



# Protocols for Mitigating Cladding Risk Implementation

G.02 – IF-SCAN Procedure/Method

Version 3  
Date: 28 May 2026

OFFICIAL



***Aboriginal acknowledgement***

Cladding Safety Victoria respectfully acknowledges the Traditional Owners and custodians of the land and water upon which we rely. We pay our respects to their Elders past, present and emerging. We recognise and value the ongoing contribution of Aboriginal people and communities to Victorian life. We embrace the spirit of reconciliation, working towards equality of outcomes and an equal voice.

## **Application of Minister's Guideline 15**

---

These documents contain information, advice and support issued by CSV pursuant to Minister's Guideline 15 - Remediation Work Proposals for Mitigating Cladding Risk for Buildings Containing Combustible External Cladding. Municipal building surveyors and private building surveyors must have regard to the information, advice and support contained in these documents when fulfilling their functions under the Act and the Regulations in connection with Combustible External Cladding on buildings:

- a) which are classified as Class 2 or Class 3 by the National Construction Code or contain any component which is classified as Class 2 or Class 3;
- b) for which the work for the construction of the building was completed or an occupancy permit or certificate of final inspection was issued before 1 February 2021; and
- c) which have Combustible External Cladding.

For the purposes of MG-15, Combustible External Cladding means:

- a) aluminium composite panels (ACP) with a polymer core which is installed as external cladding, lining or attachments as part of an external wall system; and
- b) expanded polystyrene (EPS) products used in an external insulation and finish (rendered) wall system.

### **Disclaimer:**

These documents have been prepared by experts across fire engineering, fire safety, building surveying and architectural fields. These documents demonstrate CSV's methodology for developing Remediation Work Proposals which are intended to address risks associated with Combustible External Cladding on Class 2 and Class 3 buildings in Victoria. These technical documents are complex and should only be applied by persons who understand how the entire series might apply to any particular building. Apartment owners may wish to contact CSV or their Municipal Building Surveyor to discuss how these principles have been or will be applied to their building.

CSV reserves the right to modify the content of these documents as may be reasonably necessary. Please ensure that you are using the most up to date version of these documents.

### **Creative Commons Attribution 4.0 Licence**

This document is licensed under a Creative Commons Attribution 4.0 licence. You are free to re-use the work under that licence on the condition that you credit Cladding Safety Victoria, State of Victoria as author. The licence does not apply to any images, photographs or branding, including the Victorian Coat of Arms, the Victorian Government logo and the Cladding Safety Victoria logo.

## Table of Contents

<b>1</b>	<b>Introduction</b> .....	<b>1</b>
1.1	Document purpose .....	1
1.2	What is an IF-SCAN?.....	1
1.3	How is an IF-SCAN used for prioritisation? .....	1
<b>2</b>	<b>Key features of an IF-SCAN</b> .....	<b>3</b>
2.1	Initial assessment .....	3
2.2	Guiding principles and assumptions for assessment.....	3
2.3	External fire spread focus .....	4
2.4	Opening to opening external fire spread .....	4
2.5	Directional fire spread .....	4
2.6	Identification of cladding type.....	5
2.7	Two-step IF-SCAN process .....	6
<b>3</b>	<b>IF-SCAN desktop assessment</b> .....	<b>6</b>
3.1	Select the worst-case cladding ignition location .....	6
3.2	Determine whether the ignition of cladding is plausible at the selected location .....	6
3.3	Count the number of apartments directly impacted .....	7
<b>4</b>	<b>Site inspection</b> .....	<b>8</b>
4.1	Intent of site inspection .....	8
4.2	Matters to verify during site inspection .....	8
<b>5</b>	<b>Configuration of cladding to determine critical path</b> .....	<b>9</b>
5.1	Arrangement of combustible panels.....	9
5.2	Fuel load density.....	9
<b>6</b>	<b>IF-SCAN counting rules</b> .....	<b>10</b>
6.1	Counting the IF-SCAN of horizontally connected SOUs .....	10
6.2	Counting the IF-SCAN of vertically connected SOUs .....	11
6.3	Combustible Spandrel Infill Panels – vertical separation between apartments .....	12
6.4	Horizontal IF-SCAN counting – Eaves, canopies and projections .....	13
6.5	Vertical IF-SCAN counting - Cantilevers, overhangs and under crofts .....	14
6.6	Combined directional IF-SCAN counting.....	15
6.7	Canopies and feature walls.....	15
6.8	Horizontal balcony elements .....	16
6.9	Feature boxed attachments and capping .....	17
6.10	Small horizontal and vertical infills .....	18
6.11	Return walls and fins .....	19
6.12	Vertical attachments .....	20
6.13	Articulations .....	21
6.14	Cladding impacting egress tenability via openings .....	23

6.15	Townhouse and 'Townhouse style' Multi-storey Class 2 apartments.....	26
<b>7</b>	<b>Cluster identification and markup method.....</b>	<b>27</b>
7.1	What is cluster analysis .....	27
7.2	Rationale for cluster analysis .....	27
7.3	Assumptions and limitations.....	27
7.4	Method of cluster analysis .....	27
7.5	Marking convention.....	28
<b>8</b>	<b>Final facade IF-SCAN variation post cladding cluster assessment – Step 5.....</b>	<b>31</b>
	<b>Appendix A: PMCR document set and flow .....</b>	<b>32</b>
	<b>Appendix B: IF-SCAN assessment template.....</b>	<b>33</b>
	<b>Appendix C: Tool settings.....</b>	<b>38</b>
	<b>Appendix D: Worked example of an IF-SCAN .....</b>	<b>41</b>

## Abbreviations

Term	Meaning
ACP-PE	Aluminium Composite Panel with a polyethylene core
CRMf	Cladding Risk Mitigation Framework
CFSR	Cladding Fire Spread Risk
CSV	Cladding Safety Victoria
EPS	Expanded Polystyrene
Framework	Cladding Risk Mitigation Framework
IF-SCAN	Initial Fire Spread in Cladding Assessment Number
MBS	Municipal Building Surveyor
MG-15	Minister's Guideline 15
NCC	National Construction Code
PMCR	Protocols for Mitigating Cladding Risk
RWP	Remediation Work Proposal
SOU	Sole Occupancy Unit as defined in the National Construction Code

# 1 Introduction

---

The Cladding Risk Prioritisation Model (CRPM) B.01 establishes a framework to prioritise buildings according to risk. Building risk data is collated and used to divide buildings into different risk cohorts and then to order the buildings within each cohort.

A critical first step of the data included in this process is the Initial Fire-Spread Cladding Assessment Number (IF-SCAN) for each building. The IF-SCAN serves to classify and triage buildings according to the level of risk of a significant facade fire which may occur prior to emergency services intervention.

## 1.1 Document purpose

The purpose of this document is to describe the process used to assess clusters of combustible cladding using the IF-SCAN as the main determinate in the categorisation of combustible cladding risk on an existing building. The figure in Section 8 outlines the core steps undertaken for each building in determining the initial risk category and the subsequent further combustible cladding review of each building to assist with the potential lower cost and proportionate intervention pathway.

## 1.2 What is an IF-SCAN?

The Initial Fire Spread in Cladding Assessment Number is intended to identify those buildings on which cladding could plausibly result in a facade fire. The IF-SCAN is an estimate of the number of apartments that would be directly impacted under a worst-case scenario by a fire that ignites and spreads in combustible cladding prior to the first suppression response by firefighting agencies. As the first step, it is a single measure for the entire building's risk-based classification in accordance with the CRMF.

The purpose of the IF-SCAN is to serve as a numerical indicator that represents the extent of cladding risk present on a building. The IF-SCAN informs the application of the protocols for mitigating cladding risk (PMCR), underpinning two key aspects:

1. The categorisation of a building's cladding risk, as outlined in Table 1 below, and
2. The determination of a proportionate remediation response, tailored to the building's identified cladding risk categorisation.

## 1.3 How is an IF-SCAN used for prioritisation?

***The IF-SCAN assessment is the primary determinant of prioritisation for CSV.***

For this reason, the IF-SCAN is a conservative measure, and assessments tend towards over- rather than under- estimation. For example:

- Where the estimate is expressed as a range, the maximum value in the range is used to represent the IF-SCAN; and
- Where the type of cladding is unclear, it is assumed a worst type of cladding is in place.

The IF-SCAN thresholds are an integral part of the Cladding Risk Prioritisation Model adopted by the Victorian Government for a risk-based approach in the reduction of fire risk associated with combustible external cladding on certain residential buildings in Victoria.

**The IF-SCAN thresholds are tabulated below.**

Table 1: IF-SCAN thresholds

		Risk description	
Cladding risk rating category	Sprinkler protected	Not sprinkler protected	
<b>Unacceptable</b>	Risk of fire spread across the combustible external cladding of $\geq 4$ SOUs	Risk of fire spread across the combustible external cladding of $\geq 3$ SOUs	
<b>Elevated</b>	Risk of fire spread across the combustible external cladding of 3 SOUs	Risk of fire spread across the combustible external cladding of 2 SOUs	
<b>Low</b>	Risk of fire spread across the combustible external cladding of $\leq 2$ SOUs	Risk of fire spread across the combustible external cladding of $\leq 1$ SOU	

## 2 Key features of an IF-SCAN

---

### 2.1 Initial assessment

The analysis to determine the IF-SCAN is performed by the Cladding Safety Victoria Expert Panel. An assessment methodology informed by co-operative enquiry<sup>1</sup> has been adopted as the most appropriate method for the assessment of a large number of properties achieving consistency across the building pool.

This approach – PMCR prescribed rules combined with the co-operative enquiry – is designed to provide a consistent and repeatable method for identifying the contribution that cladding makes to a building's fire risk.

The IF-SCAN approach is not overly reliant on quantitative data, which is often unavailable, not captured universally for the buildings to be assessed, or is considered unreliable as a risk differentiator. The approach has the following advantages:

1. Minimal external resource requirement
2. Expedited decision making
3. Ensures that the primary focus of risk assessment is on buildings where the risk from combustible cladding is perceived to be the highest
4. Assists in the determination of the high-level fire safety risk presented by the cladding (The Cladding Risk Premium)<sup>2</sup>
5. Encompasses cladding configuration and building data obtained through the State-wide Cladding Audit (SCA), captured using the iAuditor Inspection Report and Risk Assessment Tool (RAT), where available.

Other fire safety features of a building are also important but remain secondary considerations for the purposes of determining the IF-SCAN.

### 2.2 Guiding principles and assumptions for assessment

The following seven (7) principles and assumptions are applicable to the IF-SCAN assessment:

1. Fire spread is considered between SOUs externally (Section 2.3),
2. Fire spread is considered externally between individual apartments openings (windows/doors) and via the cladding (Section 2.4),
3. Greater consideration is given to vertical fire spread, than is afforded horizontal fire spread (Section 2.5, as well as Section 5 ),
4. Likely ignition sources were considered in the development of the prescriptive rules embodied in the PMCR. An ignition source needs to be determined to enable an assessment of a cluster to begin, and
5. It is assumed the fire brigade would arrive quickly, in accordance with their charter and response targets, to manage evacuation and begin suppression activities.
6. Larger areas of combustible cladding (higher volumes) and increased fire load density will result in greater fire severity and fire spread potential, and
7. Cladding material with a higher heat of combustion (meaning it releases more energy per kilogram when burned), will add to the fire load and the potential severity of a fire.

---

<sup>1</sup> A participatory research method pioneered by John Heron (social scientist).

<sup>2</sup> The additional risk that cladding brings is akin to a Cladding Risk Premium and is the focus of the IF-SCAN measure.

## 2.3 External fire spread focus

The risk associated with façade fires is predominantly governed by external fire spread into openings of individual fire compartments or SOUs. It can always be argued that the external cladding can become an internal fire safety issue by way of cladding fire spread entering a building's internal wall system, and then onto and through the building's structure. The IF-SCAN, however, is designed to focus on the combustible cladding only (the 'cladding risk premium'). The IF-SCAN represents the number of apartments connected externally by combustible cladding and considers external cladding fire risk to be the primary risk requiring assessment and remediation.

## 2.4 Opening to opening external fire spread

A key principle of the IF-SCAN method is that cladding fire spread is predominantly an external phenomenon, occurring from one apartment opening to another via combustible cladding. This 'opening-to-opening' fire spread, together with the direction or orientation of the cladding connection between openings, is central to the IF-SCAN count.

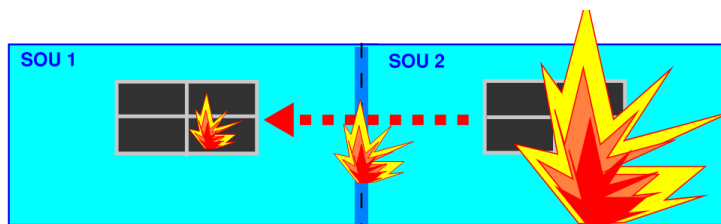


Figure 1: The IF-SCAN is the number of SOUs connected by cladding

The IF-SCAN assessment is the number of apartments connected by combustible cladding between their openings, and the resultant IF-SCAN is treated as representative of cladding fire spread risk. The cladding is therefore considered the primary pathway for fire transmission between apartments, making the IF-SCAN a cladding-focused value for the initial assessment and prioritisation of the combustible cladding risk on a building.

