



ACT
Government



FIRE PRECAUTIONS DURING CONSTRUCTION

FIRE SAFETY GUIDELINE

FSG-06

JUSTICE AND COMMUNITY SAFETY DIRECTORATE
ACT EMERGENCY SERVICES AGENCY
ACT FIRE & RESCUE

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FSG-06 FIRE PRECAUTIONS DURING CONSTRUCTION

GLOSSARY OF TERMS

| Acronym / Term | Definition |
|--|---|
| ACTF&R | Australian Capital Territory Fire & Rescue |
| ASE | Alarm Signalling Equipment |
| AS 2419 | Fire hydrant installations |
| AS 2444 | Fire extinguishers |
| AS/NZS 2293.1 | Emergency lighting and exit signs for buildings |
| AS/NZS 3012 | Electrical installation – construction and demolition sites |
| Baseline Data | Data either provided by or derived from the approved design and commissioning thereof, which, when and where provided, would serve as a basis for verification of results and routine testing. |
| Cause and Effect Matrix | A document which details all smoke detection and smoke control zone input criteria of the system and the resultant output operational requirements of all interfaced systems. The matrix should be presented in a grid format with the inputs on one axis and the corresponding outputs on the other axis. This document needs to clearly and concisely indicate the full automatic functionality of the smoke detection and smoke control system from ‘end to end’ |
| Competent Person | Fire service industry trained and accredited professional working for an accredited fire service company. |
| FBBA | Fire Brigade Booster Assembly |
| FIP | Fire Indicator Panel, also referred to as Fire Brigade Panel. The FIP forms part of the FDCIE. |
| FDCIE | Fire Detection Control and Indicating Equipment |
| Fire Appliance | Any device or piece of equipment or building feature forming part of the buildings fire safety system. Fire appliances include but are not limited to: hydrants, alarm systems, fire doors, emergency warning systems, extinguishers, passive fire protection, automatic sprinkler systems etc. |
| Fire Appliance Approval Certificate | A certificate issued by ACTF&R after the satisfactory completion of the final inspection. This is used to meet the requirements of Section 35 of the Building Regulation, 2008 (ACT). |
| NCC | National Construction Code |
| Performance Solution | A method of complying with the Performance Requirements of the NCC, other than by a Deemed-to-Satisfy Solution. |

Content

- 1. PURPOSE..... 4
- 2. INTENT 4
- 3. APPLICATION 4
- 4. POLICY POSITION 4
- 5. FIRE EXTINGUISHERS..... 4
- 6. HYDRANTS 5
- 7. INTERIM PROVISIONS HYDRANTS 5
 - DRY HYDRANTS 5
 - CONNECTION TO WATER AUTHORITY NETWORK..... 5
 - OTHER REQUIREMENTS..... 6
 - AUTOMATIC AIR RELEASE 6
 - HYDRANT COVERAGE..... 6
- 8. ACCESS TO THE SITE 7
- 9. SIGNAGE..... 7
 - ACTF&R SITE ACCESS POINT 7
 - FIRE BRIGADE BOOSTER ASSEMBLY 7
 - DRY HYDRANTS 8
 - HIGHEST ACTIVE HYDRANT 8
- 10. LIGHTING PROVISIONS 9
- 11. ACTF&R NOTIFICATION AND INSPECTION 9
- 12. FAILURE TO COMPLY WITH THIS GUIDELINE 9
- 13. FURTHER CLARIFICATION..... 9
 - RELATED LEGISLATION AND DOCUMENTS 10
 - AMENDMENT HISTORY 10

1. PURPOSE

This guideline has been developed by ACTF&R to provide consistent advice in the application of the Deemed to satisfy (DTS) and Performance Requirements of the National Construction Code with reference to 'Fire precautions during construction'.

2. INTENT

To reduce the impact to the community, environment and economy of a fire incident that occurs in a building under construction; and to promote the safety of firefighters when managing an incident in a building under construction.

3. APPLICATION

This fire safety guideline applies to all class 2 – 9 buildings under and during construction after the building has reached an effective height of 12 metres. See NCC clause E1D16 [E1.9] and Performance requirement E1P5 [EP1.5].

4. POLICY POSITION

ACTF&R accept the following pathways to meet the NCC requirements for fire protection during construction:

1. Deemed to satisfy (DTS) requirements of NCC clause E1D16 [E1.9]
2. In situations where the requirements of NCC clause E1D16 [E1.9] are not able to be achieved a Performance solution demonstrating compliance with Performance Requirement to E1P5 [EP1.5] may be developed by a fire safety engineer. This is to be submitted in the form of a Construction Zone Strategy / Interim Performance Solution Report.

