

Explosive Industry Group

Firework Safety Information

2002



<http://www.eig.org.uk>

This brief guide has been prepared by the Explosive Industry Group (EIG) of the CBI to assist users of fireworks and the enforcement authorities to have a better understanding of fireworks, good practice and firework law. By its very nature this guide cannot hope to cover all aspects of this important and extensive subject. However, the guide does give advice on where to obtain further information where appropriate. *Whilst every effort has been made to cover all current legislation and regulations and other relevant information when this Guide went to print, EIG nor its servants or agents can accept responsibility for, or liabilities incurred directly or indirectly as a result of, any errors or omissions in this Guide. Those involved in the firework sector are responsible for taking their own legal and other advice as they see fit. Readers are also strongly advised to check their own position with the relevant organisation(s) referred to in this Guide and whether there has been any change in legislation or regulation since the publication of this Guide.*

Firework law

Fireworks are explosives, but they are also, in the main, consumer products. Firework law can be broken down into two main areas - that enforced by the Health and Safety Executive (or their agents), and that enforced by the Department of Trade and Industry (and local authority trading standards departments.)

"HSE" legislation	"DTI" legislation
Manufacture	Amateur use
Storage (but see right)	Consumer protection (including the British Standard)
Packaging	Local Authority storage enforcement (often via Trading Standards Officers)
Transport	
Importation	
Professional use	

Explosive Acts

The basis of the majority of UK law relating to fireworks is the 1875 Explosive Act and subsidiary legislation. The Act, due to be largely replaced by the Manufacture & Storage of Explosives Regulations in 2004, encompasses all aspects of manufacture and storage, including details of construction and Quantity/Distance relationships for explosives buildings. Many sections of the Act have been repealed by regulations made under HSWA. If in doubt please check with EIG, or directly to the Explosives Inspectorate (all contact details are at the end of the booklet).

The Health and Safety at Work etc Act 1974

Modern health and safety legislation mostly stems from regulations made under the Health and Safety at Work etc Act 1974 (HSWA). These regulations are increasingly "Goal Setting" rather than "Prescriptive" in nature, and rely on Approved Codes of Practice (ACoPs) and Guidance to flesh out compliance issues.

Examples of regulations made under HSWA include:-

Title of Regulation and Acronym	Brief details
Classification and Labelling of Explosives Regulations 1983 (CLER)	Brings UK into line with United Nations Recommendations, and requires classification of all explosives for transport by HSE or MOD
Packaging of Explosives for Carriage Regulations 1991 (PEC)	Again, brings UK into line with UN recommendations.. Requires testing and certification of all packagings for transport of explosives
Carriage of Explosives Regulations 1999 (CER)	Defines vehicle types, placarding etc for carriage of explosives by road
Control of Explosives Regulations 1991 (COER)	Limited applicability to fireworks at present
Placing on the Market and Supervision of Transfer of Explosives Regulations (POMSTER)	Limited applicability to fireworks at present.

Consumer Protection Act and General Product Safety Regulations

The basis of consumer law in the UK is the Consumer Protection Act 1987 (CPA). In essence the Act says that items on sale to the general public must be safe for use by the general public, and must be safe in use without any form of training. The General Product Safety Regulations 1994 (GPSR), the result of a European Directive, covers similar scope. Due to limitations in the CPA, training cannot be a means of proving competence for potential purchasers of prohibited fireworks under the 1997 Firework (Safety) Regulations.

The British Standard for Fireworks

The British Standard BS 7114:1988, although not law, is "called up" in the Firework (Safety) Regulations 1997 - all fireworks supplied to the general public must comply with the requirements in the Standard as well as additional requirements in the 1997 Regulation. BS 7114 is a performance-based standard in which testing and compliance is based on batch testing of products. It is divided into three parts and categorises fireworks into 4 types. Each category has general performance and labelling criteria associated with that category, and in addition each firework type within a category has specific performance criteria which have to be met.

BS Category	Common Name	General Fuse Delay time	General Debris distance	General Viewing distance
Category 1	Indoor	Various	Various	Various
Category 2	Garden	3-13 secs	3m	5m
Category 3	Display	5-15 secs	20m	25m
Category 4	Display (Professional)	Not specified	Not Specified	Not Specified

The 1997 Firework (Safety) Regulations

These regulations prohibit the sale to the general public of the following fireworks

- ✓ Shells and shells in mortar
- ✓ Aerial maroons and aerial maroons in mortar
- ✓ Fireworks of erratic flight
- ✓ "Mini" rockets
- ✓ Bangers and batteries containing bangers
- ✓ Combinations including bangers (except for wheels)
- ✓ Any other firework which is not specified in Schedule 3 of the regulations

Furthermore it modifies and extends the British Standard in respect of the maximum dimensions or weights of certain fireworks (schedule 2 of the regulations).

