

Fire Protection for Open Yard Storage

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Sponsor: Dangerous Goods

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1. PURPOSE

The purpose of this guideline is to provide consistent recommendations and advice in regards to the fire protection for **open yards**.

2. SCOPE

This guideline addresses the minimum mandatory requirements of legislation, as well as specifying Fire Rescue Victoria's (FRV) recommended considerations regarding the fire protection systems required for open yard storage areas; including shipping container storage and dangerous goods storage areas.

3. DEFINITIONS

AS2419 defines Open Yard as ***a designated area in industrial or commercial premises, which may be used for combustible storage or processing of any kind and having an area greater than 500 m².***

The NFPA defines Yard Storage as ***the outdoor areas where commodities are stored.***

4. OPEN YARD STORAGE HYDRANT COVERAGE

Fire hydrants shall be provided and located so that every part of all storage, production equipment and plant in the protected area is within reach of a 10m hose stream issuing from a nozzle at the end of a 60m length of hose connected to a fire hydrant outlet.

Where any part of the fire hydrant pipework is situated above ground and within 150m of any structure in the protected area, fire hydrants shall be placed not more than 60m apart along the pipe work.

The number of fire hydrant outlets required to discharge simultaneously for protected open yards shall be determined in accordance with Table 3.3 at a flow rate and pressure in accordance with Table 2.2 and Table 2.3 of Australian Standard 2419.1.

Suitable additional provisions shall be made where special problems for firefighting could arise due of the nature, quantity of materials stored, displayed or used in a yard.

5. RECOMMENDATIONS

OPEN YARD STORAGE

When assessing the location of fire hydrants for open yard storage, the following issues need to be considered, especially in the event of fire/incident:

- protection of above ground fire hydrants and/or associated pipe work from external damage
- the amount of radiant heat the fire hydrant may be exposed to
- fire hydrant locations should be external to bunded areas
- location of isolation valves
- hard stand areas for MFB appliances
- proximity of fire hydrants to stored products
- provision of hydrant block plan at booster assembly.

It is also necessary to consider the topography and drainage in relation to contaminated water run-off (refer to FRV Fire Safety Guideline *GL-12 – Control of Fire Water Run-Off*). Also refer to FRV Fire Safety Guidelines *GL-42 – Open Air Storage of New or Used Tyres* and *GL-43 – Outdoor Storage of Baled Waste Paper* for specific details on open tyre storage and outside baled waster paper storage. The location of monitors, especially if they are manually operated, will also need to be subject to the above considerations.

SHIPPING CONTAINER STORAGE YARDS

When dealing with the location of fire hydrants for shipping container storage the following should be considered:

- provision of adequate lighting
- accessible location
- clearance from trafficable areas
- proximity to storage area
- adequate emergency vehicle access to and around the site
- hydrant system block plan provided at booster assembly.

DANGEROUS GOODS STORAGE AREAS

In the case of Dangerous Goods Storage in Open Yards, reference should be made to the requirements of the relevant Australian Standards. In the case of mixed classes storage the fire protection needs to be commensurate with the class requiring the highest degree of protection.

6. REFERENCES

The following reference standards, along with various NFPA standards relating to outdoor and yard storage, may assist in determining the appropriate fire hydrant requirements for Yard Storage and in particular for different classes of Dangerous Goods storage yards:

AS2419.1-2005	<i>Fire hydrant installations – system design, installation and commissioning</i>
AS3833-2007	<i>The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers</i>
AS1940-2004	<i>The storage and handling of flammable and combustible liquids</i>
AS1596-2014	<i>The storage and handling of LP gas</i>
AS2714-2008	<i>The storage and handling of organic peroxides</i>
AS4326-2008	<i>The storage and handling of oxidizing agents</i>
AS3846-2005	<i>The handling and transport of dangerous goods in port areas</i>

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