A Construction Zone Strategy / Interim Performance solution report is required to be submitted to ACTF&R under section 19 of the Building Regulation, ACT (2008). The Construction zone strategy / Interim Performance Solution Report does not come into effect unless written support from ACTF&R has been provided.

All interim performance solutions to E1P5 must comply with the following requirements listed within this document. These need to be specified within the Construction Zone Strategy / Interim Performance solution report.

5. FIRE EXTINGUISHERS

- Located as per requirements clause E1D16 [E1.9]; and AS 2444
- Maintenance carried out in accordance with ACTF&R Fire Safety Guideline, FSG-05 Maintenance of fire protection systems and equipment.
- In the case where fire hose reels are not provided as part of a proposed performance solution for the finished building 1 additional 9l water extinguisher is to be in place of each fire hose reel within 4m of an exit.

6. HYDRANTS

- The FBBV or booster system must be designed to meet the flow requirements of the completed building as per AS 2419.1. A minimum of 2 booster inlet connections are required.
- The booster location is to be in accordance with AS 2419.1
- The Fire Brigade Appliance must be located on the street or a dedicated area of hardstand adjacent to the street. Do not have the appliance sited in the construction area. The hardstand may be positioned up to 20m from the FBBA provided there is an unobstructed direct line of sight to the FBBA.
- The required fire hydrant landing valves and fire hose reels must be operational in at least every storey that is covered by the roof or floor structure above, except the 2 uppermost storeys.
- All hydrants and boost points must be fitted with Storz hermaphrodite couplings to AS 2419.4

7. INTERIM PROVISIONS HYDRANTS

DRY HYDRANTS

In the situation where a suitable water supply cannot be connected to a building the hydrant system may remain dry until required to be boosted by an ACTF&R appliance ('dry' system). A hydrant system not connected to a suitable water supply is considered a dry hydrant even if the system is statically filled with water.

Any proposed Construction Zone Strategy/Interim Performance Solution proposing a dry hydrant system has an expiry date that is no greater than 8 weeks from when construction achieves 12m effective height. Additionally, the Construction Zone Strategy/Interim Performance Solution is deemed to have expired once the building reaches an effective height of 25m.

After these milestones have been reached, the building is required to meet the DTS requirements in E1D16 [E1.9] or a new interim Performance solution is required however a dry riser will not be accepted for buildings with an effective height of 25m.

CONNECTION TO WATER AUTHORITY NETWORK

Evidence of a connection date provided by the water authority within the 8-week timeframe of the Construction Zone Strategy / Interim Performance Solution Report is required to be submitted to ACTF&R as part of the Interim performance solution. This will be verified with ICON water.

Icon Water review and approve designs for proposed new or changed water connections/supplies to all developments in the ACT. There is no reason this approval requirement should hold up the construction stage of the development **if addressed at the appropriate time.**

Where fire water supply in accordance with E1D16 is required during the construction stage of the proposed development, the developer is advised to notify Icon Water of this requirements **during the design stage.**

It is possible that the construction stage, fire water (and potable) supply/connection arrangement will be different to the final permanent connection for the development. If this is the case, then the developer will be required to obtain 2 separate design approvals and have 2 separate connections carried out by Icon Water at the developer's expense.

In other cases, the final permanent water connection/sizing shall be appropriate for the construction stage supply and the developer can simply obtain approval and get the permanent connection installed/connected in advance of the main construction activities.

To avoid delays, Icon Water advise developers to engage with Icon Water on these matters as early as possible during the design stage of their development. Icon Water will not accelerate design approvals for temporary fire water connections where such requirement is identified by the developer only after construction has already commenced.

OTHER REQUIREMENTS

Appropriate pressure capable, tested & certified back flow prevention device(s) must be fitted to prevent failure of the hydrant system upon boosting.

Street/Feed hydrants within 20m of the hardstand location are to be Identified with blue cats' eye and 'FH' plaque. Additional Street/Feed hydrants should be identified and marked in case the primary street / feed hydrant is unserviceable. These hydrants must remain clear during all construction work. These hydrants are to be indicated on the block plan and signage as specified below in signage requirements.

All pipework of the dry fire hydrant system should have a minimum fall grade of not less than that specified in Table 3.4.1 of AS/NZS 3500.2 (Standards Australia, 2018) to allow full drainage of water from the system. A minimum DN25 drain valve should be installed at the lowest point in the system to drain the dry fire hydrant system following any testing or operational use.

AUTOMATIC AIR RELEASE

An automatic air release valve should be installed at the highest point of all vertical rising mains to ensure the rapid and controlled release of air from the dry fire hydrant system pipework during fire brigade filling operations, and to act as a vacuum break to facilitate drainage from the system after commissioning, maintenance testing or fire brigade operations. This will help ensure pressure fluctuations do not adversely affect firefighter safety and operations.

