

GOAL:

- › Give people time to escape a burning building by limiting the spread of fire to 3.5 m vertically from a fire source over external cladding (Building Code Clause C3.5)
- › Stop fire from spreading from one property to another by making sure that materials near the boundary won't easily ignite (Building Code Clause C3.7)
- › Limit overall risk of harm to building occupants by considering the likelihood and consequence of failure of any fire safety system intended to control fire spread (Building Code Clause C3.9)

CONTEXT:

Significant high-rise fire events globally have increased the fire engineering community's understanding of how fire spreads externally and within modern facade construction. These learnings include the type and scale of tests that should be undertaken to fully understand how fire spreads in the cladding system. Many other countries, including Australia and the UK, have reduced their reliance on small-scale tests and now require large-scale tests of cladding systems for high-risk and complex buildings. Similarly, MBIE has reconsidered the fire testing protocols for cladding systems. The first step of MBIE's review was the release of the guidance 'Performance of external wall cladding systems' in February 2019 (2019 Cladding Guidance). The next step includes the proposal for change in November 2020, which will expand the suite of cited test standards to those most commonly used in other markets and expand the access of products to the country while still maintaining an appropriate level of safety. The changes will also improve consistency in the way that fire safety compliance is demonstrated and provide certainty of the requirements for testing cladding systems.



1. BUILDING < 7 m HIGH AND > 1 m FROM BOUNDARY

C/AS2 2019 AMENDMENT 1 REQUIREMENTS	No restrictions
C/VM2 2017 AMENDMENT 5 REQUIREMENTS	No restrictions
2019 CLADDING GUIDANCE REQUIREMENTS	No restrictions
NEW 2020 REQUIREMENTS IN C/AS2, C/VM2 AND CLADDING GUIDANCE	No change
NATURE, SCALE AND IMPACT OF THE CHANGE	Nil



2. BUILDING < 7 m HIGH AND < 1 m FROM BOUNDARY

C/AS2 2019 AMENDMENT 1 REQUIREMENTS	See item 4. BUILDING <10m HIGH AND <1m FROM BOUNDARY
C/VM2 2017 AMENDMENT 5 REQUIREMENTS	See item 4. BUILDING <10m HIGH AND <1m FROM BOUNDARY
2019 CLADDING GUIDANCE REQUIREMENTS	See item 4. BUILDING <10m HIGH AND <1m FROM BOUNDARY
NEW 2020 REQUIREMENTS IN C/AS2, C/VM2 AND CLADDING GUIDANCE	See item 4. BUILDING <10m HIGH AND <1m FROM BOUNDARY
NATURE, SCALE AND IMPACT OF THE CHANGE	There is a relaxation to the AS/VM requirements, relative to the C/VM2 2017 Amendment 5 requirements



3. BUILDING < 10 m HIGH AND > 1 m FROM BOUNDARY

C/AS2 2019 AMENDMENT 1 REQUIREMENTS	No restrictions
C/VM2 2017 AMENDMENT 5 REQUIREMENTS	<p>If sprinklered:</p> <ol style="list-style-type: none"> No requirements <p>If not sprinklered:</p> <ol style="list-style-type: none"> Small scale test on components of a cladding system is required
2019 CLADDING GUIDANCE REQUIREMENTS	No restrictions
NEW 2020 REQUIREMENTS IN C/AS2, C/VM2 AND CLADDING GUIDANCE	No restrictions
NATURE, SCALE AND IMPACT OF THE CHANGE	There is a relaxation to the AS/VM requirements, relative to the C/VM2 2017 Amendment 5 requirements. This resolves conflicting requirements between 7 m and 10 m building heights.

4. BUILDING < 10 m HIGH AND < 1 m FROM BOUNDARY



C/AS2 2019 AMENDMENT 1 REQUIREMENTS

1. Small scale test on “substantive components” of external wall cladding system, OR
2. Use an outer layer less than 1 mm thick and fixed to non-combustible material, OR
3. Large-scale testing of the entire wall assembly

C/VM2 2017 AMENDMENT 5 REQUIREMENTS

If sprinklered:

1. No requirements

If not sprinklered:

