# Waste Stream

## Name

Waste, scrap or end-of-life tyres.

## Waste description

Waste tyres are no longer suitable for use as a vehicle tyre due to wear, damage, or deviation from the manufacturer's original specifications. Depending on national legislation, a used or waste tyre may include a repairable tyre.

## Information on waste / non-waste classification

National provisions concerning the definition of waste may differ and, therefore, the same material may be regarded as waste in one country but as non-waste in another country. Determining whether a substance or object is or not a waste may not always be straightforward; however, it is ultimately the mandate of the national competent authority on waste to decide when an item is to be defined as waste or non-waste. Further work on clarifying this matter under the Basel Convention is in progress ([[1]](#endnote-2)).

Tyres generally are replaced because they have been worn and the tread depth is near or below the legal minimum tread depth. Part-worn tyres that can be reused as it is for its original purpose when a residual tread depth remains ([[2]](#endnote-3)), are not generally considered waste. For example, in Switzerland, part-worn tyres in a usable condition with a tread depth of at least 1.6 mm may be classified as second-hand goods (non-waste) provided they are packaged well enough to prevent damage during transit; conversely, tyres with a tread depth of less than 1.6 mm, tyres with irregular abrasion marks and other mechanical damage, or tyres fitted inside one another (in twos or threes), are classified as “controlled wastes”, for export purposes ([[3]](#endnote-4)). Part-worn tyres that are suitable for retreading are generally excluded from the definition of waste tyres (depending on national legislation) because they can still be used for their original intended purpose. In the European Union, waste tyres can reach end-of-waste status when they have undergone a recovery operation and fulfil a number of criteria, so-called end-of-waste criteria (according to the Directive 2008/98/EC of 19 November 2008 on waste). For example, in England and Wales, the end-of-waste criteria for the production and use of tyre-derived rubber materials is set out in a Quality Protocol developed by the Environment Agency and WRAP (Waste & Resources Action Programme) in consultation with the Department for Environment, Food & Rural Affairs, the Welsh Assembly Government, industry and other regulatory stakeholders. ([[4]](#endnote-5))

## Classification under the Basel Convention (Annexes I, II, III, VIII and/or IX)

Waste tyres are not considered to be hazardous waste and belong to category B3140­—waste pneumatic tyres, excluding those destined for Annex IVA operations­—in Annex IX.

In general, the main contaminants found on/in waste tyres are water and mud. In certain cases scrap tyres may be contaminated to a degree with hazardous materials such as oils and in such cases they should be treated as hazardous. This notwithstanding, tyres can harbour mosquitoes which may spread yellow fever and dengue fever, among other diseases.

## Basel Convention guidelines and other guidelines/instruments

General guidelines:

* SBC Revised Technical Guidelines for the Environmentally Sound Management of Used and Waste Pneumatic Tyres – Available at http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx

National guidelines:

* Government of Newfoundland and Labrador, Canada, Guidelines for Establishment and Operation of Facilities for the Outdoor Storage of Tires – Available at http://www.env.gov.nl.ca/env/env\_protection/waste/
* New Zealand (Ministry for the Environment), End-of-Life Tyre Management: Storage Options – Available at http://www.mfe.govt.nz/publications/waste/end-of-life-tyre-management-jul04/index.html
* Argentina (Secretariat of Environment and Sustainable Development), Resolution N° 523/2013 on Sustainable Tyre Management – Available at http://www.ambiente.gov.ar/archivos/web/Ppnud08/file/2013/Cuadernillo%20Neumaticos%20Ingles%20final%20mar14.pdf

Disposal guidelines:

* UNEP Guidelines on Best Available Techniques and Provisional Guidance on Best Environmental Practices Relevant to Article 5 and Annex C of the Stockholm Convention on Persistent Organic Pollutants: Waste Incinerators – Available at http://chm.pops.int/Implementation/BATBEP/BATBEPGuidelinesArticle5/tabid/187/Default.aspx
* European IPPC Bureau Reference Document on Best Available Techniques for the Waste Treatments Industries – Available at http://eippcb.jrc.ec.europa.eu/reference/
* British Standards Institution (BSI) Publicly Available Specification PAS 108:2007, Specification for production of tyre bales for use in construction – Available at http://www.wrap.org.uk/content/pas-108-specification-production-tyre-bales-use-construction
* British Standards Institution (BSI) Publicly Available Specification PAS 107:2012, Specification for the manufacture and storage of size reduced tyre materials – Available at http://www.tyrerecovery.org.uk/specification/pas-107/
* American Society for Testing and Materials (ASTM) D6270-08(2012), Standard Practice for Use of Scrap Tires in Civil Engineering Applications

# Waste Management

## Collection

Tyre users should dispose of waste tyres at authorised collection points, which may be tyre dealers or a designated collection point. Waste tyres may also be collected from the retailers by a wholesaler using reverse logistics.

