward to working with the Committee on the issues above.

Yours sincerely,

Tony Rouady
Co-founder and General Manager
Network Architectural

Annexures

Annexure 1 – Network submission to Panel and attachments:

- **Att 1-** ALPOLIC NC specifications
- **Att 2** - Independent accredited Ignis Labs AS5113 testing/comparative report on ALPOLIC NC and solid aluminium
- **Att 3** – Excelplas testing of ALPOLIC NC composition including ICA highest “D” rating
- **Revised Att 4** – 1 page extract of key table from Att 2 report showing comparative fire safety qualities and additional information (from Att 11 and 12) on largest debris piece in each test
- **Att 5** –table showing comparative maintenance/cleaning costs and warranties for ALPOLIC NC and solid aluminium
- **Att 6-**ALPOLIC NC environmental credentials
- **Att 7 –10** NATA accredited testing supporting ALPOLIC NC compliance with cl1.9e(vii) NCC 2022
- **Att 11-**Ignis Labs report on AS5113 test of solid aluminium
- **Att 12-**Ignis Labs report on AS5113 test of ALPOLIC NC

Annexure 2- CSIRO AS5113 Report on solid aluminium

Annexure 3 – Excelplas White paper on Mitsubishi ALPOLIC NC

Annexure 4-Email from Neil Savery

Annexure5- Example of widespread application of Panel recommendations to treat safe composite alternatives as banned - See next page

Annexure 6- Mitsubishi ALPOLIC FR v 100% polyethylene core video- 13 years before Grenfell Mitsubishi alerted the public:

https://www.linkedin.com/posts/network-architectural_firesafety-insuranceindustry-projectremediate-activity-6825686475502432256-83jj

Annexure 5

EMAIL FROM STRATA COMMITTEE -ONE EXAMPLE OF THE WIDESPREAD APPLICATION OF THE PANEL REPORT OUTSIDE REMEDIATE

My name is [deleted]. I am secretary of the strata committee at [deleted].

We are very keen to get re-cladding of our unit block underway with Alpolic NC but don't seem to be getting anywhere because George of [deleted] who will do the work, and Fred our original builder, are both nervous because the CPSP have not included Alpolic NC on their initial list of "approved" materials - even though that list is not relevant if we do not register with Project Remediate.

And although we received immediate Ku-ring-gai Council approval to proceed with Alpolic NC the moment you supplied a CodeMark certificate, George and Fred are looking for some form of State Government approval as well to ensure there will be no State Government issue with the use of Alpolic NC. They're funding two-thirds of our recladding cost and don't want to reclad twice. We're even at the stage where they're suggesting that without approval we may be better to just reclad in 3mm aluminium - even though 3mm aluminium is not as fire resistant, is heavier, is hard to bend neatly and has a poorer look and surface finish. But it has CPSP approval.

One important aspect of the CPSP report too is the reduced insurance premiums linked to the "approved" materials. We are currently paying a very high insurance premium while our building has combustible cladding in place, but want to be certain that insurance companies will recognise that Alpolic NC also justifies non-inflated premiums along with the other materials already listed in the CPSP report. If Alpolic NC is on the CPSP list or has some other form of State Government approval the insurers will hopefully recognise this.

I know you're trying to get the CPSP to add Alpolic NC to a second tranche report, but are you able to tell us

- * How certain is CPSP approval?
- * Where is their approval process up to?
- * How soon would a second tranche report be issued?
- * Or is there perhaps another form of State Government approval expected for Alpolic NC?

We're just trying to see a way forward with Alpolic NC in the near future if possible.