Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**
Building and Energy

Guidance note

Fire engineering assessment of external cladding

May 2019

Purpose

The purpose of this document is to provide guidance on elements of the process to be carried out by fire engineers when addressing the issues presented by a building with an apparently significant hazard to occupants in the event of a fire involving external cladding panels.

Guidance notes

1. The fire safety engineer should be suitably qualified and experienced to carry out the specific fire safety assessment. There is not currently a requirement for fire engineers to be registered in WA. The fire safety engineer should have appropriate levels of experience together with fire engineering qualifications such as an undergraduate degree in fire safety engineering, or a post-graduate qualification in fire safety engineering, or may have registration with a relevant association such as the National Engineering Register (NER), or be a registered fire engineer, for the purpose of Building Code compliance, in another state.
2. The fire safety engineer, whether as an individual or company entity, should demonstrate sufficient public liability and professional indemnity insurance cover to meet the likely costs of a subsequent failure in the expected outcomes of the fire safety assessment. This should be commensurate with the size, use and occupancy of the subject building.
3. The fire safety engineer should carry out an assessment of the combustible cladding of the subject building for compliance with the relevant Performance Requirements of the NCC, and where necessary, identify any remedial action needed to ensure the building meets the Performance Requirements. This should include, but not be limited to, consideration of the outcomes of all reasonably foreseeable fire scenarios involving, or resulting from, ignition of the cladding materials of the subject building.
4. The fire safety engineer must be able to declare that there is no conflict of interest as the term is defined in this document. The fire safety engineer should also provide a declaration outlining any involvement they, or their employer, have previously had in the design and construction of the subject building.

Terms used	
Combustible	Has the same meaning as defined in the National Construction Code
Conflict of interest	For the purpose of this guidance, a conflict of interest exists if the fire safety engineer, whether as an individual, partnership or company, had been engaged to provide consulting services, certification, or approval in relation to the façade of the subject building in the past
DTS Provision	Deemed-to-Satisfy Provision as defined in the National Construction Code
DTS Solution	Deemed-to-Satisfy Solution as defined in the National Construction Code
FEB	Fire engineering brief as described in Chapter 1.2 of the IFEG
FER	Fire engineering report as described in Chapter 1.11 of the IFEG
IFEG	International Fire Engineering Guidelines – Edition 2005, as published by the Australian Building Codes Board (ABCB)
NATA	National Association of Testing Authorities
NCC	Volume 1 of the National Construction Code 2016: Amendment 1 or 2019, as published by the ABCB
Subject building	Building with the potentially combustible cladding that the fire safety engineer will be assessing
Type A construction	As defined in the NCC
Type B construction	As defined in the NCC

5. The fire safety engineering process must follow the recommended method set out in the IFEG, this includes the need for an FEB and a subsequent FER.
6. The FEB shall include details of the type of analysis to be carried out, agreed fire scenarios, Acceptance Criteria and an outline of any proposed modification/ remediation options.
7. For the purpose of the FEB the relevant stakeholders should include, as a minimum, the following:
   a. client or client's representative;
   b. fire safety engineer;
   c. building owners' representative;
   d. building operations' management; and
   e. other stakeholders as appropriate. For an analysis considering combustible cladding, it may be appropriate for the buildings insurers to be included in the fire engineering process to ensure that due consideration is given to any insurance requirements that may arise as a result of specific characteristics of the cladding.
8. For the purposes of the FEB and the FER the fire safety engineer and the relevant stakeholders must assume that combustible cladding on a building of Type A or Type B construction, as defined in the NCC, does not comply with the DTS Provisions of the NCC.
9. For the purpose of the FEB and the FER the relevant Performance Requirements that are required to be met are:
   a. Performance Requirement CP2 of the NCC.
   b. Performance Requirement CP4 of the NCC.
   c. In relation to a building of Class 9a or 9c, as defined in the NCC, Performance Requirement CP3 of the NCC.
   d. Any other Performance Requirement determined to be relevant by the FEB.

   In meeting the necessary Performance Requirements, particular attention should be paid to the following considerations:
   a. fire spread via openings within different levels, or to different fire compartments, of the subject building;
   b. fire spread to, or above, exits that could consequently cause occupant evacuation to be compromised or prevented; and
   c. fire spread that could hamper, or exceed the capability of, Fire Brigade intervention.
10. Where the function of these Performance Requirements includes the provision of safeguards to prevent fire spread to sole-occupancy units (SOUs) and to other fire compartments, it would consequently be expected that the potential for any such fire spread would be prevented following the implementation of any recommendations or remediation works from the analysis, and for the assessment to clearly demonstrate this.
11. The DTS Provision in Clause 2.4 of Specification C1.1 of previous NCC versions is not relevant to the external cladding, and shall not be used as part of a comparative approach to analysis in either the FEB or FER.
12. Where the FER is in the form of a risk analysis that includes a strategy/strategies to reduce the hazard of the existing construction to an acceptable level, then this analysis should extend to evaluating the remaining hazards presented by the amended design proposed.
13. The analysis of the combustible cladding must be based on the expected fire properties and behaviour of the actual cladding system fitted to the subject building. This should include its method of installation and fixing, and should consider the presence of any voids, channels or cavities created behind the cladding panels, other combustibles such as insulation materials or sarking, and the impact of these with regard to undue fire spread.
14. Where the origin, characteristics and/or composition of cladding materials is unknown or in question, then appropriate onsite investigation and sampling, with subsequent laboratory testing, as necessary, should be carried out on examples of the specific materials used. Any collection of cladding samples for analysis may require the services of a facade engineer, and the consent of the building owners.
15. Any necessary laboratory analysis should be carried out at a NATA approved laboratory that is registered to carry out the specific analysis.
16. In order to verify the level of safety provided for the local community, Building and Energy will regularly review fire safety assessments produced for buildings previously identified as high risk.

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