Since collection is a logistical process, optimization has to be considered on either a cost or environmental basis. Various types of optimization can be put in place, depending on the economic and legal model used. Two key types are: (a) Collecting the maximum quantity of tyres in one run (perhaps including several stops); (b) Collecting in such a manner that manual handling is minimized.

## Storage

Rubber tyres present its own unique hazards, not only for the different storage arrangements but also for the by-products of burned tyres, which include pyrolytic oil (petroleum hydrocarbons, VOCs, SVOCs, heavy metals). Because of their structure, tyres possess inherent air spaces that provide a sufficient amount of air for combustion; though relatively hard to ignite, once started a tyre fire generates a tremendous amount of heat and smoke and is extremely difficult to extinguish. In addition, standing water in tyres is a breeding ground for mosquitoes, and tyre piles are an excellent rodent habitat, contributing another risk to public health.

Vector-borne diseases such as malaria, dengue, chikungunya and yellow fever are transmitted by some species of container-breeding mosquitoes (i.e. those that develop in a variety of water-holding containers, both natural and artificial).To, tyres should be stored

Tyres should not be stored on wetlands, flood plains, ravines, canyons or steeply graded surfaces. Storage piles should not be located beneath power lines to reduce the risk of fire from electrical power lines that could break and land on tyres below. Scrap tyre storage preferably should be on a level area; the preferred surface for the storage area is concrete or hard packed clay, not asphalt or grass ([[5]](#endnote-6)).Access to any waste tyre site should be controlled through the use of fences, gates, natural barriers or other means.

Storage pile sizes should be minimised to restrict the available fuel in the event of a fire (excessively large piles could lead to the inability of manual fire suppression measures to suppress or control the fire); dimensions of tyre storage piles should be restricted, depending on storage arrangement (e.g. on-side storage, on-tread storage, laced storage). Additionally, minimum separation distances between individual piles of tyres and between piles of other stored products, and minimum distances from property lines and buildings, should be established to reduce the probability of fire spread and to ensure that there will be sufficient clear space for access by emergency responders. Establishing and maintaining fire breaks should be taken into consideration to reduce the probability that a fire spreads to vegetation or that a fire involving combustible ground vegetation spreads to a tyre pile. Tyre pile sizes and separation distances are included in the International Fire Code ([[6]](#endnote-7))—a model code in use or adopted by reference by most states and local governments in the United States—, the National Fire Protection Association (NFPA) Fire Code ([[7]](#endnote-8)), and other fire safety codes/guidelines (e.g. Ontario Fire Code ([[8]](#endnote-9)); UAE Fire and Life Safety Code of Practice ([[9]](#endnote-10)); NSW Fire Brigade Guidelines for Bulk Storage of Rubber Tyres ([[10]](#endnote-11)); Victoria MFB guideline for open air storage of new or used tyres ([[11]](#endnote-12))). NFPA Standards 13 and 230 provide additional guidance applicable to the storage of tyres and the various methods of fire protection ([[12]](#endnote-13),[[13]](#endnote-14)).

The venting of the facility and the ability of fire suppression crews to enter safely to extinguish any fire should be considered. Automatic fire protection should also be considered or an approved water supply capable of supplying the required flow to protect exposures and perform fire suppression and overhaul operations should be provided for manual firefighting. Provisions for surface water drainage and measures to provide protection of pyrolytic oil runoff should be provided.

Open burning and smoking (except in designated areas) should be prohibited within the tyre storage area; the operation of cutting, welding or heating devices should also be prohibited ([[14]](#endnote-15),[[15]](#endnote-16)). Potential ignition sources should not be allowed within 6 m of piles of tyre chunks, chips or crumbs ([[16]](#endnote-17)).

