TyreStewardship AUSTRALIA

BEST PRACTICE GUIDELINES FOR TYRE STORAGE AND FIRE AND EMERGENCY PREPAREDNESS

APPENDIX A
OVERVIEW OF TYRE STORAGE REGULATIONS IN AUSTRALIA

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AUSTRALIA (FEDERAL)

TRANSPORT

Nationally, tyres are listed as a 'controlled waste' in List 1 of Schedule A of the National Environmental Protection (Movement of Controlled Waste between States and Territories) Measure 2004 (Controlled Waste NEPM). The NEPM has established a national system to track the transport movements of controlled waste between States and Territories and developed nationally recognised licences for interstate transporters. While, the interstate transport of tyres is regulated via this legislation, there is no federal control over the storage of tyres.

STORAGE

While there are no federal requirements on storage of tyres, where tyres are stored internally, buildings must be constructed in compliance with Part E of Volume 1 of the National Construction Code (Building Code of Australia)[1], which lists requirements and specifications for firefighting equipment and smoke hazard management, and tyre storage facilities must comply specifically with Clause E1.10 and E2.3. Clause E1.10. Some states may specify a requirement (under state-specific guidelines) even if the stored volume of tyres is less than the threshold defined for combustible goods (e.g. *Victorian Fire Services Guideline – Indoor Storage of New or Used Tyres*, see below).

WORK HEALTH AND SAFETY (WHS)

In addition, Australian businesses have obligations under the harmonised Work Health and Safety (WHS) framework in Australia, which generally requires businesses to ensure that they provide a safe work place. However, there are no specific requirements under the WHS framework for tyre storage facilities.

1 Australian Building Codes Board (2015) *National Construction Code Volume One, Building Code of Australia, Class 2 to Class 9 Buildings*.

STATE/TERRITORY BASED REGULATIONS

ACT

Tyre storage regulations	In ACT, the Environment Protection Act 1997 defines the transportation of 2 tonnes or more of end-of-life tyres as a Class A activity and therefore requires the person undertaking the transport to hold an environmental authorisation, however the storage and processing of tyres is not a regulated or licenced activity.
Fire safety requirements	Storage and Disposal of Waste Tyres – Environmental Guidance Note http://www.mtaact.com.au/f.ashx/Government/Environmental/Standard-7-Storage-and-Disposal-of-Waste-Tyres-Aug-2011.pdf This brief guidance document has been prepared via a joint initiative of the CT Motor Trades Association and ACT Environment Protection Agency and refers operators to the South Australian guidelines for guidance on tyre storage.

NEW SOUTH WALES

Tyre storage regulations	*Protection of the Environment Operations (Waste) Regulation 2014* http://www.legislation.nsw.gov.au/sessionalview/sessional/sr/2014-666.pdf A licence is required under the Protection of the Environment Operations Act 1997 to store more than 5 tonnes of waste tyres (being casings, seconds, shredded tyres or tyre pieces) or 500 waste tyres at any time or a business involved processing more than 5,000 tonnes of waste tyres per year. Licences require compliance with NSW Fire Brigade Storage Guidelines.

Fire safety requirements

The Fire & Rescue NSW *Guideline for bulk storage of rubber tyres* is a guideline that may be imposed in part or in full as a condition by the authority having jurisdiction. This Guideline has minimum requirements for the storage of rubber tyres, including those in an open yard or within buildings and structure.

https://www.fire.nsw.gov.au/gallery/files/pdf/guidelines/rubber_tyres.pdf

Acceptable rubber tyre storage:

- Bundled tyres – tyres strapped together in bundles and stacked together in a system or on their sides
- Pallet system – a system containing a number of tyres which includes stringers for material handling equipment
- Horizontal system – a system (pallets, shelving, racks) where tyres are stacked upright along a horizontal length exceeding 1.5m
- Laced storage (outside only) – tyres which are stacked overlapping to create a woven or laced arrangement
- Portable system – small portable systems that can be readily moved by fork lift.