HYDRANT COVERAGE

ACTF&R may accept extended hydrant coverage from a single accessible stairwell as part of the temporary performance solution. The consultant is to provide actual meterage and hose lay mark-ups of hydrant coverage for review when submitting this proposed solution.

8. ACCESS TO THE SITE

- Access via lockbox fitted with an ACTF&R fire brigade key is acceptable (main entrance/site entrance/boost point).
- Pin codes, electronic key fobs or access cards are not acceptable until the ASE has been connected to a monitoring company and the site has an AFA number.
- Unrestricted access is required to stairwell/s containing hydrants.
- Good housekeeping and clear walkways are required to all areas.

9. SIGNAGE

ACTF&R SITE ACCESS POINT

Signage indicating 'ACTF&R ACCESS' is required at the ACTF&R site entry point. Signage is to be clearly visible from the street when approaching from both directions. Signage is to have text in CAPITAL LETTERS minimum **75mm** high in a **white colour over a red background**.

Block plans are required at the ACTF&R access point and booster point. Plans must be all weather, easily identified and indicate the:

1. hydrant locations, including street hydrants utilized as part of the Construction Zone Strategy/Interim Performance Solution,
2. site access locations,
3. Fire Brigade Booster Assembly location,
4. fire stair locations.
5. any other relevant information such as hazardous materials on site or location of electrical / gas shut off as relevant.

FIRE BRIGADE BOOSTER ASSEMBLY

Signage is required at the FBBA. This is to be consistent with clause 11.3 of AS 2419 and must be a minimum of 50mm text written in CAPITAL LETTERS in a colour that contrasts the background. Signage must be permanently fixed in a prominent location within the booster enclosure or adjacent to the FBBA.

Signage must be provided advising the Boost Pressure and Test Pressure of the system. These must be written in a minimum of 25mm text in CAPITAL LETTERS in a colour contrasting the background.

DRY HYDRANTS

If a dry hydrant system is utilised signage is required at the FBBA as shown below.



If a dry hydrant is utilised signage is required in each fire stair at each hydrant valve as shown below.



HIGHEST ACTIVE HYDRANT

Signage is to be provided at the highest active FH in the stairwells stating, "HIGHEST ACTIVE FIRE HYDRANT IN THIS STAIR. NO FIRE HYDRANTS AVAILABLE ABOVE THIS STOREY".



This signage moves up as the next highest FH becomes available.

10. LIGHTING PROVISIONS

- Lighting is required at the FBBA / Temporary FBBA as per AS 2419.1
- Site evacuation routes require emergency lighting where:
 - work is outside full daylight hours (emergency lighting may need to be installed as the year progresses and days shorten)
 - natural lighting does not maintain a sufficient lighting level. For example, basements, internal passageways or shading from near buildings.

Emergency lighting should be provided in accordance with AS/NZS 3012:2019 Electrical installation construction and demolition sites and AS/NZS 2293.1 Emergency lighting and exit signs for buildings.

11. ACTF&R NOTIFICATION AND INSPECTION

- ACTF&R is to be contacted as soon as practical of any changes to the Construction Zone Strategy/Interim Performance Solution Report that may have a direct impact on the ACTF&R Operational Requirements.
- ACTF&R are to be contacted within one (1) week prior to the commencement of the Construction Zone Strategy. A site inspection may be required.

12. FAILURE TO COMPLY WITH THIS GUIDELINE

If a building with an effective height greater than 12m does not have hydrants as specified in E1D16 or does not comply with Performance Requirement E1P5 the building is deemed non-compliant with the NCC. ACTF&R may issue a notice to improve or notice to close under the Emergencies Act if the system cannot be rectified in a suitable time-period. ACTF&R will contact WorkSafe ACT advising of the noncompliance.

13. FURTHER CLARIFICATION

For further information or clarification please consult the original legislation or contact the ACTF&R Community Safety Section (email ACTFRFireSafety@act.gov.au ph. 62078370.)

RELATED LEGISLATION AND DOCUMENTS

Related legislation and documents

Emergencies Act 2004 (ACT)

Emergency Regulation 2004 (ACT)

Building Act 2004 (ACT)

Building Regulation 2008 (ACT)

AS 3745-2010 Planning for emergencies in facilities

AS 2419 -2021 Fire Hydrant Installations

National Construction Code (NCC)

VERSION CONTROL

Version control

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As required

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ACTF&R Community Safety Section

AMENDMENT HISTORY

Version**Description of changes**

1.0

Created

1.1

Updated with details around the correct process for applying for a connection to the water authority network. Clarification of some points and editorial changes



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