Stored shredded tyres with metal content should be continually monitored for heat build-up due to oxidation of the metal which might generate enough heat to start fires ([[17]](#endnote-18)).

The incidence and impact of large tyre pile fires can be reduced through strict fire code enforcement and appropriate fire safety practices. Standards for the storage of rubber tyres should be rigidly enforced.

Storage facilities are generally required to be permitted or registered in order to store any waste tyre quantity above a stated minimum that can typically range from 50 to 10000 tyres. For example, with some exceptions, in New York, United States, a permit is required for storing 1000 or more waste tyres at a time, and disposal facilities may not store more than 1000 waste tyres for longer than 60 days; some facilities storing on-site less than 30 days’ supply of waste tyres, based on the design capacity of the facility, are required to obtain a registration rather than a permit ([[18]](#endnote-19)). In a different state, Mississippi, retailers, motor vehicle dismantlers or salvage dealers that store more than 500 waste tyres, or more than 100 waste tyres for more than 90 days, require written authorization ([[19]](#endnote-20)); in addition, commercial waste tyre collection facilities are not generally permitted to store more than 5000 whole tyres at any given time and all waste tyres must be removed from the site within 90 days of arrival ([[20]](#endnote-21)). The minimum threshold for permitting or registration should be carefully considered. A low minimum may force retailers to use inefficient collection methods (such as frequent hauling of small quantities of tyres) and it may also unnecessarily increase the burden on both the stores and regulators by requiring registration. The optimum quantity has been found to be 1500 to 2500 tyres, which allows a retailer to accumulate a truckload of tyres for optimum hauling efficiency plus a limited additional scheduling buffer ([[21]](#endnote-22)). With regard to individual piles of tyre chunks, chips or crumbs, the NFPA recommends these should not be located on site in excess of 90 days ([[22]](#endnote-23)).

Waste tyre storage facilities should maintain daily operating records including the numbers of tyres received and removed from the site; an annual report should be submitted to the relevant authority. Facilities should have communication capabilities to immediately summon fire, police, or other emergency service personnel in the event of an emergency.

## Transportation

In general, transporters are required to store and handle tyres so as not to create a nuisance, a hazard to public health or safety, or a fire hazard.

Controls are often necessary to reduce the possibility that transporters will use inappropriate disposal measures (to reduce costs). The transportation of waste tyres (above a certain number) should be registered with the appropriate regulatory authority. Carriers should also maintain records of the number of waste tyres transported and the location where the waste tyres were transported to.

In the United States, several states have licensing, certification, identification, or approval requirements for waste tyre transporters ([[23]](#endnote-24),[[24]](#endnote-25)). The degree of regulation varies from state to state. The range includes programmes that simply require hauler registration with a state agency to those programmes that require licensing and financial assurance (bonding), and manifesting of waste tyres from the generator through the hauler to the final destination. For example, in Pennsylvania, any person that transports whole waste tyres for business-related purposes (not including persons who haul their own waste tyres in the course of routine tyre replacement) needs to obtain state authorization and must maintain a record of waste tyres transported weekly (tyres disposed are verified through weigh receipts) ([[25]](#endnote-26)). On the other hand, in California, every person who transports 10 or more waste tyres is required to hold a valid hauler registration (renewed annually), to use state-issued decals, and to comply with the provisions of the waste tyre manifest programme; in addition a surety bond (bank guarantee) for the amount of USD 10000 must be submitted with the application for registration ([[26]](#endnote-27)).

# Disposal Operations (Annex IV, Sections A and B)

## Best available techniques (BAT) and best environmental practices (BEP)

Disposal facilities should meet all basic requirements to ensure an environmentally sound management (ESM) of wastes and commit to continual improvement in their operations. A facility should have the following, which should meet the approval of the competent authorities: (a) appropriate design and location; (b) an environmental and social impact assessment, where appropriate; (c) sufficient measures in place to safeguard occupational safety and health, including an appropriate and adequate training programme for its personnel; (d) sufficient measures in place to protect the environment; (e) an applicable environmental management system (EMS) in place, if feasible and appropriate; (f) an adequate and transparent monitoring, recording, reporting and evaluation programme; (g) an adequate emergency plan and response mechanism; (h) an adequate plan for closure and aftercare. ([[27]](#endnote-28))

Waste tyre management should be viewed in the context of the waste (management) hierarchy, which accords priority to waste prevention (for example, appropriate tyre maintenance) and reuse (for instance, direct reuse of partly worn tyres), followed by recovery, over final disposal. Retreading, provided that the casings are of good quality and meet national safety standards, may be considered a reuse measure within the waste management hierarchy ([[28]](#endnote-29)) ([[29]](#endnote-30)) ([[30]](#endnote-31)).