## 2.5 Directional fire spread

**Vertical fire spread** is the dominant trajectory for which cladding fire spread can occur. In a cladding fire scenario, the upward flow of convective heat can preheat the combustible cladding in the area above the flame front, exacerbating the rate and severity of the fire spread and increasing the adverse consequences for building occupants.

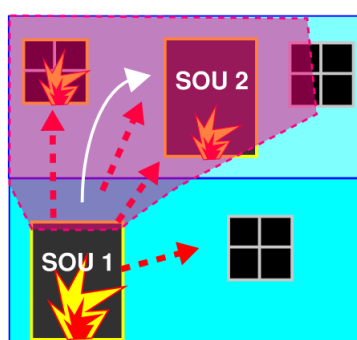


Figure 2: External cladding fire spread from one SOU to another SOU

**Horizontal fire spread** is recognised within the PMCR but is less likely to produce the same level of overall fire severity.

Thus, the fundamental focus on vertical fire spread as the dominant direction of cladding fire spread is embodied in the IF-SCAN counting rules and the PMCR more broadly.

## 2.6 Identification of cladding type

It is important to identify the type of combustible external cladding on a building. The types of cladding that represents the highest risk and forms part of the Cladding Risk Mitigation Framework (CRMF) approved by the Victorian Government are:

1. **Aluminium composite panels (ACP)** with a polymer core which is installed as external cladding, lining or attachments as part of an external wall system; and
2. **Expanded Polystyrene (EPS)** used as an external insulation and finish rendered wall system.

Since the original CRMF was published, CSV has conducted further testing on a variety of other cladding types, and determined that the following products should also be considered high risk, and included in the IF-SCAN assessment:

3. **Wood-Polymer Composites (Timber Composite Cladding - TCC)** used as external cladding or as an attachment; and
4. **Insulated sandwich panels<sup>3</sup>** with combustible thermoplastic polymer insulation as an insulator

The above material types are recognised as being highly combustible, with ACP-PE and EPS being the subject of some very serious cladding fires throughout the world.

However, it is important to note that different product compositions exhibit different fire spread behaviours and properties. Some products may have reduced fire spread potential due to a lower percentage of combustible materials or the inclusion of flame-retardant additives in their composition. This variance is reflected in the Fire Growth index of WPC below (Figure 3).

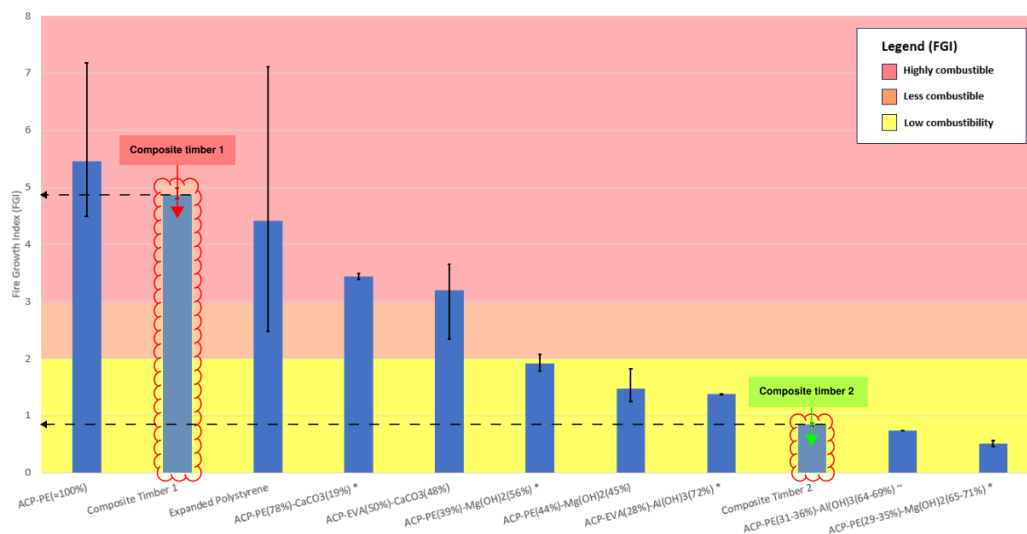


Figure 3: Fire Growth Index chart for various combustible materials

Material groups that have been used as cladding or as attachments that represent a much lower combustibility than that of EPS and ACP PE are listed as follows:

- **ACP FR** (ACP with flame retardant additives included in the mixture of the core composition, where the ratio of flame retardants to polyethylene exceeds 1)
- **Timber** (Dense hardwood types)
- **Conpolcrete** or other equivalent composite concrete products (CCP)

<sup>3</sup> Thermoset polymers such as rigid polyurethane (PUR) and rigid polyisocyanurate (PIR) may not melt, sustaining panel rigidity. The overall combustibility of these materials varies, and it is recommended that these materials and their performance in fire be confirmed.

## 2.7 Two-step IF-SCAN process

A desktop assessment is undertaken using a variety of information sources including; the statewide cladding audit report, architectural plans, fire engineering reports, destructive testing and laboratory reports, building location imagery via a web mapping platform (Near map, Google Earth, street view, Maps etc).

Following on from the desktop review, a site inspection is carried out to verify (ground truth) the desktop IF-SCAN assessment.

## 3 IF-SCAN desktop assessment

---

There are three steps to providing a quantitative estimate of the IF-SCAN as illustrated below. While these steps have the appearance of being sequential, they are interactive.

### 3.1 Select the worst-case cladding ignition location

The Building Review Panel (an expert panel, overseen by building surveyors, fire engineer(s), and construction management professionals), must confirm the location on the building façade where ignition could most likely lead to the greatest spread of fire along the cladding. For this assessment, the fire does not need to originate in cladding but be capable of reaching cladding. The worst-case location is the point where the fire first ignites cladding.

This process requires identifying and analysing the specific areas on a building where the combustible claddings configuration, type and amount could permit the greatest continuous spread of fire along the façade. The focus is on identifying areas with extended vertical runs of cladding that span multiple building levels, as these instances present the greatest risk for extensive cladding fire propagation.

#### **Consideration should be given to the following:**

- The proximity of the cladding to a fire source,
- Proximity of the cladding to openings in the SOU (in the external walls),
- The potential fuel load and contribution of the cladding to a fire (the area of the combustible panels),
- Building articulations,
- The configuration and connectivity of the cladding,
- The external wall geometries, including:
  - o Balconies and balcony returning walls;
  - o Eaves, overhangs, soffits and canopies;
  - o Balustrades and the potential for 'leapfrogging'; and
  - o Size, location and configuration of attachments.

Refer to Section 6 for reference examples.

### 3.2 Determine whether the ignition of cladding is plausible at the selected location

A test of plausibility is essential to ensure that a building is not prioritised because of a cladding ignition risk that is highly unlikely to eventuate. For instance, in a sprinklered building where there may not be any external ignition threats, cladding ignition is considered highly unlikely.

The BRP (Building Review Panel) can only confirm a worst-case cladding ignition location where ignition of the cladding at the selected location is plausible.

Consideration was given to two key categories of ignition threat: threats manifesting at the ground-level or balcony, and (ii) threats manifesting over the facade of a building typically from within an SOU out through openings to the building facade.

The following is noted to provide consistency with ignition threat identification:

1. A range of potential design fire scenarios was determined using fire engineering principles under the guidance of registered fire safety engineers. Should such circumstances arise, they constitute a 'fire source hazard (i.e. If this circumstance exists, then there is a 'fire source hazard')'.
2. If there is a 'fire source hazard', the likelihood of the fire occurring is **always**,
3. If a fire occurs proximally combustible cladding, then the cladding ignites **always**,
4. Where proximity to a fire source hazard is subjective, PMCR D documentation set (the science/evidence suite – prepared by CSV, RMIT University and under the supervision of a registered fire safety engineering professional), establishes proximity relations and ignition potential of fire source hazards.

In general terms, a facade location is considered a plausible location for cladding to ignite where the cladding is proximate to:

- A balcony;
- A building opening;
- Ground level/basement carpark;
- Ground level fire source hazards such as rubbish bins;
- Laneways and street-side parking; or
- Adjacent buildings.

The selection of the hazard is authorised by the Building Review panel, in the compulsory presence of Building Surveyor, Fire Safety Engineer and Construction Project Delivery professionals.

### 3.3 Count the number of apartments directly impacted

Combustible cladding can accelerate external fire spread, increase fire severity and ultimately facilitate the penetration of fire through openings to multiple SOUs.

The IF-SCAN is an indicator of the level of exposure (consequence) to the worst of these cladding properties. In that sense, this measure indicates the extent to which combustible cladding will rapidly engage multiple SOUs in a fire after it has become established.

Having established the potential initial spread of fire across the cladding on a facade, the CSV Expert Panel can use architectural plans to relate that external spread to the internal apartments (or SOUs). The IF-SCAN is a count of the SOUs impacted by a worst-case cladding-fuelled fire spread across a building façade through openings (windows and doors).

A building may have many clusters of cladding that connect multiple SOUs across several or all elevations; however, the IF-SCAN value is the value where the highest number of SOUs are connected via combustible cladding, representing the worst case and possibly the most significant area of fire spread.

While these steps have the appearance of being sequential, they are interactive. The practical experience of conducting these assessments shows that there is no point selecting a worst-case cladding ignition location in phase 1 only to render the fire implausible in phase 2.

## 4 Site inspection

---

A process of verifying (ground truthing) the desktop analysis and IF-SCAN is required.

### 4.1 Intent of site inspection

External site inspections (verification inspections) are required to:

1. Review and validate the desktop-based assessments.
2. Allow for adjustments to the IF-SCAN where additional information or evidence is observed or made available.
3. Identify and/or acknowledge any *exceptional circumstances* that may require further CSV discussion and consideration.

Pictures of each facade and notes should be taken and appended to the original assessment report for each building verified.

### 4.2 Matters to verify during site inspection

The following matters should be verified during the site inspection:

- Confirmation of the cladding material on the facade where the IF-SCAN was determined during the desktop assessment.
- Verify that the selected location represents a worst-case cladding fire scenario.
- Verify that the estimated number of SOUs connected by cladding is correct.
- Note the distance between the combustible facade elements and an adjoining building, i.e., less than or more than 3m from an adjoining building.
- Identify any exceptional circumstances\* or cladding related risk that may not have been represented appropriately by the IF-SCAN assessment.

\**Exceptional circumstances* may include, but are not limited to, the configuration or location of combustible cladding that may not be directly connected to SOUs but may substantially impact occupants in a plausible cladding fire scenario

## 5 Configuration of cladding to determine critical path

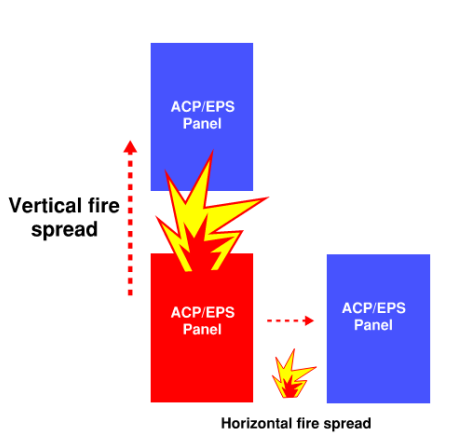
The configuration of the various cladding elements is identified to ascertain the critical path for the spread of fire for the purposes of the IF-SCAN. In addition to cladding type considerations, this section looks at some general concepts relating to cladding element proximity and geometry.

### 5.1 Arrangement of combustible panels

The orientation of the cladding on the facade (horizontally, vertically or irregularly arranged) is an important focus of cladding cluster assessments.

Similarly, an increase in fire load or fire load density on the façade will result in greater contribution to a fire's intensity, and an increase in the rate of vertical flame spread.

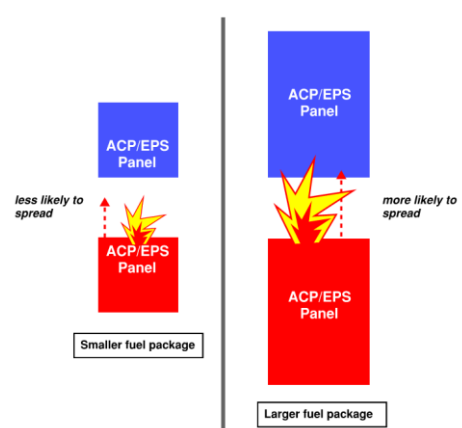
#### Arrangement of panels



#### General Principle 1:

Flames from a burning ACP/EPS panel are more likely to spread vertically than horizontally.

#### Fuel load density



#### General Principle 2:

The larger the burning panel (greater fuel load density), the more likely neighbouring panels will be ignited

Table 1: Images representing the logical fire spread assumptions attributed to thermal buoyancy and fuel load density within the IF-SCAN development

Whilst horizontal spread flame is plausible, the above images highlight buoyancy as a driving force in flame propagation.

For vertical flame spread, it is understood that there is a greater likelihood that a fire will reach a second cladding panel from the cladding panel of first ignition than is the case for horizontal fire spread.

### 5.2 Fuel load density

It is inherent within the PMCR that the volume of cladding will likely be proportional to the overall severity of a cladding fire, and that as the size (area) of a cladding panel becomes smaller, at some point the contribution of the cladding to a fire may be considered negligible, with such pieces becoming trivial and tolerable. The notion of cladding panel size and triviality is discussed in document E.01 – Cladding Risk Policy – Trivial and Tolerable Cladding Risk. The effects of this policy are inherent in the IF-SCANs counting rules.