External tyre storage:

- The site should be level, clear of all rubbish and combustible materials, and enclosed by fences or walls constructed of non-combustible materials.
- A hydrant system complying with AS2419.1 should be provided when the total quantity of outdoor storage will exceed 50 tonnes.
- Individual tyre stacks should not exceed 3.7 m in height, 60 m2 in area and 12.5 tonnes in weight.
- A maximum of four small individual tyre stacks can be grouped into a stack pile. A minimum clear separation of 2.5m must be maintained between each stack.
- A minimum clear separation of 18m must be maintained between each stack pile of four small stacks.

Small tyre facilities (less than 50 tonnes)

- Tyres should be stacked at least 6m from all non-combustible boundaries and buildings, and 18m from combustible boundaries or buildings.
- Tyre stacks must be at least 6m from the site boundary facing the public road.

Large tyre facilities (50 tonnes or more):

- Tyre stacks should be at least 18m from any boundary or any building.
- Any external tyre storage facility should have at least two site access points each being not less than 4m wide.

Indoor tyre storage:

- Buildings with a floor area of 2,000m2 or more and containing more than 20 tonnes of tyres should have a sprinkler system complying with AS2118.1.
- Buildings with a floor area of 2,000m2 or more and containing more than 10 tonnes of tyres should have smoke and heat vents complying with specification E2.2c Volume 1 of the NCC.
- Individual tyre stacks within buildings should not exceed 3.7m in height and 30m2 in area.
- Stored tyres must remain at least 1m clear in all directions from the underside of the building's roof or ceiling, roof structural members, lights (including light fixtures), and sprinkler heads.
- A minimum clearance of 1m must be maintained along paths of travel to required exits and firefighting equipment (e.g. hose reels, extinguishers, hydrants). The paths of travel must be kept clear and unobstructed at all times.

Unsprinklered buildings:

- A minimum clearance of 3m should be provided between stacks.

NORTHERN TERRITORY

Tyre storage regulations	*Waste Management and Pollution Control Act 1998* http://www.austlii.edu.au/au/legis/nt/consol_act/wmapca398/ *Fire and Emergency Regulations 2000* http://www.austlii.edu.au/au/legis/nt/consol_reg/faer266/ In the Northern Territory the *Waste Management and Pollution Control Act 1998* is the governing legislation for the collection, transportation, storing and processing of tyres and requires a licence if these activities are undertaken on a commercial or fee basis. The NT EPA grants environment protection approvals and licences for activities listed in Schedule 2 of the Act. Tyre storage is also regulated under the Northern Territory's *Fire and Emergency Regulations 2000*. Section 7A of the regulations contains specific requirements for 'stacked tyres' requiring anyone storing any number of tyres (new or used) to adhere to listed stockpile heights, dimensions and separation distances. Government representatives consulted as part of this project were uncertain whether reprocessors are aware of or following the requirements under the regulations.
Fire safety requirements	Apart from the requirements under the *Fire and Emergency Regulations 2005*, there are no specific guidelines on tyre storage and fire/emergency management published for NT, however a tyre recycling facility's Environment Protection Licence (EPL) for a generally contains licence conditions on tyre storage requirements.

QUEENSLAND

Tyre storage regulations	In 2013, the Queensland environmental legislative framework underwent significant changes via the Greentape Reduction project (Department of Environment and Heritage Protection (EHP), 2013). The *Environmental Protection (Greentape Reduction) and Other Legislation Amendment Act 2012*, removed the threshold for tyre storage as an environmentally relevant activity (ERA) under ERA 56 – Regulated waste storage. This means that tyre storage in Queensland no longer requires an environmental authority in relation to that activity. ERA 56 previously mandated a licensing requirement for facilities receiving and storing 5 tonnes or more, or 500 or more EPUs. Since removal of ERA 56, only recycling, processing and transportation are under statutory regulation. However, organisations and individuals storing tyres must comply with Fire Services Requirements, which are enforced under their own legislation rather than environmental protection legislation, as summarised below: • The *Fire and Rescue Service Act*, requires occupants of premises to ensure the risk of a fire occurring at the premises is properly managed to mitigate the risk. This is regulated under the *Building Fire Safety Regulation 2008*. There is a requisition under the Act (*Fire and Rescue Service Act Requisition (No. 1) 2011*), this applies to external storage of more than 500 tyres. The requisition prescribes stockpile dimensions and configurations, firefighting equipment, machinery for moving tyres and a number of other requirements. • The *Public Health Act* and more specifically the *Public Health Regulation 2005*, Division 2 prescribes mosquitos as a public health risk and requires all persons to ensure that there is no breeding ground for mosquitos through the accumulation of water.