Rubber crumb can be used for the production of new tyres; athletic field surfaces; rubberised bitumen and asphalt; rubber/plastic products; moulded and extruded rubber products; surface coatings; playground surfaces. Tyres can be used as a fuel substitute through burning in high temperature, purpose-built furnaces in facilities such as cement kilns, power stations, smelters and pulp/paper mills; processes that use tyres as a fuel substitute must meet statutory air quality requirements for emissions.

Information on environmentally sound disposal methods is provided in the Revised Technical Guidelines for the Environmentally Sound Management of Used and Waste Pneumatic Tyres published by the Secretariat of the Basel Convention ([[31]](#endnote-32)). For a detailed analysis of what represents BAT for waste incineration reference should be made to the Reference Document on the Best Available Techniques for Waste Incineration published by the European Integrated Pollution Prevention and Control (IPPC) Bureau ([[32]](#endnote-33)). Information applicable to the use of waste tyres as alternative fuels in cement kilns may also be found in the Technical Guidelines on the Environmentally Sound Co-Processing of Hazardous Wastes in Cement Kilns adopted under the Basel Convention ([[33]](#endnote-34)).

# Sustainable Materials Management (SMM)

## Extended Producer Responsibility (EPR)

* Alberta, Canada: The Tire Recycling Program is administered by the Alberta Recycling Management Authority, also known as “Alberta Recycling”, a not-for-profit association. An environmental fee is charged at the point of sale of new designated tyres ranging from CAD$4 to CAD$200 (depending on the item), which provides operational funding for the programme. In part, the fee funds the collection, transportation and recycling of tyres. A portion of the fee also goes to fund research and development of new recycled products and processes. Consumers can return any of the designated tyres to points of collection across the province, including municipal collection sites and recyclers. ([[34]](#endnote-35)) The “Environment Canada Extended Producer Responsibility and Product Stewardship Inventory of Programs” provides information on other existing extended producer responsibility and product stewardship programmes in Canada ([[35]](#endnote-36)).
* France: Aliapur is an end-of-life tyre management company established by France’s main tyre manufacturers for the implementation of Decree No.2002-1563 of 24 December 2002. Distributors of new tyres must take back waste tyres free of charge within the limit of their annual sales. To fund the programme an eco-fee is charged on the sale of new tyres, which varies according to the following categories: car and other tyres 3 to 5 kg (categories A1, A2 and A3), truck and other tyres 20 to 80 kg (B1 and B2), heavy equipment and other tyres 80 to >450 kg (C1, C2, D1 and D2), scooter and other tyres <3 kg (E), and aircraft tyres (F1, F2 and F3) Currently the eco-tax (excluding VAT) for passengers car tyres (category A), which represent two thirds of the total tyres collected, is EUR 1.35. ([[36]](#endnote-37))
* Spain: Signus Ecovalor is a non-profit organization formed by tyre manufacturers to satisfy the requirements of Royal Decree 1619/2005, which calls for producers to take responsibility for the management of end-of-life tyres. There are currently 317 tyre manufacturers and importers (producers) affiliated to SIGNUS that fund the operation of Signus based on the quantity and types of tyres they introduce into the marketplace. Producers pay a fee (“Ecovalor”) which varies depending on the eleven product categories, ranging from scooter tyres to agricultural and commercial tyres weighing over 450 kg. Currently the fee for passenger car tyres is EUR 1.58 (excluding VAT). ([[37]](#endnote-38))
* Finland: Finnish Tyre Recycling Ltd. is a company set up by tyre producers to take responsibility for waste tyres as mandated by Government Decision No.1246/1995. Tyre vendors must take back discarded tyres without charge and tyre consumers must submit a waste tyre to the vendor or to a place of reception arranged by the tyre producer. The recovery of waste tyres is financed by a recycling fee which is collected from purchasers of new tyres and varies according to the following twelve product categories: scooter and motorcycle tyres; passenger car tyres; van tyres; truck and bus tyres; industrial tyres; tractor tyres; agricultural tyres <20”; agricultural tyres ≥20”; work and forestry tyres <300 kg; work and forestry tyres ≥300 kg; retreaded truck tyres; and large machinery tyres >2000 kg. Currently the recycling fee (excluding VAT) for passenger car tyres is EUR 1.75. ([[38]](#endnote-39))