## 6 IF-SCAN counting rules

This section outlines examples used to count the number of apartments (SOUs) affected in the early stages of a cladding fire.

1. Where cladding on the external wall connects two SOUs on the same level, it is a horizontal connection, denoted **2H**, where H indicates horizontal.
2. Where combustible cladding on external walls connects the openings of two SOUs vertically, it is denoted **2V**, where V indicates vertical.
3. Where continuous combustible cladding connects multiple SOUs horizontally, vertically or diagonally between openings, the IF-SCAN equals the number of connected SOUs.
4. Where cladding connects SOU openings vertically but is otherwise discontinuous (for example, spandrel panels only), the IF-SCAN is counted as 2, as shown in Table 2.

### 6.1 Counting the IF-SCAN of horizontally connected SOUs

Horizontal fire spread via combustible cladding is plausible, however it is considered less significant, in both the triaging (IF-SCAN assessment) and the treatment (risk mitigating intervention) processes of the PMCR.

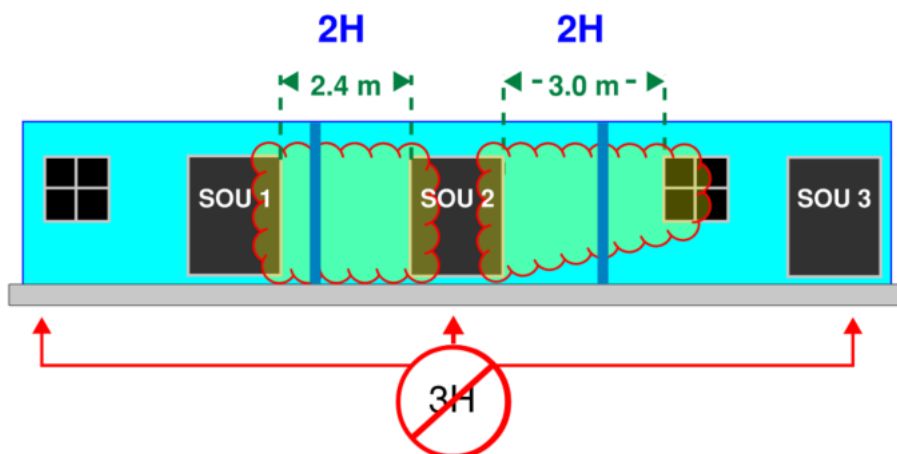


Figure 4: Horizontal connection – always considered a 2H for the purposes of IF-SCAN assessment

Horizontal fire spread is *limited to two apartments*. Where this connection exists, it is referred to as a **2H**. The '2H' effectively means that a horizontal connection exists. This horizontal connection cannot be continuous in the PMCR (increasing the number of SOUs connected horizontally), as indicated in Figure 3 above. This principle (limiting horizontal fire spread values to 'two') is critical to the concessions afforded townhouse construction in Section 6.13: 'Townhouse and *Townhouse style* Multi-storey Class 2 apartments.

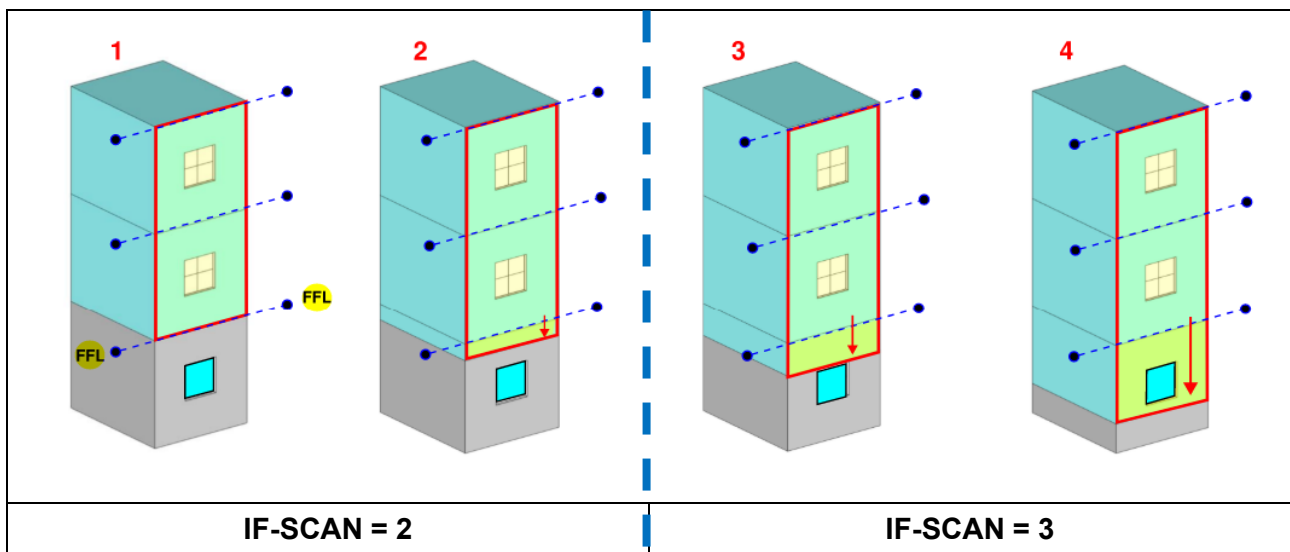
## 6.2 Counting the IF-SCAN of vertically connected SOUs

Where combustible cladding is installed to the external walls of an individual SOU, and the cladding abuts an opening, the SOU is to be included in the IF-SCAN count.

In this example, we have 3 individual SOUs stacked vertically. On the left-hand side there is:

- Non-combustible external wall cladding at the ground floor level (**grey**), and
- Combustible cladding installed to levels 1 and 2 above (light blue).

On the right-hand side, the cladding is close enough to the opening of the ground floor SOU, that that SOU too is considered to be connected in the cluster.



The following discussion is the supporting logic for when an IF-SCAN should be incremented (from an IF-SCAN of 2 to an IF-SCAN of 3):

### Discussion:

1. There is no combustible cladding installed to the ground floor level, subsequently, the IF-SCAN count only applies to levels 1 and 2. **IF-SCAN = 2**
2. A small amount of cladding is installed to the ground level, just below the finished floor level of level 1. Generally, cladding in this configuration typically serves to cover the join between the two different types of construction. **IF-SCAN = 2**
3. As the lower limit of the installed cladding extends further down onto the ground floor level, the area of cladding installed to that level increases significantly. Consequently, beyond a certain threshold, it becomes necessary to include the SOU in the overall count. The threshold is set where the cladding meets the opening because:
  - a. The cladding provided a complete connection from the ground floor level opening to the opening of level 1 above, and
  - b. Any area below this point would permit fire to travel from an external fire source hazard to the ground-level opening via combustible cladding. **IF-SCAN = 3**
4. In this image, the façade at the ground floor level is predominantly combustible cladding. **IF-SCAN = 3**

### 6.3 Combustible Spandrel Infill Panels – vertical separation between apartments

The following general fundamental CRPM/PMCR principle applies when counting an IF-SCAN vertically:

- Where the openings between two (2) individual SOUs are connected by cladding and there is the potential for fire spread from one SOU to another SOU via combustible cladding, then an IF-SCAN is counted.

The PMCR provides the following guidance, for sprinklered and non-sprinklered buildings, for the purposes of IF-SCAN counting and spandrel only:

1. In a **non-sprinklered building**, where we have combustible spandrel infill panels installed between vertically aligned openings, the IF-SCAN count cannot exceed an IF-SCAN of two (2), as the path of *cladding fire spread* explicitly involves two individual SOUs only, as the cladding is considered discontinuous,
2. In a **sprinkler protected** building, where spandrel separation is not a requirement, the resultant IF-SCAN is 0



3. *Table 1: Counting rules for spandrel panels - A maximum IF-SCAN of 2 applies to cladding infill panels that connect openings only, and there is a minimum gap of 900 mm between the infill spandrel panels. (i.e. no continuous cladding-to-cladding fire spread)*

A maximum IF-SCAN of 2 applies to cladding infill panels that connect openings only, provided that there is a minimum gap of 900 mm between the infill individual spandrel panels, in accordance with PMCR Document F.02 'Interventions to reduce cladding fuel'. Where combustible panels are separated by less than 900mm, they are considered to be continuous, and the IF-SCAN is to be counted accordingly. The figures in Table 1 are provided for guidance.

## 6.4 Horizontal IF-SCAN counting – Eaves, canopies and projections

If a fire is occurring beneath an eave, projection or canopy, the heat captured underneath can both increase the fire severity to the canopy (increasing the impact of the fire to the SOUs beneath the eave/projection), and spread in various directions, relative to the surface area and surrounding geometries. In the case of small eaves projections, extreme heat is less likely to be trapped beneath the horizontal soffit and less likely to provide for horizontal fire spread via the combustible cladding installed. The following applies to eaves with combustible cladding installed (refer Figure 4 below):

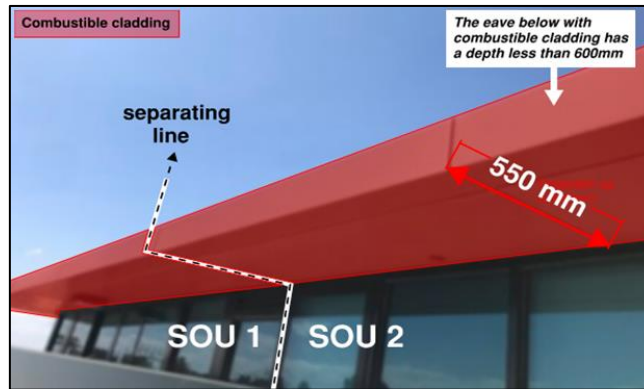


Figure 4: Combustible cladding installed to an Eave that is less than 600mm in depth.

Combustible eaves that have a projection of **less than 600mm** from the facade **do not generate a horizontal IF-SCAN** (cladding fire spread between SOU 1 and SOU 2).

Reference examples from CSV's program are provided in Table 2 below:

<p>The first level soffits are more than 600mm deep and would otherwise generate an IF-SCAN, but in this case, these are broken up by a non-combustible dividing wall. For the level 1 SOUs, <b>IF-SCAN = 1</b></p>	<p>Combustible fascia does not generate an IF-SCAN due to it being offset from the building and is horizontally configured. <b>IF-SCAN = 0</b></p>

Table 2: Counting examples – eaves, soffits and fascias

## 6.5 Vertical IF-SCAN counting - Cantilevers, overhangs and under crofts

The shape and size of cantilevers and overhangs can influence how fire heat is transferred to the area immediately below.

The subject building below (Figure 5) has a rise in storeys of four (4), with:

- Non-combustible masonry external walls at the ground floor level, and
- Combustible cladding to the external walls of levels 1, 2 and 3.
- Combustible cladding installed to the underside of the overhangs. (Examples B and C)

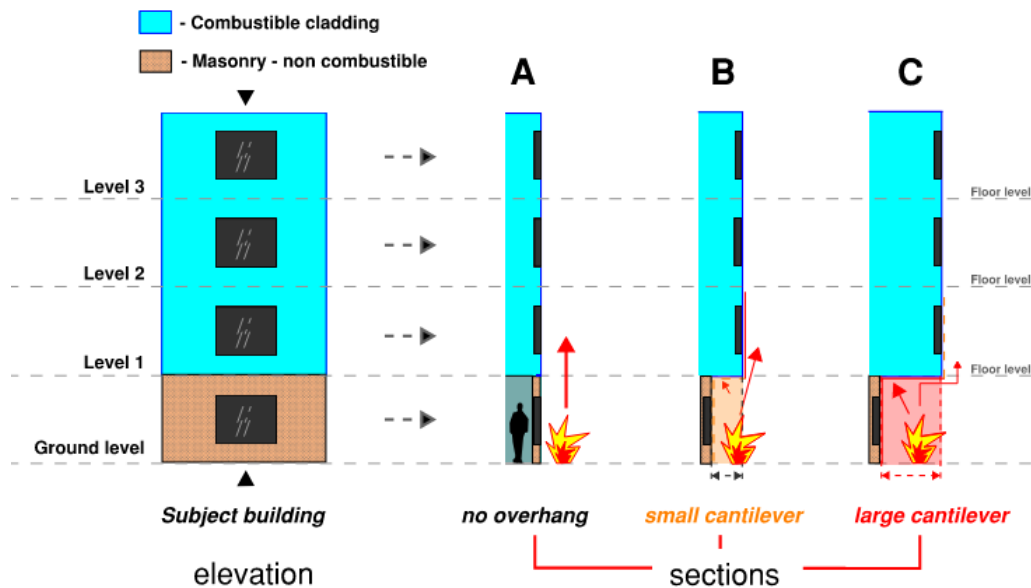


Figure 5: Subject building in elevation with non-combustible (masonry) walls at ground floor level and combustible cladding installed to levels 1, 2, and 3, including the soffits of examples B and C

Where soffits and overhangs have cladding installed to the underside, it is assumed that the ground level SOUs will be subject to greater fire severity as a result of the combustible cladding. Section A above, however, does not have any combustible cladding installed and is not included in the IF-SCAN count.