2. Small scale test on components of cladding system

2019 CLADDING GUIDANCE REQUIREMENTS

Refers to Acceptable Solution options including the use small scale testing

NEW 2020 REQUIREMENTS IN C/AS2, C/VM2 AND CLADDING GUIDANCE

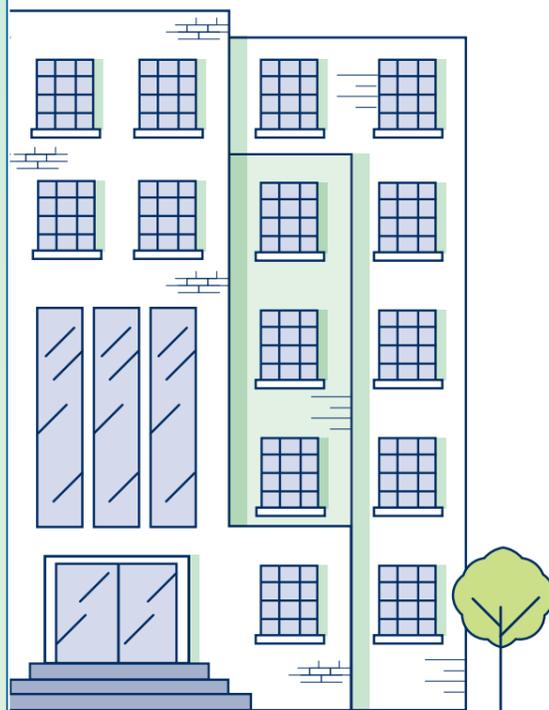
There are three options to choose from, all of which involve small scale test on cladding materials.

NATURE, SCALE AND IMPACT OF THE CHANGE

Nil to minor impact. Does not affect the use of common materials/ products

Some specialist products that currently comply through option 2 will need to undergo additional small-scale testing (~\$500-\$1200 per product). This is expected to have negligible impact on their use.

5. BUILDING > 10 m HIGH



C/AS2 2019 AMENDMENT 1 REQUIREMENTS

Three options to choose from:

1. Small scale test on “substantive components” of external wall cladding system, OR
2. Use an outer layer less than 1 mm thick and fixed to non-combustible material, OR
3. Large-scale testing of the entire wall assembly (cladding, framing and insulation)

C/VM2 2017 AMENDMENT 5 REQUIREMENTS

1. No requirements

If not sprinklered:

2. Refers to Acceptable Solution options including the use small scale testing

2019 CLADDING GUIDANCE REQUIREMENTS

Residential/sleeping:

If sprinklered:

1. Small scale tests on cladding, rigid air barrier, and insulation

If not sprinklered:

2. Large-scale testing for whole assembly (including cladding, insulation, framing etc) but no restrictions on specific products

Commercial/non-sleeping:

1. Small scale tests on cladding, rigid air barrier, and insulation

NEW 2020 REQUIREMENTS IN C/AS2, C/VM2 AND CLADDING GUIDANCE

1. Small scale test on “cladding materials”, OR
2. Intermediate or large-scale testing for “external wall cladding system” (including cladding, insulation, framing etc.), OR
3. Additional alternative compliance pathways discussed in the guidance document.

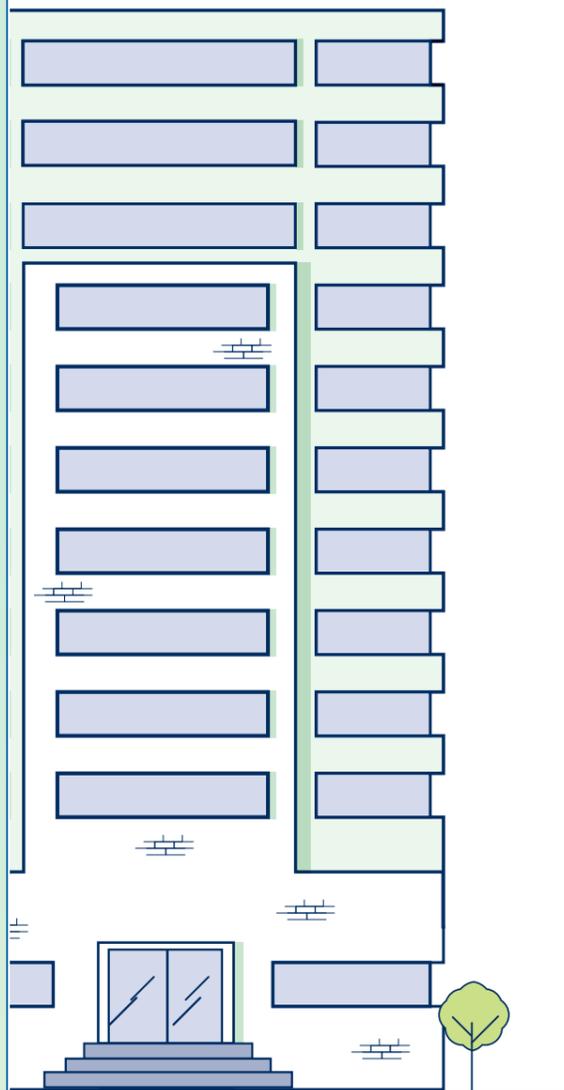
Note: The 2019 cladding guidance is being updated with the November release of revised C/AS2 and C/VM2. This 2020 revision of the cladding guidance will be in line with the new C/AS2 and C/VM2 requirements and discuss additional pathways for compliance.

