



Summary of the guidance at a glance:

For members of the public - damaged fireworks only:

Drowning in water for a specific period of time 24 hours or more will render the firework non-explosive, and there is no gas generation or self-heating during or after the drowning, even after the firework has dried out, subsequent disposal of the soaked firework with domestic rubbish may be an appropriate action for the general public to take.

For Retailers:

“Fireworks may only be transported by road if they have first been classified ². This classification may be compromised where a firework has been damaged. Generally fireworks can only be transported in packaging specifically approved for the particular fireworks. Exemption to this general rule would be transport by private individuals where the fireworks in question are packaged for retail sale and are intended for their personal or domestic use, or for transportation from a retail/storage licenced premise back to the supplier for destruction”

It has been agreed between FELG and the HSE that damaged fireworks returned to a retailer, or wholesaler (cash & carry), can be placed in a suitable UN carton, sealed and clearly labelled as DAMAGED FIREWORKS for disposal. This will apply only where they have a sale or return policy.

It should however be noted that the safest way of dealing with a firework, that is complete and undamaged, is to function it in accordance with the instructions provided with the firework.

The guidance does not endeavour to present a definitive solution nor represent the 'only way' of dealing with these items. However it is hoped that it will provide assistance on such matters.

Thanks are expressed on behalf of CFOA to the writers of the guidance and for allowing its publication.

Firework Enforcement Liaison Group – The Safe Disposal of Damaged Fireworks

1. Introduction

- 1.1 This Guidance was commissioned by the Fireworks Enforcement Liaison Group (FELG) 1, an advisory body working under the auspices of the Health & Safety Executive's Mines, Quarries & Explosives Policy Section.
- 1.2 The guidance has been produced by FELG in consultation with the British Fireworks Association, and advice of representatives of the Health & Safety Executive's Explosives Inspectorate, and the Local Authority Co-ordinators of Regulatory Services.

2. Foreword

- 2.1 Despite care and due diligence being taken, damage to fireworks can arise during transportation, storage or use.
- 2.2 Guidance has previously been given by Local Authorities, fire and rescue services, the HSE and the firework sector to retailers and the public on an *ad hoc* and case by case basis, but not in a co-ordinated way.
- 2.3 The term 'damaged fireworks' in the context of this guidance means any Category F1, F2 or F3 pyrotechnical article:
 - with a manufacturing fault or mechanical damage to its casing that is causing the explosive composition to leak; or
 - that has failed to function or has partially functioned; or
 - is in a damp condition.
- 2.4 This Guidance, therefore, is not applicable to the disposal of fireworks that are not damaged as different disposal techniques are applicable to such items.

3. The Law

- 3.1 Regulation 28 Explosives Regulation 2014 (ER14):
 - 3.1.1 Any person who discards or disposes of explosives or explosive-contaminated items must ensure, so far as reasonably practicable, that they are discarded, or disposed of safely.
 - 3.1.2 Any person who decontaminates explosive-contaminated items must ensure, so far as reasonably practicable, that they are decontaminated safely.
- 3.2 Order of Secretary of State 11 (3) made under the provisions of the Explosives Act 1875 requires persons not to deposit explosives in receptacles or places appropriated for refuse and states that explosives shall not be handed or forwarded to persons or vehicles employed or appropriated for the removal or conveyance of refuse.
- 3.3 It is important to recognise that these provisions apply to all persons, not just those at work on licensed explosives sites.

- 3.4 Directive 2007/1231/EC of the European Parliament and of the Council of 23 May 2007, on the placing of the market of pyrotechnic articles, requires anyone introducing a firework on to the European market to provide suitable instructions for the disposal of the firework. This Directive was transposed into UK legislation on 4 January 2010 and this legislation applied from 4 July 2010 for those fireworks intended for consumer use.
- 3.5 Fireworks may only be transported by road if they have first been classified². This classification may be compromised where a firework has been damaged. Generally fireworks can only be transported in packaging specifically approved for the particular fireworks. Exemption to this general rule would be transport by private individuals where the fireworks in question are packaged for retail sale and are intended for their personal or domestic use, or for transportation from a retail/storage licenced premise back to the supplier for destruction. It has been agreed between FELG and the HSE that damaged fireworks returned to a retailer, or wholesaler (cash & carry), can be placed in a suitable UN carton, sealed and clearly labelled as DAMAGED FIREWORKS for disposal. This will apply only where they have a sale or return policy.
- 3.6 A firework that is leaking powder presents a clear risk to safety from fire, explosion and possible injury, timely and appropriate action needs to be taken to control that risk. Accordingly it may not be reasonably practicable for fireworks to be returned to the supplier where it can be shown that disposal can be safely and easily carried out by the person in possession of fireworks.