Fire safety requirements	Queensland Government Gazette No. 78 (1 April 2011) pages 539 – 544 *Fire and Rescue Service Act 1990* Fire and Rescue Service Act Requisition No. 1 2011 https://publications.qld.gov.au/storage/f/2013-02-21T230337/01.04.11Combined.pdf The requisition applies to any person who stores or stockpiles in excess of 500 tyres of any type and in any condition (new, second-hand, re-conditioned, scrap, shredded or crumbed) or their equivalent parts with a dimension exceeding 100 mm in the open. • Single stack tyre dimensions must not exceed the following: - Maximum width of base – 5m - Maximum length of base – 45m - Maximum height – 3m - Maximum distance between stacks – 10 m - Average side slope – 1:1. • The longest dimension of a stack must be at right angles to the direction of the prevailing winds • Multiple stacks may be separated by a protective wall with a fire rating of 4 hours provided that: - the protective wall protrudes 1.5 meters above the highest point and 1.5 meters beyond the widest point to each side - only two stacks abut on the longest axis and two stacks on the shortest axis (i.e. four individual stacks in any one group) - any individual stack must not exceed the dimensions specified above (except that tyres may be stacked against such wall with a side slope batter only on the exposed sides) - such groups of stacks do not exceed an aggregate width of 10 meters and an aggregate length of 90 meters - such groups of stacks are separated from any other group of stacks, individual stacks of tyres or any combustible or flammable material including grass and weeds by a distance of 10 meters or more. • Machinery capable of creating a break 10 metres wide between burning and unburnt tyres must be kept on site 24 hours a day. A competent operator for this equipment must be available 24 hours a day.

- A system to have the operator on site within 20 minutes must be in place 24 hours a day. This system must be approved by the Commissioner, Queensland Fire and Rescue Service.
- A stockpile of sand or soil and the resources to load and transport it to the tyre storage site, and to place it on the tyre stacks must be readily available. The volume of sand or soil must be sufficient to completely cover the largest stack to a depth of 1 metre over the entire exposed surface area of the stack.
- A water supply system capable of delivering high volumes of water with minimum delay is required. The source may be reticulated town water or a dam.
- The on-site water reticulation system is to have the following characteristics:
  - A minimum of three standpipes with fittings approved by the Commissioner, Queensland Fire and Rescue Service are to be located so that at least one is no closer than 50 metres and no further than 90 metres from any part of any stack and is up-wind or cross-wind no matter what the wind direction.
  - Each standpipe is to be able to deliver 1,800 litres/minute when any two are operating. This flow rate must be able to be continuously maintained for a minimum of 3 hours.
  - Three 30 metre lengths of 64-millimetre hose and fittings, one branch and one nozzle must be kept readily available at a specified Fire Point.
  - This equipment is to be maintained in accordance with AS1851 and to meet the specifications of the Commissioner, Queensland Fire and Rescue Service.
  - If water is to be drawn from a dam, a volume of 648,000 litres must always be available for pumping.
  - Provision should be made to contain firewater runoff.
- More than one access point to the storage area shall be available to allow for varying wind directions. A perimeter road shall be developed to aid security and access. All roads to, and lanes between stacks, shall be maintained in a condition suitable for Queensland Fire and Rescue Service vehicles.
- If water is to be drawn from a dam, a hard standing area of a design and location approved by the Commissioner, Queensland Fire and Rescue Service must be provided adjacent to the dam for the sole use of a Queensland Fire and Rescue Service pumping unit.
- A security system meeting the approval of the Commissioner, Queensland Fire and Rescue Service is to be provided.