The significance of this with respect to counting an IF-SCAN in the **vertical** direction is considered in Figure 5, with rules defined in and discussed in the table below:

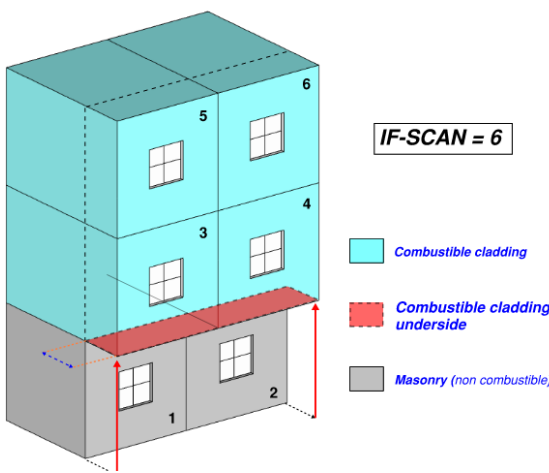
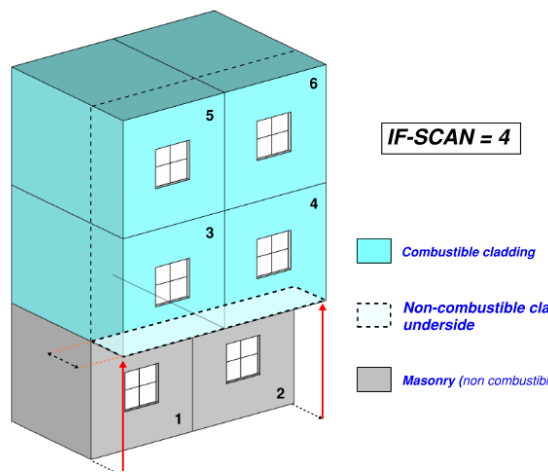
Table 3: IF-SCANS as nominated for the sections presented in Figure 6

Figure	Description	IF-SCAN
<b>A</b>	Building section with non-combustible (masonry) walls at ground floor level and combustible cladding installed to levels 1, 2, and 3 with no cantilever or overhang present	<b>IF-SCAN = 3</b>
<b>B and C</b>	Building section with non-combustible (masonry) walls at ground floor level and combustible cladding installed to the underside of the overhang/cantilever ( <b>any depth</b> )	<b>IF-SCAN = 4</b>

## 6.6 Combined directional IF-SCAN counting

In the example provided below, the impact of **combustible** vs **non-combustible** overhangs/cantilevers is considered with respect to **multi-directional** cladding connections.

Table 4: Cantilever depth and combined multi-directional fire spread considerations

 <p>Where cantilevers and overhangs have combustible cladding installed, the lower-level masonry SOUs are included in the IF-SCAN count.</p> <p><b>IF-SCAN = 6</b></p>	 <p>Where cantilevers and overhangs are <b>non-combustible</b>, the lower-level masonry SOUs are <b>not</b> included in the IF-SCAN count.</p> <p><b>IF-SCAN = 4</b></p>
---	--

## 6.7 Canopies and feature walls

The ACP is connected to eaves/canopies at the upper level (SOUs 5, 6, 7 and 8), both of which have a depth that is greater than 600mm, so the IF-SCAN must be incremented (below):



SOUs 1 - 8 would be considerably impacted by a cladding fire. The alcove has the potential for radiative feedback between the ACP PE feature panels facing each other in the centre

IF-SCAN is 8.

## 6.8 Horizontal balcony elements



An ACP/EPS balcony attachment that is external to the building envelope **would not** generate an IF-SCAN if it meets **all** the following criteria:

- may return back to the wall of the building if the cladding on that wall is non-combustible;
- no adjacent SOU window or door openings within 450mm of the ACP attachment;
- is separated from the balustrade above by a minimum of 900mm
- is constructed of non-combustible material on the inside face;
- soffits are non-combustible.

### **Low-rise (RIS of four [4] or less)**

- spacing between horizontal attachments is more than 900mm;

### **High-rise (RIS of five [5] or more)**

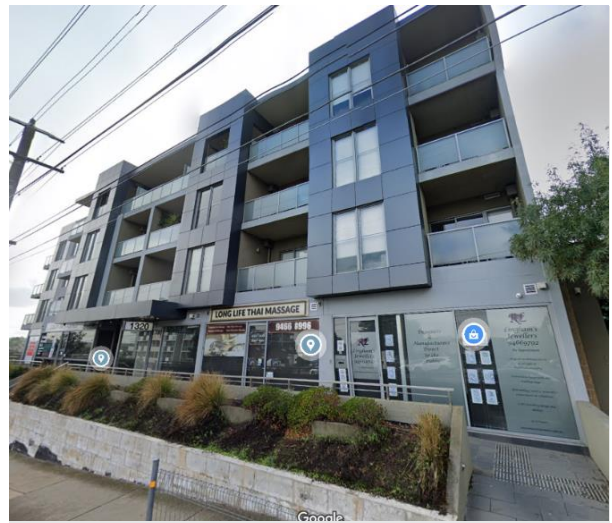
- spacing between attachments is more than 1:1.5 panel to gap ratio

The above examples meet the criteria and therefore **IF-SCAN is 0**.

## 6.9 Feature boxed attachments and capping



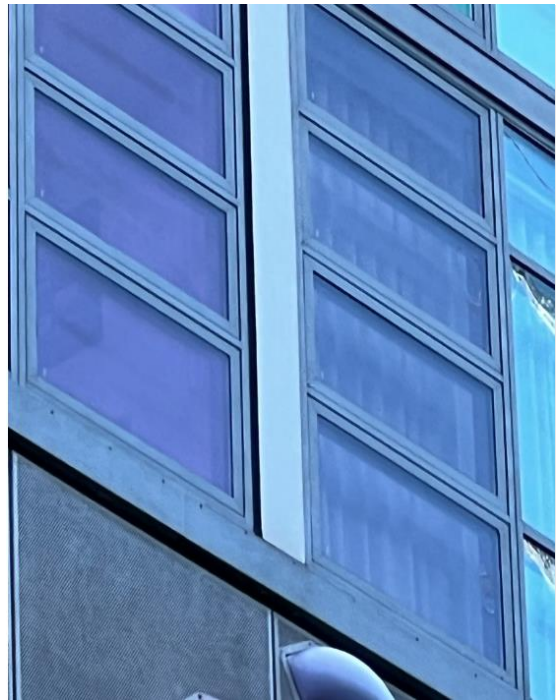
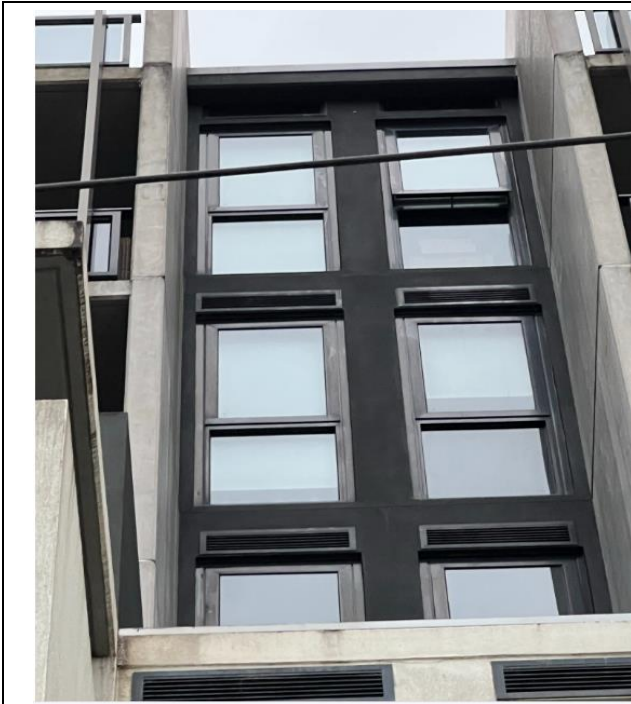
Architectural box/capping that does not return into the balcony (its size is about 75mm-150mm in depth), is not considered of sufficient size to spread into the SOU. The absence of a combustible soffit between SOUs also ensures no unreasonable spread into SOUs from an external fire source. **IF-SCAN is 0.**



This boxed feature does generate an IF-SCAN vertically (unsprinklered building), it surrounds the windows of the SOUs and is of a sufficient size to generate unreasonable fire spread.

**IF-SCAN is 3.**

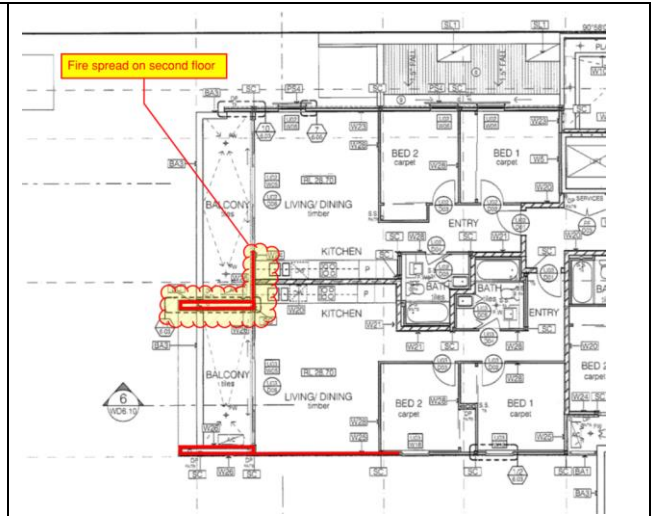
## 6.10 Small horizontal and vertical infills



**Sprinklered buildings**, where combustible cladding is **EPS** and it has been used in small strips covering slab edges and / or dividing walls between SOUs; that configuration does not give rise to a vertical or horizontal IF-SCAN (maximum of four storeys connected and limited to clusters where no part of the cluster is located above the fourth storey). The small area of cladding is considered to be trivial and not unreasonably contributing to the spread of fire in a sprinklered building. In this configuration an external hazard such as private courtyard or balcony will not affect the assessment. **IF-SCAN is 0.**

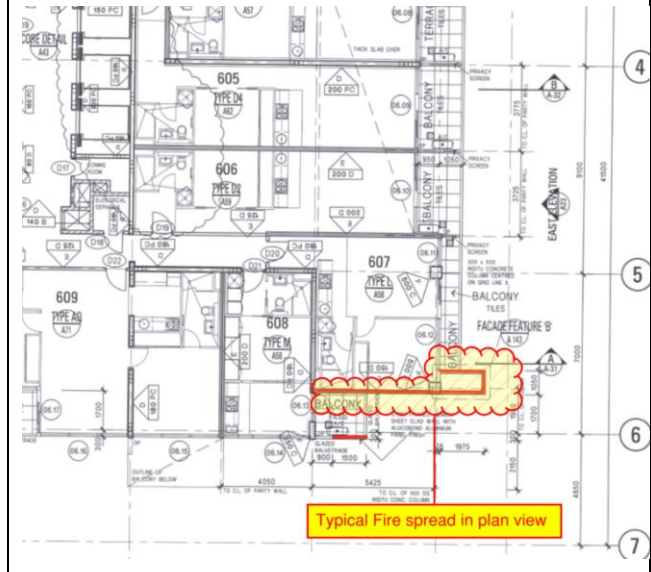
**Sprinklered buildings - ACP** cover strips or flashings that are over slab edges or dividing walls do not generate an IF-SCAN as the amount of cladding is unlikely to significantly contribute to the spread of fire. In the case of vertical strips, the vertical strips must not be in proximity to an external fire source. Maximum of 3 storeys connected and limited to clusters where no part of the cluster is located above the fourth storey. **IF-SCAN is 0.**

## 6.11 Return walls and fins



1. The critical path for the spread of fire is identified as the continuous ACP panel connecting 2 SOUs horizontally (returning into balconies) and 2 levels vertically, with a fire starting at the ground level.
2. The location of the separating wall is confirmed through available architectural plans (right).

The selected path results in an **IF-SCAN of 4**.



The assessment of this building estimated that cladding could (at maximum) carry fire to 12 SOUs (via ACP highlighted in red). The ACP returns horizontally into an adjoining SOU as shown on the plans. **IF-SCAN is 12**.

## 6.12 Vertical attachments



In the above images, the combustible cladding is installed as vertical attachments that are not directly connected to SOUs, and the elements are offset from the SOU opening. In these examples the balconies are considered open in nature, therefore not allowing for excessive heat to build up within the balcony space.



The green ACP extends vertically and returns horizontally to the adjoining SOU and generates an **IF-SCAN of 14**. The adjacent small vertical attachment is not of a sufficient size, and it is off set to the building in a perpendicular orientation. It would not be considered as contributing to an unreasonable fire spread. The worst-case connectivity via the green ACP is selected as the IF-SCAN value for the building.