NATURE, SCALE AND IMPACT OF THE CHANGE

For sprinklered buildings, the current C/VM2 offers a loophole, which will be closed. The AS and VM will now both require small scale testing to be undertaken.

Intermediate or large-scale testing is a one-off cost of ~\$80-100k per cladding system (not per building). A cladding assembly may already make up 25% of the total build cost. The cost of testing is expected to be ~5-15% of the total cost of cladding on a single building.

6. BUILDING > 25 m HIGH



C/AS2 2019 AMENDMENT 1 REQUIREMENTS

Three options to choose from:

1. Small scale test on “substantive components” of external wall cladding system, OR
2. Use an outer layer less than 1 mm thick and fixed to non-combustible material, OR
3. Large-scale testing of the wall entire assembly (cladding, framing and insulation)

C/VM2 2017 AMENDMENT 5 REQUIREMENTS

Small scale test of cladding system. OR, Large or medium scale facade type tests.

2019 CLADDING GUIDANCE REQUIREMENTS

Residential/sleeping:

Large-scale testing for external wall cladding system (including cladding, insulation, framing etc) but no restrictions on specific products.

Commercial/non-sleeping:

Small scale tests on cladding, rigid air barrier, and insulation with large scale testing of wall assemblies with timber framing to demonstrate timber does not char.

NEW 2020 REQUIREMENTS IN C/AS2, C/VM2 AND CLADDING GUIDANCE

Intermediate or large scale testing for the external wall cladding system.

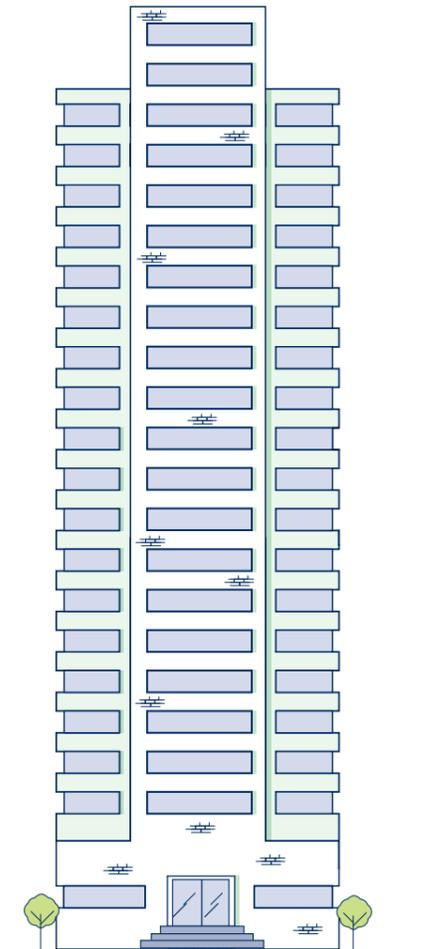
NATURE, SCALE AND IMPACT OF THE CHANGE

Suppliers need to meet new test requirements.

Intermediate or large-scale testing is a one-off cost of ~\$80-100k per cladding assembly (not per building). A cladding system may already make up 25% of the total build cost. The cost of testing is expected to be less than 5% of the total cost of cladding on a single building (less than 1% in many cases).

There is nothing preventing timber framing, in conjunction with particular cladding materials, from passing the required intermediate or large-scale testing.

7. BUILDING > 60 m HIGH



C/AS2 2019 AMENDMENT 1 REQUIREMENTS

Out of scope of the document

C/VM2 2017 AMENDMENT 5 REQUIREMENTS

Out of scope of the document

2019 CLADDING GUIDANCE REQUIREMENTS

Two options:

1. Intermediate or large-scale testing of the external wall cladding system.
2. Small scale tests on cladding, rigid air barrier, and insulation with large scale testing of wall assemblies with timber framing to demonstrate timber does not char

NEW 2020 REQUIREMENTS IN C/AS2, C/VM2 AND CLADDING GUIDANCE

Out of scope of the C/AS2 and C/VM2

Note: The 2019 cladding guidance is being updated with the November release of revised C/AS2 and C/VM2. This 2020 revision of the cladding guidance will be in line with the new C/AS2 and C/VM2 requirements and discuss additional pathways for compliance.

NATURE, SCALE AND IMPACT OF THE CHANGE

Nil. Further work is currently being undertaken to expand the scope of C/VM2 to include these structures in a future edition of the document.