

Flammable Solids & Dusts

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STORAGE OF USED TYRES IN THE OPEN AIR

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Summary

Used tyres stored in the open air can create a significant fire hazard, and a pollution hazard from smoke and liquid effluent from the fire. Such fires may also be difficult to control. This DIN considers the range of precautions that may be appropriate to control the risk and comments on the status and content of a Home Office booklet published in 1995.

Risks Associated with Storage

Scrap tyres are produced in huge numbers annually, have very few further uses, and cannot be easily destroyed. As a result, vast numbers are stored around the UK, and elsewhere. A fire in a landfill site in Wales has burned for months, and proved almost impossible to extinguish. A fire in Canada involving 13 million tyres burned for many days. Both events have caused significant pollution problems. Environmental problems may arise from the large smoke plume, oily matter running from the fire, or contamination of ground water.

Enforcement Position

At sites where tyres continue to be added to or removed from the stack, the HSW Act will apply and in most circumstances HSE will be the enforcing authority. If FCG inspectors are asked to comment on fire precautions at such sites they will need to frame their advice in terms of process fire precautions that can be enforced under the HSW Act. General fire precautions at open air sites are enforceable by fire authorities under the Fire Precautions (Workplace) Regulations 1997, as amended in 1999.

Few people are likely to be employed at large tyre dumps, and at smaller sites forming part of other premises, no one is likely to work for more than a short period at a time around the heap of tyres. In general, simple precautions relating to control of ignition sources are likely to be sufficient to comply with section 2 of HSW. The offsite risk will depend largely on the location. A moderate sized tyre dump adjacent to garage premises in a town centre will create a far bigger risk to people than a huge tyre dump in a remote location.

Scrap tyres are controlled waste, and long term storage of scrap tyres will require a licence from the local authority under the Environmental Protection Act 1990. It is an offence under this act to store controlled waste in a manner likely to cause pollution of the environment or harm human health.

Tyres stored with the intention of using them as a fuel are subject to different legislation. Depending on the scale of the process it may be inspected by the local authority or HMIP, who may make conditions concerning storage.

Home Office Guide

The Home Office guide has the title 'Fire Safety for Tyre Sites. It runs to 60 pages and describes research concerning the control of such fires, various significant incidents, and makes many detailed recommendations about large scale tyre storage. The guide is largely aimed at those responsible for the very large scale long term storage of used tyres and Fire Officers from local brigades. It recommends that site occupiers carry out a risk assessment of the fire risks arising from the tyres. It gives little information about enforcement responsibilities, and these have in any case changed since the book was issued.

In urban areas, an outdoor fire involving scrap tyres may create an offsite risk. This might be the case where for instance, the tyres are stacked close to neighbouring buildings, where there are hazardous chemicals being stored, or possibly where a large smoke plume could reduce visibility and cause danger to traffic on a nearby elevated road. Liaison with the fire authority is advised before any enforcement activity. For details of HSE links to the Motor Vehicle Trade Repair Forum see **SIM/3/1999/06**.

Preventing Fires From Starting

It will usually be appropriate to seek good standards of control over foreseeable sources of fire. The thin rubber at the edge of a tyre beading can often be ignited with a single match, leading quickly to the whole tyre burning. Spread through a stack can then be very quick.

The commonest ignition sources are: smoking and smoking materials, hot work such as welding or brazing, and arson. Security should be adequate to prevent easy access to the site, and periodic checks made for indications of unauthorised entry to the site. Accumulations of paper, or other easily ignitable materials increase the risk of a fire starting and should be avoided, particularly if they can be reached through a boundary fence.

Site Layout

The Home Office guide recommends a separation distance of 15 meters between tyre stacks and boundaries or buildings and a maximum stack size of 300 m³. This equates to around 5500 car tyres. Where the total number of tyres is not enough to form a stack of this size no advice is given, but the risks are not necessarily negligible. A gap of 6-10 metres between individual stacks is suggested, with a larger spacing of 20m between groups of 16 stacks. These are quite onerous requirements when there are large numbers of tyres to be stored, and the intention seems mainly to give the fire brigade a reasonable chance to prevent fire spread throughout the site, causing environmental damage. The standards that may be enforced under the HSW Act will depend on the actual risk to people in buildings on the site or to people offsite, and caution is urged before offering support for enforcement action on the basis of the recommendations in this book concerning separation distances and site layout.

First Aid Fire Fighting

At sites where work activity is intermittent, permanently provided fire extinguishers will be of little use to control fires that start when there is no work activity. If work takes place for only a few days a month, extinguishers brought to the site by the employees may be more reliable as a means of first aid fire fighting. In any event, once a fire involves more than one or two tyres, a normal handheld extinguisher is likely to be ineffective. At remote sites it may be more relevant to provide information in the form of a notice at the entrance indicating where a member of the public can find the nearest phone that can be used to raise the alarm.