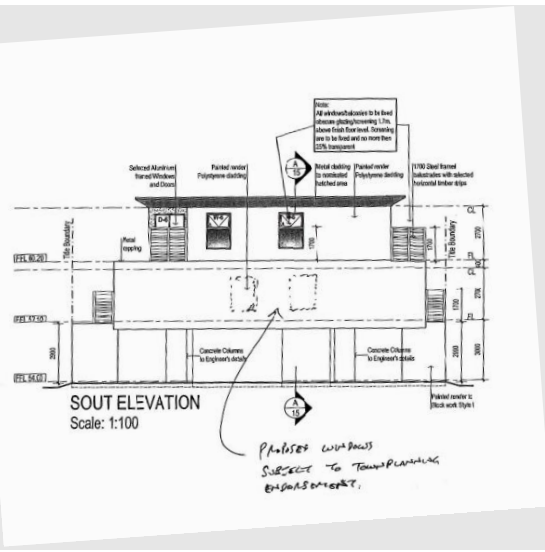
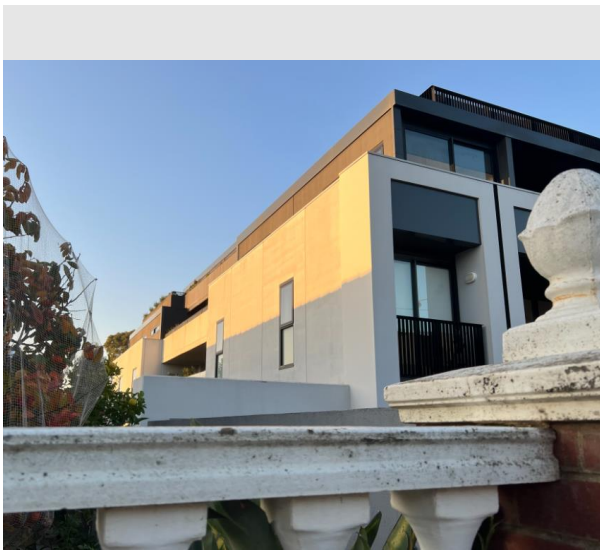
The attachment on the left does not generate an IF-SCAN, however the one on the right would, as it is close to windows and could involve up to three SOUs if the vertical combustible attachment is within 450mm of an openable window- **IF-SCAN is 3.**

### 6.13 Articulations



The podium level residential parts are set back from the ACP columns at the ground floor level and level 1. It is considered unlikely that the podium level SOUs would be subject to the spread of fire from the ACP clad columns.

Masonry walls highlighted in blue directly behind the ACP columns is expected to shield the level 1 SOUs from radiant heat flux resulting from a cladding fire in this area. **IF-SCAN is 0.**



Upper-level articulation (or wedding cake tiered design) breaks up any potential vertical fire spread. If the setback between the ACP of the upper storey is more than 1.1m then an IF-SCAN cannot be generated vertically. Consider only horizontal IF-SCAN between SOUs if applicable in this case.

## 6.14 Cladding impacting egress tenability via openings

Combustible cladding on the external wall of an egress path may pose a risk to the safe use of a path of travel, even where the cladding configuration may not under the PMCR create a cluster of concern or impact upon the safe use of the exit doors from the building.

A cladding fire may impact the tenability of an exit pathway by any of the following mechanisms:

1. Fire directly impinging upon an egress path'
2. Occupants' exposure to radiation from cladding fire while egressing or evacuating,
3. Combustible cladding installed to or abutting egress path openings.

The following 3 (three) scenarios are provided for reference.

### **Scenario A:**

#### IF-SCAN

The external wall has cladding that connects two individual SOUs, that are located either side of an egress corridor opening. Although the cladding surrounds the corridor opening, it is still considered that the cladding connects the 2 SOUs horizontally (i.e. considered a 2H).

- **IF-SCAN = 2**

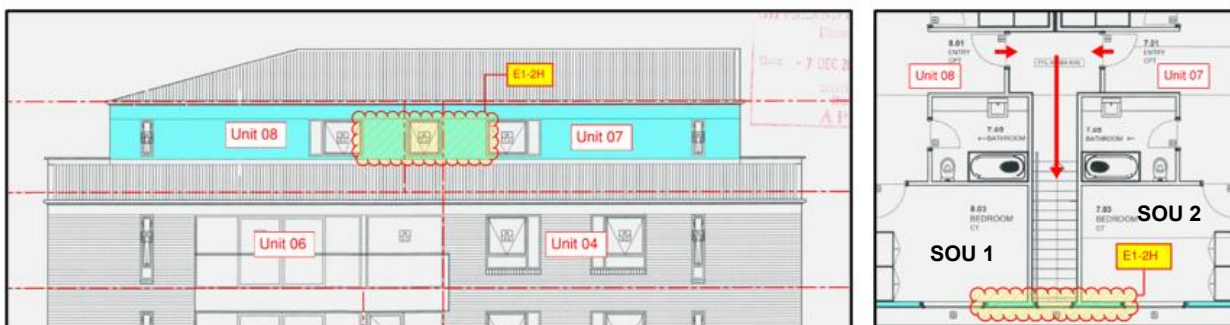


Figure 6: Scenario A – The two SOUs located on either side of an egress path opening are horizontally connected by combustible cladding.

The external wall has cladding that connects two individual SOUs, that are located either side of the opening to egress corridor separating them.

An external cladding fire may impact the corridor opening and compromise the tenability of the egress path **prior** to occupants evacuating from either:

- the immediately affected SOU, or
- the SOU connected to it via cladding.

#### Intervention

In such instances, the egress path must be protected by a smoke detection system installed so that activation of the BOWS occurs upon smoke detection in the shared egress path or corridor.

It is recommended that the detector be installed approximately 300-1500mm from the cladding affected opening.

## Scenario B

### IF-SCAN

In Figure 7, the external wall has cladding that connects two individual SOUs, that are separated by a masonry lift shaft. The cladding surrounds the corridor opening and is still considered to connect the 2 SOUs.

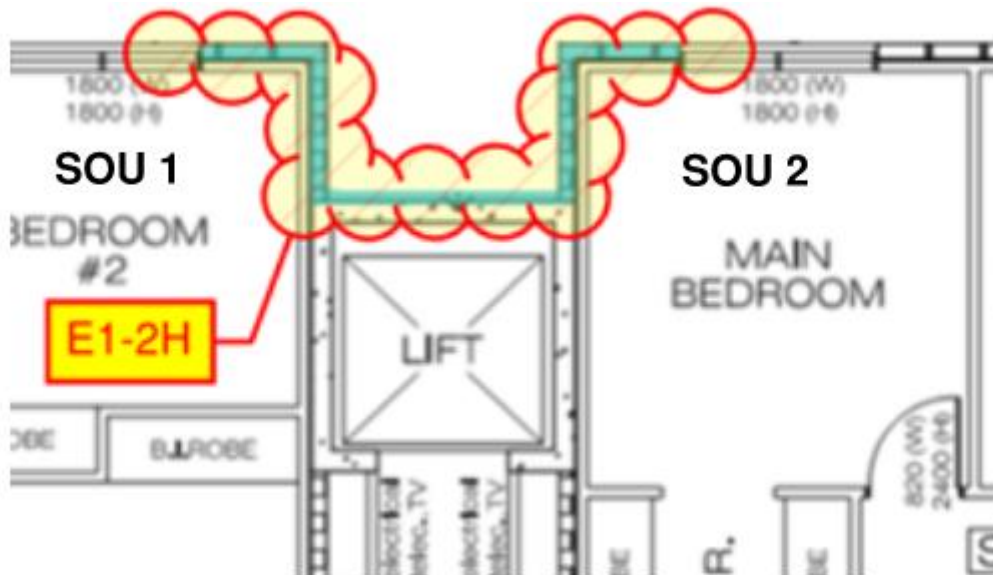


Figure 7: The external wall has cladding that connects two individual SOUs, located either side of masonry lift shaft.

It is noted that in some circumstances, a smoke detection system may not be present within a fire isolated stair or may not be present within the common corridor of a Class 2 building that is sprinkler protected.

The connection between the openings via combustible cladding exists, thus the connection between the 2 SOUs is a 2H. **IF-SCAN = 2**

### Intervention

The application of smoke detection to the common egress path does not apply in this instance, where the external wall does not incorporate any openings to the path of travel which could otherwise facilitate smoke ingress and compromise egress tenability.

The cladding is fixed to the outer face of a wall that is constructed of concrete, masonry or an approved fire rated system. Where this construction surrounds the fire rated glass opening, the ingress of fire/smoke is unlikely and the application of smoke detection to the common area in this location does not apply

## Scenario C

### IFSCAN

In the following example, the fire isolated stair core is situated between 2 SOUs. There is an opening in the fire isolated stair, however in this instance the opening is both:

1. Constructed of *fire rated glass*, and
2. Is unopenable.

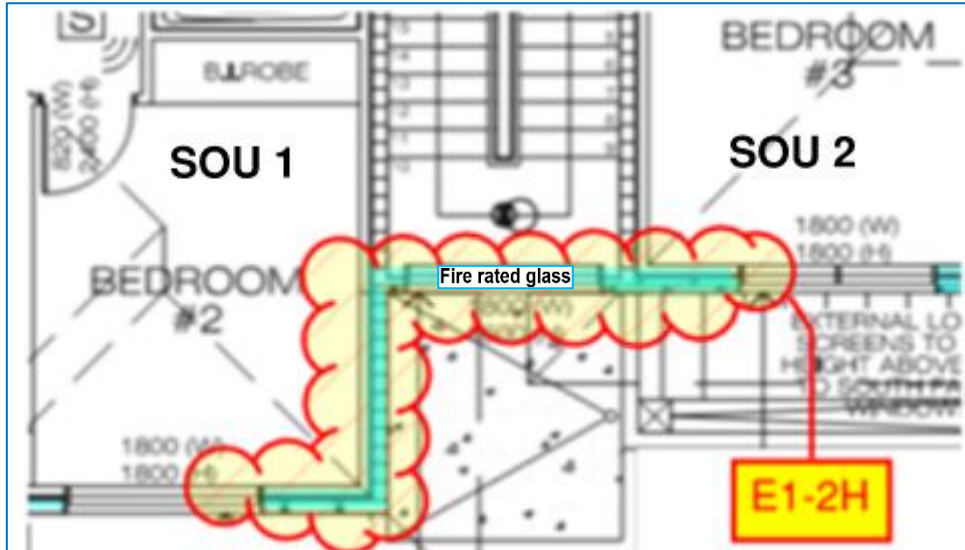


Figure 8: The external wall has cladding that connects two individual SOUs that are located either side of a fire isolated stair (assuming fire rated glass)

The connection between the openings via combustible cladding exists, thus the connection between the 2 SOUs is still a 2H.

- **IF-SCAN = 2**

### Intervention

The application of smoke detection to the common egress path does not apply in this instance. where the external wall does not incorporate any openings to the path of travel that could facilitate smoke ingress, compromising the egress tenability.

The cladding is fixed to the outer face of a wall that is constructed of concrete, masonry or an approved fire rated system. Where this construction surrounds the fire rated glass opening, the ingress of fire/smoke is unlikely.

## 6.15 Townhouse and 'Townhouse style' Multi-storey Class 2 apartments

The detection and alarm strategies designed in the PMCR were primarily designed for Class 2 apartment buildings. Generally, such buildings have numerous apartments connected horizontally and vertically, and the potential risk of fire spread across the external façade in multiple directions.

Side by side townhouses are considered a special case inside the PMCR, and although the connection between them is typically horizontal, there is the potential for diagonal cladding connections to be made. An example of this may be where cladding is installed across multiple levels, connecting the lower level of one townhouse to the higher clad level of the neighbouring townhouse. These diagonal cladding connections provide the potential for both horizontal and vertical fire spread. In these instances, the contribution of thermal buoyancy is considered in the counting methodology, and the diagonal cladding connections are nominated as 'special' (S) connections (i.e. 2S, 3S etc.), triggering the requirement for BOWS and thermal detection.

The installation of thermal detection connected to the BOWS is generally required in buildings with shared egress paths, as is common in Class 2 apartment buildings, where the thermal detector will trigger the BOWS and a general fire alarm (GFA) is activated prior to an internal potential flashover fire, which could in turn impinge upon the cladding.

The intent of this detection strategy is to provide other occupants of the building (in particular those residing in SOUs located within the same cluster and being above the SOU of fire origin) early warning of a fire which could impact on the cladding. This in turn should allow them to exit via the shared egress path prior to the common egress path being impacted by smoke.

Townhouse style SOUs generally have their own entry/exit, and do not share a common egress route. Hence the requirement for BOWS is somewhat redundant, in that there is no shared egress path that can be compromised, and there would (generally) not be a building wide fire detection and alarm system installed as part of the base building infrastructure (something that is more normal in apartment buildings). For Townhouse style' Multi-storey SOUs, the following applies:

### IF-SCAN counting for townhouses

The IF-SCAN counting methodology can be extended to townhouses in such that cladding can connect individual side by side townhouses. Where cladding has been installed over multiple levels of side-by-side townhouses/multi-storey SOUs, diagonal connections between the individual SOUs are plausible. Diagonal cladding connections provide the potential for both horizontal and vertical fire spread, thus the contribution of thermal buoyancy is considered, and the cladding connections are nominated as 'special' (S) connections (i.e. 2S or 3S);

### Interventions for townhouses

The following explicitly apply to townhouse style SOUs:

1. Where Townhouse-style multi-storey SOUs have their own entry/exit and do not share a common egress route, they are exempt from the requirement of a BOWS.
2. Smoke alarms are still required to be installed to the openings impacted by cladding as per the PMCR.

## 7 Cluster identification and markup method

---

### 7.1 What is cluster analysis

A cluster analysis identifies all areas of concern where combustible cladding on a building facade connects two or more sole occupancy units (SOUs) and could promote fire spread between SOUs.