A plan of action for a fire emergency must be developed. This plan must be approved by the Commissioner, Queensland Fire and Rescue Service.

SOUTH AUSTRALIA

Tyre storage regulations	*Environment Protection Act 1993* http://www.legislation.sa.gov.au/LZ/C/A/ENVIRONMENT%20PROTECTION%20ACT%201993/CURRENT/1993.76.UN.PDF In South Australia, the *Environment Protection Act 1993*, governs the licensing requirements regarding the transportation, storage and processing of waste tyres. Key storage requirements are summarised as follows: • The reception, storage, treatment and disposal of waste tyres (greater than 250 millimetres in size) is listed as a Prescribed Activity of Environmental Significance and therefore requires a licence, unless the amount in question is below 5 tonnes and being used solely for the purpose of recycling, reuse, or if it is conditionally approved by the Authority. • Used tyres should be stored in a manner that minimises risks to the environment, human health and therefore minimising the risk of fire. Businesses are considered to be compliant if they operate in accordance with the following guidelines: - *General Guidelines for the Outdoor Storage of Used Tyres* issued by the South Australian Fire Service Fire Safety Department Some general storage requirements are listed under the *EPA 183/10: Waste guidelines – Waste tyres, updated September 2010*, such as secure fencing and access for emergency vehicles, and there is a specific requirement that all tyre facilities comply with the guidelines issued by the South Australian Fire Service Fire Safety Department.

Fire safety requirements	General Guidelines for Rubber Tyre Storage issued by the South Australian Fire Authorities https://www.mfs.sa.gov.au/public/download.jsp?id=71013 Used tyres should be stored in a manner that minimises risks to the environment and human health, therefore minimising the risk of fire. Tyre storage in buildings must comply with the Part E of Volume 1 of the NCC. Outdoor tyre storage must be arranged as piles of tyres or contained in metal cages, in rows not exceeding the dimensions set out below: • Storage heights should be determined by the stability of the pile and must not exceed 3 metres high due to the potential for instability. • 'on-flat' or 'laced' tyre storage will be employed for all outdoor tyre piles • Tyre piles shall be arranged in 'thin' rows to assist firefighting operations and shall be no more than 6 metres wide. • Tyre pile rows shall be no more than 20 metres in length to limit the total volume of tyres contained in a pile to a maximum of 360m3. • Tyre piles shall be arranged to provide suitable aisle separation in order to reduce the risk of fire spread between piles, and allow safe travel of fire appliances through the site. These aisles must remain clear at all times, be free from combustible materials and tyre scraps, and shall have a minimum width of 20 metres. • Tyre piles shall be kept from allotment boundaries as follows: - Where the pile narrow ends face the boundary – 12 metres, and where the long sides face the boundary – 20 metres. - Where the allotment boundary adjoins a public road affording perimeter fire appliance access, the total applicable distance may include the far boundary of the roadway and should be not less than 3 metres. - Where the allotment boundary is of fire resisting construction to a minimum height of 3 metres, the boundary distance may be reduced to a minimum of 6 metres. - Separation distances of tyre piles from buildings on the same allotment shall be 12/20 metres (as applicable from above) where the building's exposed facade is not protected. - Where the building's exposed facade is protected with an automatic fire sprinkler system in accordance with AS2118.1, or a wall wetting sprinkler system in accordance with AS2118.2, the separation distance may be reduced to 10 metres.

- Notwithstanding the requirements of AS2419.1, where the total storage volume on site is less than or equal to 750m3 (up to two piles as defined above), the facility shall have a hydrant system capable of providing simultaneous hydrant flows of two outlets (10l/s each).
- Large storage facilities where the total tyre storage volume on site is greater than 750m3, the facility shall have a hydrant system capable of providing minimum simultaneous hydrant flows of three outlets (10l/s each).