4. Scope

- 4.1 This guidance is intended purely for manufacturers and importers of consumer fireworks, to enable them to provide assistance to those without specialist knowledge of the disposal of explosives (e.g. retailers, wholesalers, or members of the public). This will ensure that the risks arising from fireworks that are damaged and leaking powder are appropriately managed with due regard to the law and the environment.
- 4.2 Any person who discards or disposes of explosives or explosive contaminated items must ensure, so far as reasonably practicable, that they are discarded or disposed of safely Regulation 28 – (1)
- 4.3 In addition this guidance is intended to deal only with pyrotechnic articles (i.e. those that are to be supplied to members of the public) that have become damaged and which are leaking powder (explosives), or have partially functioned or are in a damp condition. The safest way of dealing with a firework, that is complete and undamaged, is to function it in accordance with the instructions provided with the firework.

5. Destruction Tests

- 5.1 A series of tests have been carried out on a variety of imported fireworks to determine whether drowning in water is an appropriate method to render them permanently non-explosive. The results of this testing suggest that in some instances this may be the case. However it is stressed that this method is not suitable for all firework types.
- 5.2 Those first placing fireworks on the market should carry out structured testing to determine a suitable lawful method for persons without specialist knowledge to dispose of damaged or partially fired fireworks that may be in their possession.
- 5.3 These methods should address the whole of the product range offered to the public. It is stressed that where drowning is the appropriate method, the testing should include determining whether the firework has explosives properties both immediately after drowning and after it has subsequently dried out, and whether the method is free from any self-heating or gas generation from the firework during or after the soaking.
- 5.4 The tests carried out was to soak a number of fireworks and then immediately check for explosive activity by placing them over a tank of fuel and igniting the fuel, (sufficient fuel was used to ensure complete destruction of the fireworks) an additional test was carried out in the same way, but allowing the fireworks to thoroughly dry out after the soaking and prior to burning.
- 5.5 The results of the tests determined that many of the fireworks did not demonstrate explosive properties immediately after soaking for a 48 hours period or after the firework had subsequently dried out. In order to avoid possible self-heating the fireworks were totally immersed in a large volume of water and where necessary they were weighted down to ensure this. However it was discovered that certain fireworks, with plastic components, retained some explosive properties after drowning, and an alternative method of disposal should be sought for any such items which may retain explosive properties after soaking.

6. Guidance for Manufacturers/Importers

- 6.1 In the event that there is no suitable method of disposal for persons without specialised knowledge who have been supplied with fireworks (destruction by burning or disassembly is not suitable for such persons), then additional procedures need to be established as to how the fireworks in question can be transported to the suppliers nominated destruction facility. This may include use of suitable approved packaging.

7. Guidance for member of the public

- 7.1 It has been determined that drowning in water for a specific period of time may render the firework non-explosive, even after the firework has dried out and there is no gas generation or self-heating during or after the drowning, then subsequent disposal of the soaked firework with domestic rubbish may be an appropriate action for the general public to take. However as indicated in 5.5 above certain fireworks, with plastic components, retain some explosive properties even after drowning, and therefore an alternative method of disposal should be sought for any such items which may retain explosive properties after soaking.
- 7.2 Members of the public should be aware that “Any person who discards or disposes of explosives or explosive contaminated items must ensure, so far as reasonably practicable, that they are discarded or disposed of safely” Regulation 28 – (1)

8. Guidance for Retailers

- 8.1 Retailers and others at work should be advised that even if a pyrotechnic article has been treated to render it non-explosive, any residual chemicals may render it hazardous waste and appropriate disposal of the residue may be required. This may include the sending/transporting of the treated firework residue to an appropriate disposal site.

9. Guidance for Wholesalers

- 9.1 Wholesalers should seek advice on the safe disposal of the damaged fireworks(s) directly from the supplier, manufacturer or importer.

10. Guidance for Enforcement Agencies

- 10.1 Enforcement agencies should relate the advice detailed in paragraph 7.1 above if they are approached for advice from retailers or members of the public.

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British Fireworks Association,
Health & Safety Executive's Explosives Inspectorate,
Local Authority Co-ordinators of Regulatory Services

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