“Area(s) of concern” means areas where, a fire could ignite and has the potential to reach to external cladding and spread between two or more SOUs. This spread could be vertical, horizontal or combination of vertical and horizontal spread.

### 7.2 Rationale for cluster analysis

Cluster analysis identifies and quantifies all areas of concern for external fire spread between two or more SOUs, connected through combustible external cladding material. This will assist CSV to develop a Remediation Work Proposal (RWP) on those targeted areas of concern for immediate intervention and/or interventions through the Procedure for Mitigating Cladding Risk (PMCR).

Cluster analysis will assist to develop an efficient and cost-effective solution for unacceptable and elevated cladding fire risk to reduce to acceptable/low level of cladding fire risk on a building.

### 7.3 Assumptions and limitations

There will be a certain level of assumption on the extent of combustible external cladding(s) on the building due to access limitations, for all unacceptable and elevated risk buildings. Assumed extent of cladding will be marked up according to CSV colour convention (see [Appendix C](#), which provides the [Colour Legend for Combustible Cladding Markup](#)).

Cluster analysis considers CSV’s in-scope products on the external facade. These include Expanded Polystyrene (EPS) and Aluminium Composite Panel (ACP-PE)<sup>4</sup>.

Cluster analysis will not consider the wall system on the buildings and cluster analysis will not consider low combustibility cladding such as Composite Concrete Panel (CCP)/QT, and ACP FR<sup>5</sup>. Aluminium composite panels with a greater percentage of polymer to flame retardant ratio will be considered ACP-PE

Cluster analysis will be carried out on elevation drawings (with supplement of layout drawings) based on identification through site inspections and desktop analysis of available information. The External Facade Consultant will provide markup drawings for buildings with unacceptable cladding fire risk. CSV will identify and markup drawings for buildings with elevated cladding fire risk.

### 7.4 Method of cluster analysis

Cluster analysis for buildings will be done on elevation drawings with assistance from layout drawings. Buildings with unacceptable cladding fire risk should have markup drawings provided by the external facade consultant through the Due Diligence inspection. Markup will be done according to CSV’s colour legend (see [Appendix C](#), which provides the [Colour Legend for Combustible Cladding Markup](#)). Buildings with elevated cladding fire risk shall have markup drawings done by CSV’s internal resources.

---

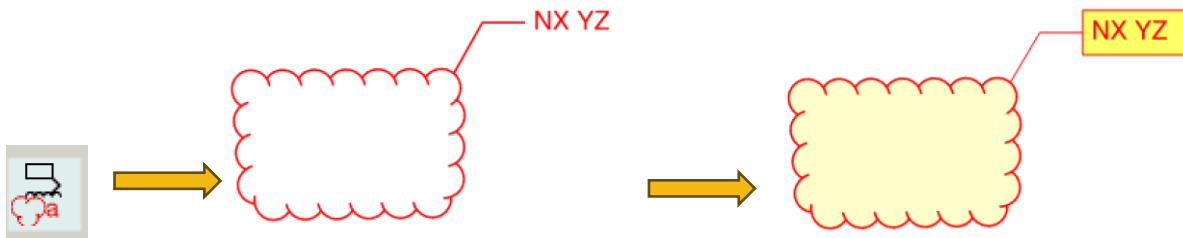
<sup>4</sup> Timber composite products and other variations of combustible façade material may be considered, providing the product is interconnected with in-scope materials and cladding clusters

<sup>5</sup> ACP FR is defined in *Guide for Aluminium Composite Panels with Flame Retardant on Existing Buildings*, by Cladding Safety Victoria and Victorian Building Authority, dated May 2024

Once markup is complete, cluster analysis can commence to identify area(s) of concern on each elevation. The method is to identify the number of areas where two or more SOUs are connected through external combustible cladding either:

- Vertically (**V**), and
- Horizontally (**H**), and
- Both Vertically and Horizontally (**S**).

Identified areas shall be marked in cloud on elevation drawings. A typical coloured cloud marker should be used using the below example.



More information provided in the Tool Settings section.

## 7.5 Marking convention

Marking convention for cluster analysis shown below:

### **NX YZ**

N = North elevation

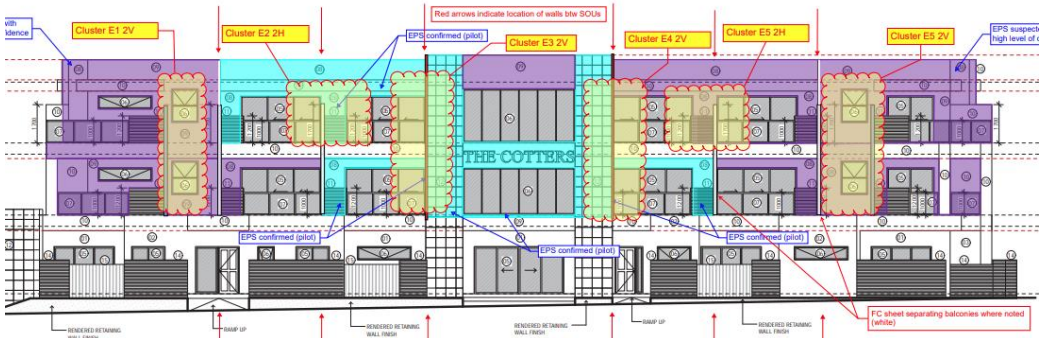
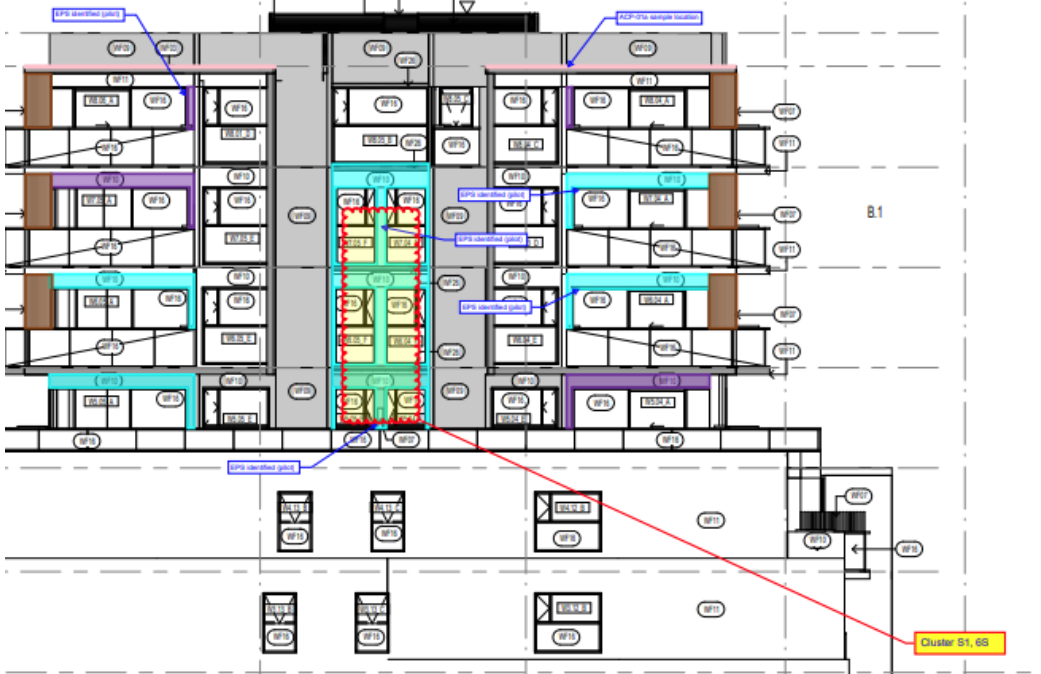
X = Number identifier of the particular cluster in this elevation

Y = Number of SOUs connected

Z = The way SOUs are connected, i.e. Vertically, Horizontally, or Special (both). Use 'V', 'H' or 'S'

Some examples of marking convention for cluster analysis are shown below for different scenarios:

Cluster	Description
Cluster <b>W1 2V</b>	<p>W=West elevation            1=Cluster number on the west elevation            2=Number of SOUs connected through combustible cladding            V=SOUs connected vertically</p>

Cluster	Description
<p>Cluster <b>E5 2H</b></p>	 <p>E=East elevation  5=Cluster number on the east elevation  2=Number of SOUs connected through combustible cladding  H= SOUs connected horizontally</p>
<p>Cluster <b>S1 6S</b></p>	 <p>S=South elevation  1=Cluster number on the south elevation  6=Number of SOUs connected through combustible cladding  S= SOUs connected vertically and horizontally</p>

If building contains internal elevations, use **IN**, **IS**, **IW** and **IE**.

For example, cluster “IW1 2H” represents the first cluster in internal west elevation with two horizontally connected SOU.

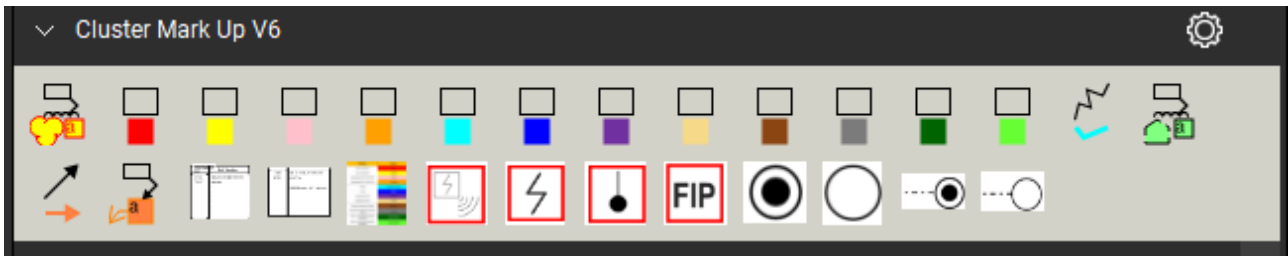
If a facade facing in North-East, use **NE** and accordingly for other elevations. I.e., **SE** for South-East; **SW** for South-West and **NW** for North-West.

For example, cluster “NW3 4S” represents the third cluster in North-West elevation with four SOUs connected horizontally and vertically. It is recommended that you use the nominated elevation description used in the architectural drawings for consistency.

In the end of cluster mark up on each elevation, list all the clusters and SOU numbers associated to each cluster.

Go to 'Cluster Mark Up' section of the tool bar and click and drag 'Text Box' tool for the input (see below). If there's not enough space in elevation drawings, add a blank page by going to Document tab and select Insert Blank page.

**Note:** For new Bluebeam users, CSV has set up a toolbox for commonly used symbols and markers.



In Step 4, the identified clusters are reviewed after the completion of the detailed cluster assessment including further information which may not have been available during the initial IF-SCAN assessment.

Where cladding clusters are not in proximity to *plausible* ignition sources, or the cladding comprises of low combustibility materials, those clusters are eliminated. The reason for these clusters being eliminated is that they are not considered at Step 4 as 'clusters of concern' which give rise to the consideration of interventions. They are subsequently eliminated from the cluster count.

As indicated in Section 0, a test of ignition plausibility is imbedded into the PMCR process. Flashover fire is considered a plausible ignition threat, regardless of whether or not a building has a sprinkler system installed. To discuss this further, the PMCR is reduced conceptually to consist of two fundamental ideas:

#### **1- Counting:**

- Cladding identification and connection (the IF-SCAN assessment or number of individual apartments connected by cladding), and

#### **2- Treating:**

- Cladding remediation – being the type and extent of work required to sufficiently reduce 'cladding risk premium' to an acceptable level.

It is noted that for sprinklered buildings, the occurrence of full apartment flashover is expected to be highly unlikely. It is important to note that this does not impact the IF-SCAN **counting stage**. Instead, it is *always* considered that the number of SOUs directly connected by combustible cladding exists – this is not influenced by the sprinkler status.

Concessions *are* made however for sprinklered buildings in the second **treating stage**, where the level of intervention required for sprinklered buildings is typically less than that required for non-sprinklered buildings with the same IF-SCAN value.

## 8 Final facade IF-SCAN variation post cladding cluster assessment – Step 5

---

The IF-SCAN value is the initial value given to the building depicting the worst location and representing the highest area of cladding connectivity between SOUs. However, in some cases when a further detailed analysis has been undertaken of all the *clusters* of combustible cladding and an assessment of cladding type and plausible fire scenarios, the final IF-SCAN value for the building may be subject to change.