- Indoor storage:
  - Storage of tyres indoors shall be within open framed fixed or portable racking systems, or palletised, and shall be arranged to prevent tyres from becoming dislodged and falling/rolling from the storage system.
  - Buildings of greater than 500m2 floor area used as tyre storage facilities should be provided with the following fixed fire suppression/smoke hazard management provisions in addition to any other fire and life safety measures required by Volume 1 of the NCC.
  - Tyre storage >10 tonnes or 1000 tyres (whichever is the lesser)
    - permanent natural ventilation or automatic smoke hazard management systems or automatic smoke and heat vents
  - Tyre storage >20 tonnes or 2000 tyres (whichever is the lesser)
    - automatic fire sprinkler protection and automatic smoke hazard management systems or automatic smoke and heat vents
- Bund walls, sealed kerbing and blind sumps/catchment pits should be provided to contain water run-off from the site during firefighting activities.
  - Non-sprinkler protected premises
    - The bunded capacity shall be designed to cater for a run off of not less than 30 litres a second (fire hydrant flows) for 90 minutes, which equates to 162,000 litres (162kl).
  - Sprinkler protected premises
    - The bunded capacity shall be designed to cater for a run off of not less than the combined volume of 20 litres a second (fire hydrant flows) for 90 minutes (108kl) AND the design sprinkler system flow rate for 20 minutes.

TASMANIA

Tyre storage regulations	*Environmental Management and Pollution Control (Waste Management) Regulations 2010* http://www.thelaw.tas.gov.au/tocview/index.w3p;cond=;doc_id=%2B104%2B2010%2BAT%40EN%2B20150818000000 In Tasmania waste tyres are classified as a controlled waste under section 3 of the *Environmental Management and Pollution Control Act 1994* and under regulation 5 of the *Environmental Management and Pollution Control (Waste Management) Regulations 2010*. This Regulation requires the registration of handlers of controlled waste and therefore this regulation applies to all parties involved with the production, transportation and receiving of tyres. The removal, storing, reusing, reprocessing of tyres is prohibited unless approval is obtained from the Director of the EPA. If the Director of the EPA considers that the quantity of a controlled waste produced or stored on premises causes, or is likely to cause, environmental harm, the Director may give the waste producer or occupier of the premises written notice to do either or both of the following: • submit information in respect of: - the class or type, quantity and concentration of the controlled waste produced or stored on the premises; and - the location on the premises of the controlled waste; and/or • ensure that the controlled waste is removed to a facility approved for receiving it. Landfills licensed by EPA Tasmania have licence conditions specifying that they must not openly store end-of-life tyres at any place in excess of 200 EPU, unless: • storage is in accordance with reuse options, • as otherwise approved, or A number of temporary tyre stockpiles have site-specific conditions within local planning instruments. Any facility using chemical (or similar means) to process large amounts of waste tyres would be assessed and regulated by EPA as a level 2 Activity. The EPA licence for any such facility would include conditions around tyre storage.

Fire safety requirements	*General Fire Regulations 2010* http://www.thelaw.tas.gov.au/tocview/content.w3p;doc_id=+136+2010+AT@EN+20120903000000;rec=0 No specific guidelines on tyre storage and fire/emergency management have been published for Tasmania. It is understood that the Tasmanian Government refers to the NSW guidelines where guidance is needed.

VICTORIA

Tyre storage regulations	*Environment Protection (Scheduled Premises and Exemptions) Regulations 2015* http://www.legislation.vic.gov.au/Domino/Web_Notes/LDMS/PubStatbook.nsf/93eb987ebadd283dca256e92000e4069/C729EEA6CD963AF7CA257E27001D2AA8/$FILE/15-025sra%20authorised.pdf *Waste Management Policy (Storage of Waste Tyres) 2014* http://www.gazette.vic.gov.au/gazette/Gazettes2014/GG2014S139.pdf Premises that store more than 40 tonnes or 5,000 waste tyres are required to obtain a works approval and/or licence from EPA Victoria. • Businesses already storing more than 40 tonnes or 5,000 EPU of waste tyres had until 29 October 2015 to apply to EPA Victoria for a licence to continue their waste tyre storage operations. • Businesses that do not currently store waste tyres but are proposing to store more than 40 tonnes or 5,000 EPU of them will need to apply to EPA Victoria for a works approval (to build the site), prior to applying for a licence (to operate). http://www.epa.vic.gov.au/business-and-industry/guidelines/waste-guidance/storage-of-waste-tyres-in-victoria