The European Tyre & Rubber Manufacturers’ Association (ETRMA) provides information on other end-of-life tyre management companies operating in the European Union (Recytyre, Ecopneus and RecyBEM, among others) ([[39]](#endnote-40)). The OECD Database on Instruments Used for Environmental Policy also provides valuable information ([[40]](#endnote-41)).

## Financing systems

In the United States, many states collect fees to fund scrap tyre management programmes or stockpile clean-up. Tyre fees are typically assessed on the sale of new tyres or on vehicle registrations. Fees generally range from USD$0.50 to USD$2 per passenger car tyre, and truck tyre fees range from USD$3 to USD$5. Some scrap tyre fees also help local communities establish market programmes, create licensing/enforcement systems, and host tyre collection programmes/amnesty events. States and municipalities may also use money generated by scrap tyre fees to offer grants or loans to scrap tyre processors and end users of tyre-derived materials.

Under the tax system each country (e.g. Denmark, Slovak Republic) is responsible for the recovery and recycling of the end of life tyres. It is financed by a tax levied on (tyre) production and subsequently passed on to the customer. This is an intermediate system whereby the producers pay a tax to the State, which is responsible overall for the organisation and remunerates the operators in the recovery chain.

## Incentives and disincentives

* European Union: Council Directive 99/31/EC of 26 April 1999 on the landfill of waste (“Landfill Directive”) introduces a ban on the disposal in landfills of shredded and whole waste tyres, excluding tyres used as engineering material. This ban does not apply to bicycle tyres and tyres with an outside diameter above 1.4 m. http://ec.europa.eu/environment/waste/landfill\_index.htm In addition, Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000, on end-of life vehicles (“ELV Directive”), prescribes the minimum technical requirements for treatment operations in order to promote recycling, including “removal of tyres…if these materials are not segregated in the shredding process in such a way that they can be effectively recycled as materials”. http://ec.europa.eu/environment/waste/elv\_index.htm
* California, United States: The California Code of Regulations (CCR), Title 14, establishes that waste tyres may not be landfilled in a solid waste disposal facility, unless they are permanently reduced in volume prior to disposal.

# Legislation

## Existing national, regional and international legislations

* California (Department of Resources Recycling and Recovery), United States: Waste Tire Storage and Disposal Standard (California Code of Regulations, Title 14, Article 5.5) http://www.calrecycle.ca.gov/laws/regulations/Title14/ch3a55.htm
* South Africa: Waste Tyre Regulations, 2009 (No. R. 149, 13 February 2009; Government Gazette No.31901, Vol.524); available at https://www.environment.gov.za/legislation/actsregulations. Notice of approval of an Integrated Industry Waste Tyre Management Plan of the Recycling and Economic Development Initiative of South Africa (REDISA) (No.988, 30 November 2012; Government Gazette No.35927); available at https://www.environment.gov.za/legislation/gazetted\_notices
* Ireland: Road Traffic (Retreaded Tyres) Regulations 2008 (S.I. 118 of 2008): These regulations govern the sale and supply of retreaded tyres in Ireland. These regulations also give effect to Council Decision 2006/443/EC, which says retreaded tyres must conform to UNECE Regulation 109 (retreaded tyres for commercial vehicles and their trailers) and UNECE Regulation 108 (retreaded tyres for private cars, light goods and light trailers).
* Finland (Ministry of the Environment): Government Decision No.1246 on the Recovery and Disposal of Discarded Tyres, October 12, 1995. Available at http://www.finlex.fi/en/laki/kaannokset/1995/en19951246.pdf (unofficial translation)

# Capacity and Feasibility

Information on waste management facilities that have been authorized to operate in specific territories may be obtained from trade associations, such as the European Tyre & Rubber Manufacturers’ Association (ETRMA) or the Rubber Manufactures Association (RMA) in the United States.