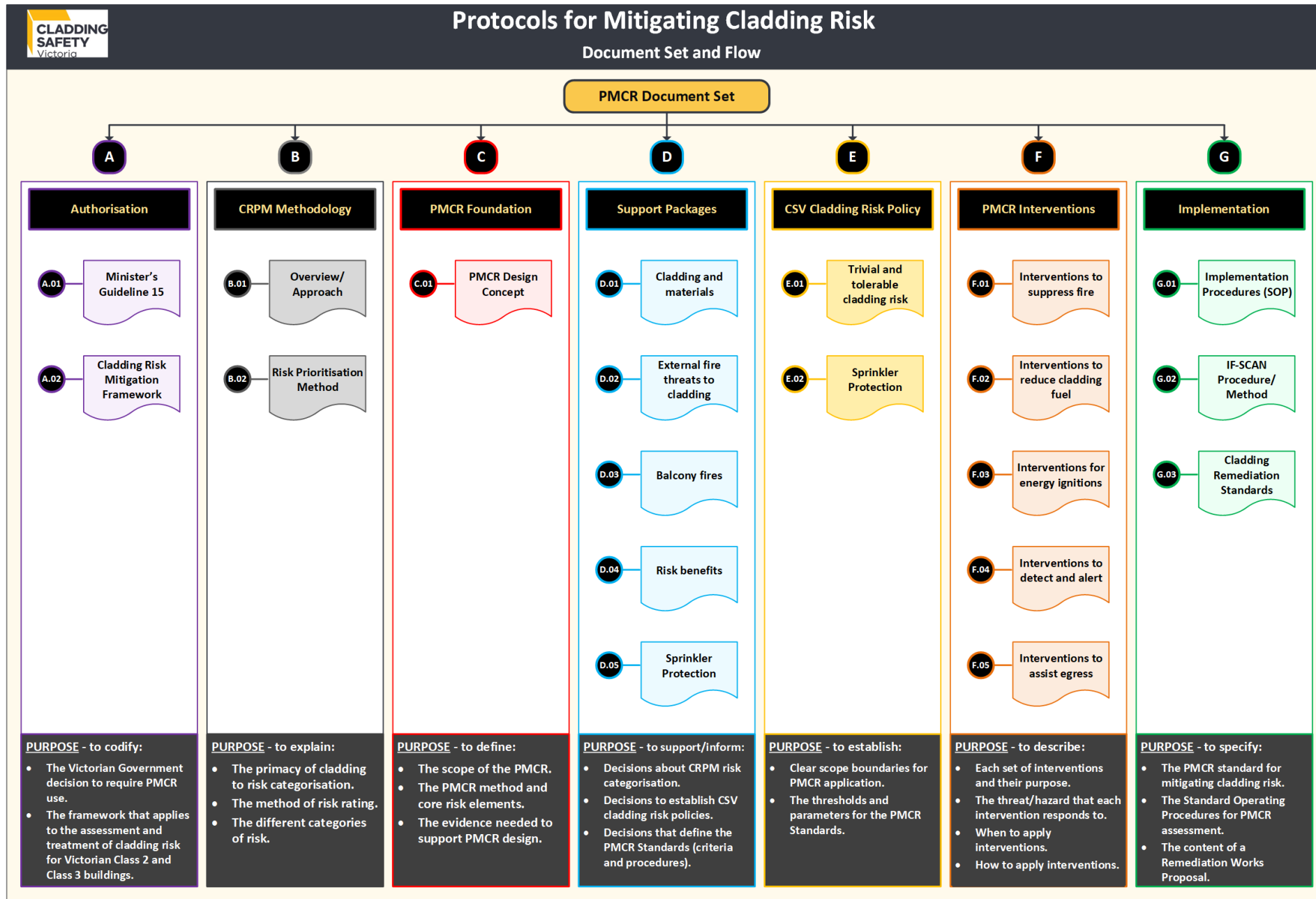
The following diagram is a summary of a five-step process in identifying and naming cladding *clusters* and resultant *confirmed IF-SCAN* value for the building.

- **Red** indicates building level assessment – and remains tethered to the term “IF-SCAN”;
- **Yellow** indicates cluster level assessment – and introduces new terms that include the word “cluster”; and
- The flow of steps shows the connection between building and cluster level assessments.

While the IF-SCAN represents the overall risk rating of the building, each cladding cluster has its own risk profile. When treating cladding risk, a solution must be developed to address the risk associated with each cladding cluster.

The process of identifying, marking up and assessing cladding clusters is detailed in Section 7. The application of the Cladding Rectification Standards to each identified cluster is covered in a suite of supportive document packages to the PMCR.

# Appendix A: PMCR document set and flow





# Initial Fire Spread Cladding Assessment

**BXXX; Street name, Suburb**  
INSERT COUNCIL NAME Council



## Introduction

The Victorian Government established Cladding Safety Victoria (CSV) to assist owners corporations (OCs) of Class 2 residential apartment buildings faced with the issue of combustible cladding, with potential funding for the highest risk building.

Critical to this task has been the development of a detailed view and understanding of the risk of each building, relative to all other buildings referred to CSV.

In 2021, CSV, in partnership with CSIRO (Data 61), developed the **Cladding Risk Prioritisation Model (CRPM)**. A key plank of this work is a methodology referred to as the **Initial Fire Spread Cladding Assessment Number (IF-SCAN)**, which is provided through this document.

About CSV's IF-SCAN methodology

The IF-SCAN is a measure for determining a building's combustible cladding risk by estimating the number of apartments likely to be directly affected in the early stages of a fire that may spread via combustible cladding elements.

The methodology requires the selection of a worst-case cladding ignition location where a qualitative judgement indicates that ignition in cladding at the selected point is plausible.

The methodology then allocates a figure (IF-SCAN) for the building based on the number of SOUs directly impacted.

The process for determining the IF-SCAN involves a two-stage qualitative assessment, conducted by a panel of appropriately qualified subject matter experts (SME). The two stages are:

1. A desktop review of the building and an initial IF-SCAN
2. Verification of the desktop review (and IF-SCAN score) via a site inspection.

The two-stage review process enables the triaging and prioritisation of buildings entering CSV's program based upon the potential impact of a cladding fire to the subject apartments.

## About this document

This document has been drafted to validate CSV's view of the cladding risk on the building. It is provided to Municipal Building Surveyors (MBS) upon request to assist them in their review of the building.

As this document demonstrates, CSV's view is that this building presents a **xxxx cladding risk**.

## Disclaimer

This document is provided to the MBS of **INSERT COUNCIL** as advice based on CSV's assessment of the fire risk posed by combustible cladding on the building at **ADDRESS, CITY**. It does not constitute a holistic building review or audit. This document should not be considered in isolation from other relevant factors nor used without consultation with CSV.

While CSV has a statutory ability to provide advice, it is not a regulator, and any regulatory direction should not be implied or assumed. Noting that the MBS is to have regard to any information, advice or support provided by CSV in accordance with Minister's Guideline 15 pursuant to section 188(1)(c) of the Building Act 1993.

Please note that this document is not intended to be used for construction. Intellectual property rights pertaining to items contained within this document remain with the original intellectual property owners. This document is not to be provided to other parties (other than agents or representatives of the MBS or lot owners/tenants of the building) without the consent of CSV. This document is provided as advice only and is not an indication of CSV's funding intentions.

**Number of SOUs impacted = X (Value from CRP Verification)**

**Overview Image of Building**

*Insert overview image of building here (street-view, google earth, photos, real estate etc.)*

**Aerial Image**

*Insert standard floor plan that represents a typical floor in this building.*

**Desktop Assessment Images**

*Images should indicate areas chosen to be the worst-case scenario for cladding fire spread.*

<p><b>Elevation 1:</b> Comment</p>	<p><b>Elevation 2:</b> Comment</p>
<p><b>Elevation 3:</b> Comment</p>	<p><b>Elevation 4:</b> Comment</p>

**Additional Documentation**

<p><b>Early fire spread estimation mark up:</b> Comment</p>	<p><b>Description</b> Comment</p>
<p><b>Description</b> Comment</p>	<p><b>Description</b> Comment</p>
<p><b>Description</b> Comment Delete rows as needed</p>	<p><b>Description</b> Comment</p>

**IF-SCAN Assessment:**

<b>Date:</b> Click or tap to enter a date.	<b>Assessed by:</b> <i>Insert Name Here</i>
<b>Documentation available</b>	iAuditor, Plans, Google
<b>Elevation and Area considered</b>	<input checked="" type="checkbox"/> elevation considered for the assessment.
<b>Location of plausible ignition</b>	Ground/Podium, Balcony, Flashover
<b>Early Fire Spread Estimate</b>	No. of SOUs = <input checked="" type="checkbox"/>
<b>Exceptional circumstances?</b>	Insert here any commentary or exceptional circumstances that should be considered upon verification ( <i>if any</i> )
<b>Discussion:</b>	

**IF-SCAN Verification:**

<b>Date:</b> <i>Click or tap to enter a date.</i>	<b>Verified by:</b> <i>Insert Name Here</i>
<b>Initial comments</b> (if any)	
<b>Number of SOUs impacted</b>	No. of SOUs = <b>X</b>
<b>Actions required?</b> <i>(if any)</i>	
<b>Verification comments</b>	

**Verification images:**

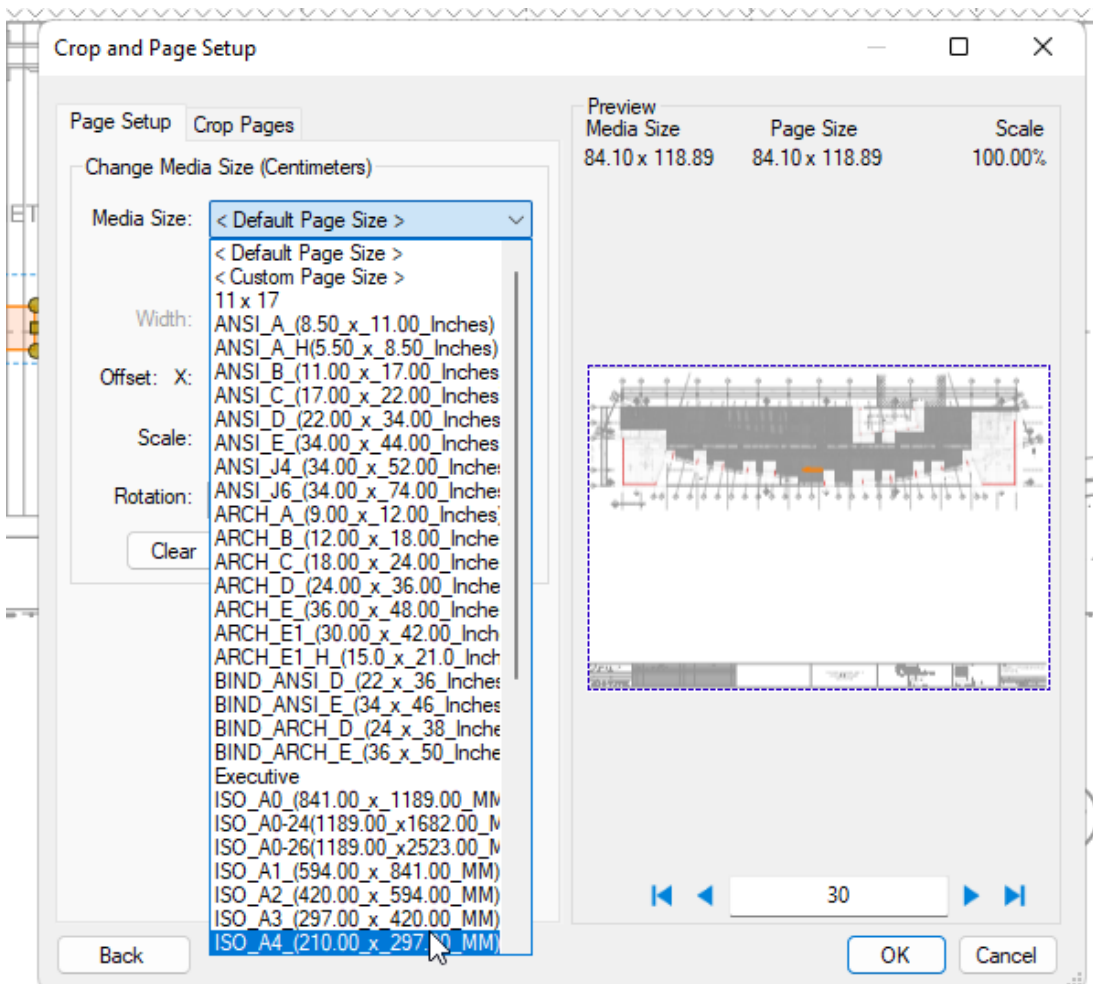
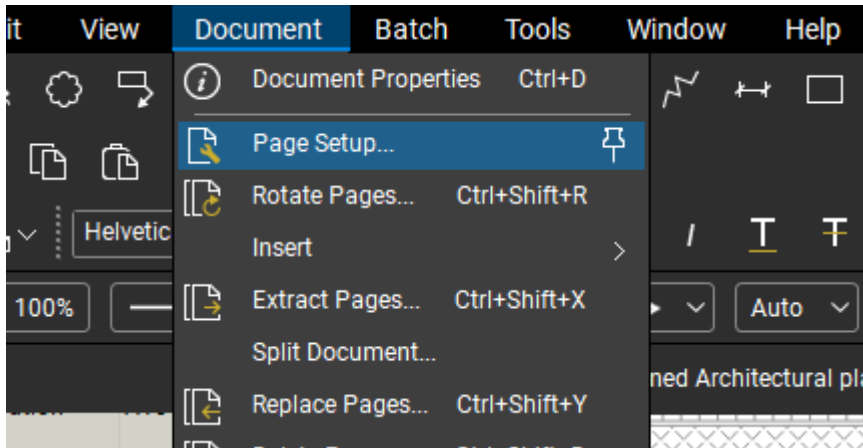
<b>Elevation 1:</b> Comment	<b>Elevation 2:</b> Comment
<b>Elevation 3:</b> Comment	<b>Elevation 4:</b> Comment