Fire safety requirements

The Country Fire Authority (CFA) and Metropolitan Fire Brigade (MFB) have published guidelines for the safe storage of tyres for both outdoor and indoor locations.

http://www.cfa.vic.gov.au/fm_files/attachments/Publications/Fire_Services_Guideline_Open_Air_Storage_of_New_or_Used_Tyres.pdf

http://www.cfa.vic.gov.au/fm_files/attachments/Publications/Fire_Services_Guideline_Indoor_Storage_of_New_or_Used_Tyres.pdf

Operators are required to undertake a fire risk assessment which will determine all fire hazards at the site, determine the likelihood that a fire will occur, and then determine the consequences of a fire incident in terms of fire safety, property protection and the environment.

The tyre storage area must be adequately bunded or contained so that, in the event of a fire, no contaminated water is allowed to escape beyond the property boundaries.

Operators should develop and document an emergency plan and tactical fire plan in addition to emergency procedures.

Operators are required to ensure equipment is maintained or easily accessible to contain and manage emergency incidents.

Operators of fork lift equipment should be trained in the use of Self Contained Breathing Apparatus (SCBA) and appropriately trained in the site emergency plan and emergency response procedures.

Storage pile sizes should be minimised to restrict the available fuel in the event of a fire:

- Maximum pile dimensions of 20m long x 6m wide x 3m high is recommended.
- A minimum separation distance of 20m between piles is recommended, but is not guaranteed to prevent fire spread.
- Storage pile heights should be determined by the stability of the pile and must not exceed 3m.
- Separation distance of storage piles to buildings will depend on the building construction. For buildings without appropriate fire resistant construction, this distance should not be less than 20m.
- Separation distance to boundaries facing public roads should be not less than 6m, and not less than 20m to the far boundary of the public road.
- Separation distance between the edges of storage piles to other boundaries should be no less than 20m.

	The premises fire service is required to comply with Australian Standard (AS2419.1) or be in accordance with the requirements of the CFA or MFB.

WESTERN AUSTRALIA

Tyre storage regulations	*Environmental Protection Regulations 1987* http://www.slp.wa.gov.au/pco/prod/filestore.nsf/Documents/MRDocument:22433P/$FILE/EnvPRegs1987_01-00-00.pdf?OpenElement *Environmental Protection (Controlled Waste) Regulations 2004* http://www.slp.wa.gov.au/pco/prod/FileStore.nsf/Documents/MRDocument:26787P/$FILE/Environmental%20Protection%20(Controlled%20Waste)%20Regulations%202004%20-%20[01-a0-01].pdf?OpenElement Both the *Environmental Protection Act 1986* and the *Waste Avoidance and Resource Recovery Act 2007* have provisions that can be relevant to the control of used tyre waste. Up to 500 tyres can be stored at a tyre fitting business (or at a place connected with one) or up to 100 tyres can be stored in any other place. Any premises storing more than 500 tyres per year are required to obtain a licence. The permitted quantity of used tyre storage is stipulated on a site's licence (under category 56 or 57 in Schedule 1 of the *Environmental Protection Regulations 1987*).
Fire safety requirements	In Western Australia, there are no prescribed Essential Fire Safety Measures provisions other than those outlined in Part 1 of Volume 1 of the NCC for new buildings. While WA does not have any specific guidance/fire standards, licences issued by DER contain specific tyre storage conditions such as stockpile heights and separation distances. It is understood this is done on a case by case basis.