In developing countries that may have little or no waste management infrastructure, properly controlled co-processing of waste tyres in cement kilns can provide a practical, cost-effective and environmentally sound recovery option.

# Permitting

Waste facilities should be licensed/authorised/permitted. Waste exporters should be licensed and should present a detailed set of operating procedures describing its activities and those of its partners in other countries in order to facilitate governmental actions in the regional scenario.

# Enforcement

ESM of wastes requires a regulatory and enforcement infrastructure that ensures compliance with legal instruments and standards. Consideration should be given to a national policy that includes provisions to allow prompt, adequate and effective enforcement actions to be undertaken, including sanctions and penalties that will serve as a deterrent to non-compliance.

Measures should be in place to ensure adequate monitoring, inspection and enforcement of waste imports and exports subject to the requirements of the Basel Convention, by agents of the State and cooperation with enforcement agencies in other States (to prevent illegal traffic). Adequate penalties and sanctions for illegal traffic should discourage such movements in the future.

# Certification and Auditing Systems

It is recommended that licensed waste management facilities should be subject to annual inspections and/or audits by a recognised independent auditor. The objective of the inspection and/or auditing procedure would be to: check conformance of the facility with all basic requirements to ensure an ESM of wastes, with relevant environmental regulations, and, if applicable, current EMS systems. Verifying compliance with existing laws and regulations is embodied in the European Community Eco-Management and Audit Scheme (EMAS). Under ISO 14001, a facility is required to know whether or not it is in compliance with applicable laws and regulations; without that knowledge, the facility would be considered out of conformance with that ISO standard. The inspection and/or audit should also assess the performance of the facility with respect to environment, health and safety objectives ([[41]](#endnote-42)).

In Germany, waste facilities may be certified as “Entsorgungsfachbetrieb” (specialised waste management companies) according to the requirements set out in the Ordinance on Specialised Waste Management Companies (EfbV) ([[42]](#endnote-43)).

# Transboundary Movements

The increase in global trade, specifically the trade in waste tyres, has been identified as one of the possible causes of the spread of mosquitoes and mosquito-borne diseases mosquitoes. Mosquitoes such as *Aedes* mosquito species may be transported with merchandise either as eggs, larvae or adults; the aquatic stages are particularly able to survive transportation in waste tyres that contain residual water. Furthermore, the increasing speed of sea transportation favours survival rates. ([[43]](#endnote-44)) ([[44]](#endnote-45)) Only waste tyres that are stored in open areas before transportation are a risk, and not those protected from rain, retread or new (tyres in the last two categories are never stored in the open, as sunlight damages the tyre gum) ([[45]](#endnote-46)).

For the importation of waste tyres, national governments should explore options for the prevention of accidental introduction of invasive mosquitoes and investigate their cost-effectiveness. Such options include restrictions on the import (as in, for example, Chile ([[46]](#endnote-47)) and Argentina ([[47]](#endnote-48))) and the preventive use of biocides (such as fumigation of at-risk shipments). When waste tyres are imported, further preventive measures such as dry storage could curb the development of introduced egg or larval stages into adult mosquitoes. The risk of invasive mosquito species introduction is directly related to the geographical origin of the tyres: all tyres imported from countries where invasive mosquito species are indigenous or established represent a high risk ([[48]](#endnote-49)).

Governments should strengthen the early detection of introduced mosquitoes through systematic monitoring at points of entry and other high-risk sites within the country (such as major ports). In and near designated points of entry, Member States of the World Health Organization (WHO) have the obligation, under Articles 19-21 and Annex 1B of the International Health Regulations ([[49]](#endnote-50)), to have methods and procedures in place for surveillance and control of vectors and vector breeding reservoirs. Imported waste tyres require systematic inspection and appropriate control (for example, in confined surroundings), supported by national legislation.

Transboundary movements of wastes for management in another country cannot be assured to result in ESM by evaluating receiving facilities alone. Elements such as those for effective legal systems, government oversight and other infrastructure to protect the occupational health and safety of workers, communities and the environment, should also be considered. Transboundary movements of wastes should not be considered to be legal where there is a reason to believe the waste in question will not be managed according to ESM.