The Regulations also require sparkler packets to be labelled with the text

"Warning: not to be given to children under 5 years of age"

"... no person shall supply any firework or any assembly to any person apparently under the age of eighteen years"

The Regulations also describe those persons permitted to purchase the prohibited items including:-

- (a) any person who is in business as a professional organiser or professional operator of firework displays;
- (b) any person, being a person whose trade or business (or part of whose trade or business) is the supply of fireworks or assemblies, for the purpose of supplying them in accordance with the provisions of these Regulations;
- (c) any local authority for the purposes of a firework display put on by that authority or for use by that authority at a national public celebration or a national commemorative event;
- (d) any person for use, in the course of a trade or business of his, for special effects purposes in the theatre, on film or on television;

Clarification of which fireworks are permitted to be sold has been provided by DTI and they have stated that "cakes", mines and Roman candles containing flash units (ie bangers) are not prohibited from sale.

The European Standard

The European Standard for Fireworks, now due for completion in 2003/4, approaches standards for fireworks in a different way. Instead of one standard divided into 3 parts, the European standard will have a separate standard for each permitted type.

Broadly the European Standard follows the British Standard model. There will be 4 categories, however the test and safety distances will be altered. There will be many more types of fireworks with a Standard - although we wait to see how this will be accommodated in UK law. The first drafts of the agreed standards are available from BSI, and others will be available from them as they are agreed.

Professional or Consumer displays?

Many displays, especially around November 5th, are fired by amateurs using fireworks conforming to the requirements of the 1997 Firework (Safety) Regulations - some of these shows can be quite extensive. The events are usually well established, community, school or club events where a committee has been formed to manage the event and to set-up and fire the display. These organisations usually (but not exclusively) purchase fireworks in the form of "self-fire" kits direct from major suppliers.

These displays are good fun, and are safe provided that:-

- ✓ thought has been given at the planning stage of the display - including consideration of what to do in adverse conditions etc
- ✓ the site is suitable for the type and scale of event planned
- ✓ only British Standard fireworks are used
- ✓ that the firework operators are completely familiar with their role in the display, the types of fireworks they will be firing, firing technique etc

Even in the absence of items prohibited in 1997, these displays can still provide spectacular entertainment for the audience.

Firework displays fired by professionals are usual where:-

- ✓ the site puts extra restrictions on the fireworks that can be used
- ✓ the display is to be fired in a very much reduced time (maybe as short as 30 seconds)
- ✓ the budget permits or the display is very large

Firework professionals are "at work" and thus subject to all the regulations under HSWA. This means that they will usually carry out some form of site inspection with the client, carry out a risk assessment and determine the types of fireworks suitable for the display, and rig and fire the display entirely - leaving the organiser of the event to concentrate on other matters.

Professional firers have access to a much wider range of types and sizes of fireworks than the amateur - and consequently rarely adhere to the distance guidelines of the British Standard. Often this will mean professional displays require MORE room than an amateur display - but there are circumstances where by careful choice of fireworks a display in a very restricted area can be safe and spectacular. Professional display companies will base the contents of their displays on an assessment of risk given the particular features of the site and the display. These matters, and others, will need to be discussed with the firework company prior to the event. We recommend that you employ one of the members of the EIG to arrange and fire your firework display.

Training

There is no mandatory requirement for training of professional or amateur firework firers in the UK, but there are a variety of courses available organised by individual companies or by training organisations.

The sale of Category 4 fireworks

The Firework (Safety) Regulations 1997 prohibited the sale of category 4 fireworks (and other specified types) except to certain groups of people (including the Armed Forces and Local Authorities) unless they are "Professional". A guide to the regulations is available from DTI.

EIG members regard the following as minimum requirements for purchasers of Category 4 fireworks:-

- ✓ Legal storage - Local Authority Division A is considered to be the minimum standard
- ✓ 365 day insurance covering product and public liability with cover of at least £1 million
- ✓ Company status (including sole traders) with official orders on company headed paper
- ✓ Competence to use the products required

Storage of fireworks

Storage of fireworks can be legally achieved in many ways in the UK.