**Additional Documentation**

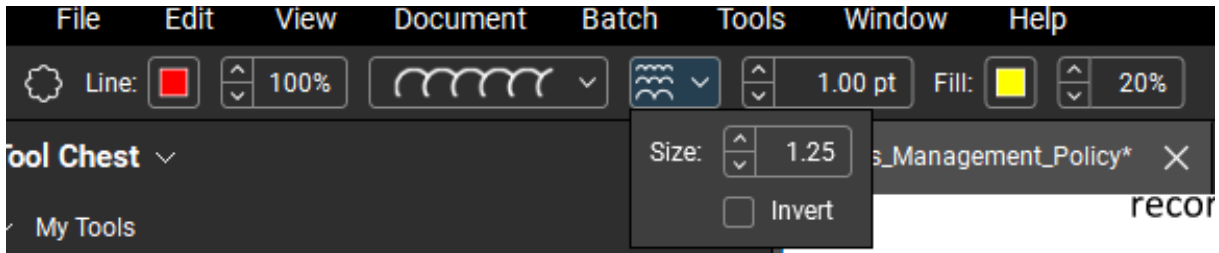
<b>Description</b> Comment	<b>Description</b> Comment
<b>Description</b> Comment	<b>Description</b> Comment

## Appendix C: Tool settings

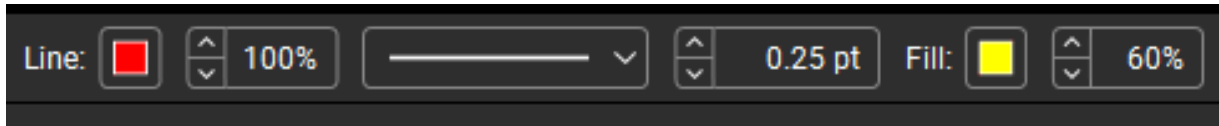
**Before marking up plans, the document scale will need to be set to A4 to ensure a consistent size.**



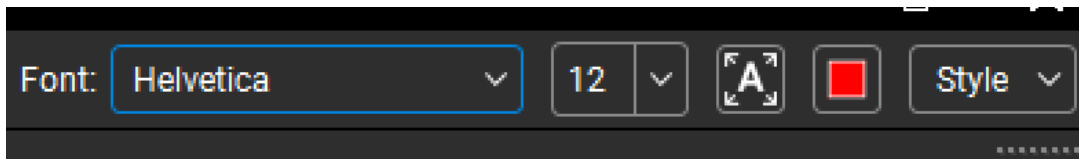
To set up the cloud tool use following settings.



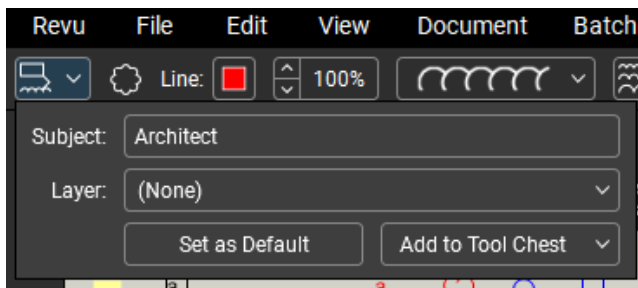
For marking, use the following settings.



For font, use the following settings.



Above settings can be set as default.



### Colour legend for combustible cladding markup

Cladding	Colour	Colour Code (R, G, B)
ACP >50% PE	Red	255, 0, 0
ACP <50% PE	Yellow	255, 255, 0
Suspected ACP >50% PE	Pink	255, 192, 203
Suspected ACP <50% PE	Orange	255, 160, 0
EPS	Light Blue/Aqua	0, 255, 255
CCP	Blue	0, 0, 255
Suspected EPS	Purple	112, 48, 160
Suspected CCP	Gold	247,218,137
Timber/Composite Timber	Brown	139, 69, 19
Suspected Timber/Composite Timber	Grey	123, 123, 123
Other Combustible Material (Identify)	Dark Green	0, 100, 0
Other Combustible Material (Identify)	Light Green	102, 255, 51

**Notes:**

- 'Other Combustible Material' includes any potentially combustible material outside the scope of ACP/EPS/CCP, such as polyurethane (PUR), polycarbonate sheeting, Expanded Perlite (EPL), calcium and magnesium-based boards, etc.
- Red is used for ACP >50% PE and light blue/aqua is used for EPS as they are the most visible colours on white drawings.

**Standard symbol library**

The following symbols are to be used to identify new active fire safety system components for inclusion in the proposed interventions when preparing RWPs.

**Heat detector – AS1670**



**Smoke detector – AS1670**



**Smoke alarm -  
240V hardwired – AS3786**



**Fire Indicator Panel**



**Sprinkler head – below ceiling**



## Appendix D: Worked example of an IF-SCAN

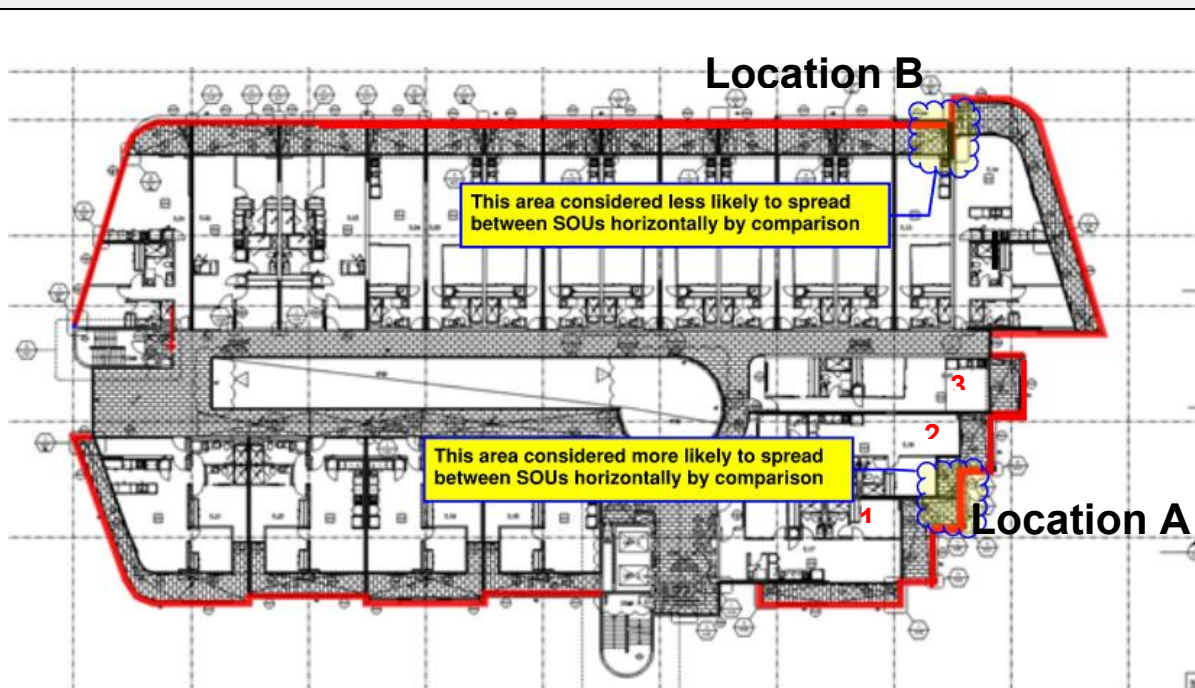
The following is a brief example of an evaluation of the building's elevations for the desktop stage of the IF-SCAN.

### Selection of a worst-case location for the IF-SCAN:

The following is a brief example of an evaluation of the building's elevations for the desktop stage of the IF-SCAN.

It will be seen in the following example that upon evaluation of all building elevations, the worst-case location for a cladding fire is identified at Location A. It is determined that Elevation 1 (Location A) will provide the highest IF-SCAN.

#### Location selection example

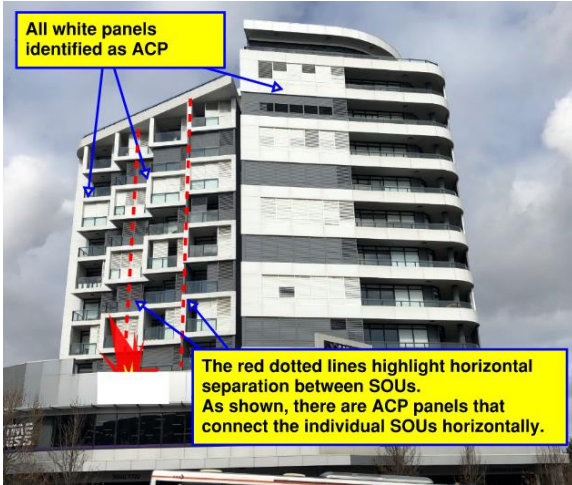


#### Floor plans: -

Floor plans are required to understand where ACP connects multiple apartments horizontally, more specifically to identify the location of SOU separating walls.

In the above example, Locations A and B present similar opportunities for vertical fire spread, as shown in Elevation 1 (location A) and Elevation 4 (location B) respectively. It can be seen here in **location A** that the ACP connects apartments 1, 2 and 3 horizontally by way of the balcony fascia at the elevation. For the above, it is considered that Location A presents the greater potential for a cladding fire comparatively due to the complexity of the balcony geometries and the arrangement of the ACP.

**Location selection example**



**Elevation 1 (Location A)**

Multiple SOUs in a complex arrangement are connected by the white ACP - horizontally and vertically on the left-hand side. The white ACP is also located to the soffit of these SOUs.

On the right-hand side of Elevation 1, there is one SOU per level with balconies that span the full width, partly covered by louvres.

The dark grey areas of this elevation are predominantly tilt panel (masonry) construction.



**Elevation 2 (Location B)**

Elevation 2 predominantly consists of narrow single bedroom SOUs with balconies separated by tilt panel construction. The grey balustrades and white architectural features are ACP. Metal louvres located to all balconies.



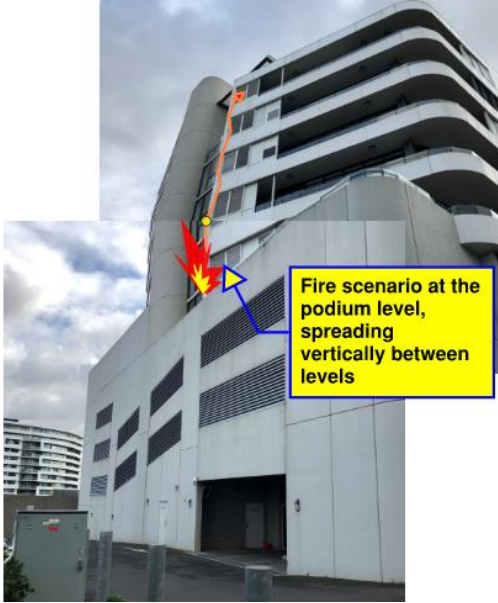
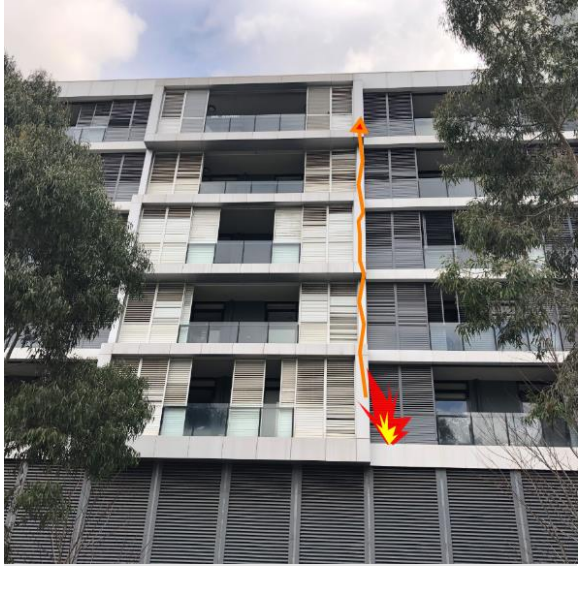
**Elevation 1 (Location A)**

Upon closer inspection of Elevation 1 (Location A), due to the presence of ACP to the soffits of SOU balconies and the complex configuration of the external ACP



**Elevation 2 (Location B)**

The Expert Panel concluded for the above elevation, that the fire would largely remain external to the balcony and SOUs. The ACP is broken vertically and attached to tilt

Location selection example	
<p>vertically and horizontally, there is the potential for a large number of SOUs to be involved in a cladding fire.</p>	<p>panel construction. The vertical white ACP returns and stops at the edge of the neighbouring SOU balconies (as indicated at Location B of the floor plan).</p> <p>It is considered for this elevation that a cladding fire could likely jump levels, however for the early stages of a cladding fire, Elevation 1 presents a greater potential for a cladding fire to involve a higher number of SOUs than Elevation 2.</p>
	
<p><b>Elevation 3</b></p> <p>The above elevation was not considered to be worst case as there are only 5 levels connected vertically by the ACP.</p>	<p><b>Elevation 4</b></p> <p>Again, the above elevation was not considered to be worst case as there are only 5 levels connected vertically by the ACP.</p>

## Outcome

For the above example, it can be concluded that Elevation 1 (Location A) presents the greater potential for the highest number of SOUs to be involved in the early stages of a cladding fire due to the complexity of the balcony geometries and the horizontal and vertical arrangement of the ACP.