1. For further information, refer to the development of “Technical Guidelines on Transboundary Movements of E-waste and Used Electrical and Electronic Equipment, in Particular Regarding the Distinction Between Waste and Non-waste Under the Basel Convention” (http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/Ewaste/tabid/2377/Default.aspx), the development of Guidance to Provide Further Legal Clarity in Relation to “Used and End-of-life Goods” (http://www.basel.int/Implementation/LegalMatters/CountryLedInitiative/OutcomeofCOP10/Providingfurtherlegalclarity/tabid/2673/Default.aspx), and the development of a Glossary of Terms to provide additional legal clarity with respect to certain terms used in the Convention (http://www.basel.int/Implementation/LegalMatters/LegalClarity/tabid/3621/Default.aspx). [↑](#endnote-ref-2)
2. In general it is not possible to specify a minimum tread depth which would be valid for all types of tyres. Different minimum legal remaining tread depth are set in different countries. Within the European Union, refer to the Council Directive 89/459/EEC of 18 July 1989 on the approximation of the laws of the Member States relating to the tread depth of tyres of certain categories of motor vehicles and their trailers. [↑](#endnote-ref-3)
3. Swiss Confederation Federal Office for the Environment (FOEN). 2011. Exporting consumer goods - Second-hand articles or waste? Available at http://www.bafu.admin.ch/publikationen/publikation/01613/index.html?lang=en [↑](#endnote-ref-4)
4. WRAP (Waste & Resources Action Programme) and the Environment Agency. 2009. Tyre-derived rubber materials: End of waste criteria for the production and use of tyre-derived rubber materials. Quality Protocol. Available at http://www.wrap.org.uk/content/quality-protocols [↑](#endnote-ref-5)
5. National Fire Protection Association (NFPA). 2003. NFPA 230: Standard for the Fire Protection of Storage. Available at http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=230 [↑](#endnote-ref-6)
6. International Code Council (ICC). 2011. Tire Rebuilding and Tire Storage. In: 2012 International Fire Code®. Available at http://publicecodes.cyberregs.com/icod/ifc/ [↑](#endnote-ref-7)
7. National Fire Protection Association (NFPA). 2011. NFPA 1: Fire Code. Available at http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=1 [↑](#endnote-ref-8)
8. Ontario Ministry of Community Safety & Correctional Services. 2007. Fire Code (Ontario Regulation 2133/07). Available at http://www.mcscs.jus.gov.on.ca/english/FireMarshal/Legislation/FireCode/FireCode.html [↑](#endnote-ref-9)
9. United Arab Emirates (UAE) Ministry of Interior. 2011. UAE Fire and Life Safety Code of Practice. Available at http://www.dcd.gov.ae/civil-defence-regulation.php [↑](#endnote-ref-10)
10. New South Wales (NSW) Fire Brigade. 2009. Guidelines for Bulk Storage of Rubber Tyres. Policy No.2. Available at http://www.fire.nsw.gov.au/page.php?id=28 [↑](#endnote-ref-11)
11. Victoria Metropolitan Fire and Emergency Services Board (MFB). 2014. Open Air Storage of New or Used Tyres. Guideline No. GL-42. Available at http://www.mfb.vic.gov.au/Industry/Workplace/Fire-Safety-Guidelines.html [↑](#endnote-ref-12)
12. National Fire Protection Association (NFPA). 2013. NFPA 13: Standard for the Installation of Sprinkler Systems. Available at http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=13 [↑](#endnote-ref-13)
13. National Fire Protection Association (NFPA). 2003. NFPA 230: Standard for the Fire Protection of Storage. Available at http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=230 [↑](#endnote-ref-14)
14. National Fire Protection Association (NFPA). 2003. NFPA 230: Standard for the Fire Protection of Storage. Available at http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=230 [↑](#endnote-ref-15)
15. International Code Council (ICC). 2011. Tire Rebuilding and Tire Storage. In: 2012 International Fire Code®. Available at http://publicecodes.cyberregs.com/icod/ifc/ [↑](#endnote-ref-16)
16. National Fire Protection Association (NFPA). 2011. NFPA 1: Fire Code. Available at http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=1 [↑](#endnote-ref-17)
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