14 Day Rule and "Private Use"

The Explosives Act 1875 permits the storage of a limited quantity of fireworks (5Kg) for an unlimited period of time, or the storage of an unlimited quantity of fireworks for up to 14 days prior to their use. It is generally taken that these provisions apply to "private use" that is use by the keeper or associates (eg for a school bonfire) but not for sale. It also applies where local operators are storing fireworks prior to them firing a professional display.

Registered premises - Mode A and B

The first level of legal storage are "registered premises".

	Maximum Quantity of Fireworks (Gross Weight)	Comments
Mode B	250Kg	In closed metal containers
Mode A	1000Kg	In a building "Separate" from a dwelling house

The vast majority of registered premises are held by shopkeepers for supply of fireworks to the general public in the period leading up to November 5th (indeed it is a requirement of the 1875 Act that all premises selling fireworks should be "Registered" with the Local Authority). The EIG feel that Registered Premises are not suitable for professional firework display companies owing to their limited storage capacity, and the fact that their status may neither be refused or revoked.

Local Authority Stores

At present there are a further range of Local Authority enforced stores - known as Divisional Stores (ranging from A to E) in which the quantity of permitted explosive is related to the distance of the store from, for instance, houses and roads. A Division E store may hold 7200Kg of fireworks.

HSE Factory and Magazine licences

The highest level of storage and control in the UK is at HSE licensed factories and magazines. Under this regime the processes and storage capacities of buildings are determined individually having regards to the type of materials being handled, and the distances to adjacent buildings etc. An HSE Factory Licence is the appropriate level for a company importing and manufacturing/modifying large quantities of fireworks for onward sale or for displays.

The 1997 Firework Fusing Exemption

This exemption certificate was introduced because it was evident that many small display operators wish to (and indeed do) fuse firework prior to use in their own displays. The exemption to the Explosives Acts permits limited operations under carefully controlled circumstances in association with a place of legal storage and where the fireworks are for "own use" and not for sale.

The exemption requires that:-

- ✓ Only one such exemption may be granted for a premises
- ✓ A maximum of two people are working
- ✓ The quantity of fireworks is kept low
- ✓ That work is carried out in a separate, dedicated building remote from the firework store
- ✓ That normal cleaning and good "housekeeping" rules are followed.

The exemption, however, does not remove the obligation on the user to have all fireworks made (including assemblies) authorised, and classified and packaged prior to transport according to normal explosive legislation.

** Industry action against Noisy Fireworks **

Following several meetings with the DTI Consumer Safety Minister in 2002, the firework industry have agreed the following course of action to reduce the impact of noisy fireworks

- ✓ The Industry would ban the further importation of airbombs, as defined below, with effect from 18th July 2002 – except where such items form no more than 20% in selection boxes.
- ✓ The Industry would seek the prohibition on the sale of the defined airbombs, with effect from 1 January 2003 – except where such items form no more than 20% in selection boxes.
- ✓ With effect from 1 January 2003, the Industry undertakes to limit the availability for sale, of noisy firework items (as defined below) to Sales Units (Single Items, Selection Packs and/or Primary Packs) to a retail value of greater than £10
- ✓ The Industry would adopt immediately the fireworks noise limits, as described in the forthcoming Draft CEN Fireworks Standard
- ✓ The Industry undertook to mount a campaign with Retailers on the fireworks noise issue; highlighting their responsibilities vis a vis sales time periods and sales to the under aged.
- ✓ The Industry to encourage fireworks Importers and Retailers to write to you, in order to demonstrate their commitment to help overcome the present Public concerns.

Definitions

- ✓ **Airbomb** – as per the description contained in Statutory Instrument 2294/94.
- ✓ **Noisy Items** – defined as one that produces a noise level in excess of 113dB(Almax). This value has been selected, as it is the level of noise produced by the ejection charge in some Roman Candles; and because the dB scale is logarithmic, this level is significantly less than the 120 dB(Almax) laid down in the Draft CEN Standard.

Websites and further information

Current information about fireworks and safety related issues is available from the following websites.

Explosive Industry Group	http://www.eig.org.uk
UK Firework safety site	http://www.fireworksafety.co.uk
DTI homepage	http://www.dti.gov.uk/cacp/ca/
HSE homepage	http://hse.gov.uk/hsehome/

The EIG website offers a subscription based service to non-EIG members to access all of the information on the site including summaries of and links to full text of regulations.

HSE Guides

EIG were involved in the preparation of two award winning HSE guides on firework displays available from HMSO:-

- "Giving your own firework display" HSG123
- "Working together on firework displays" HSG124