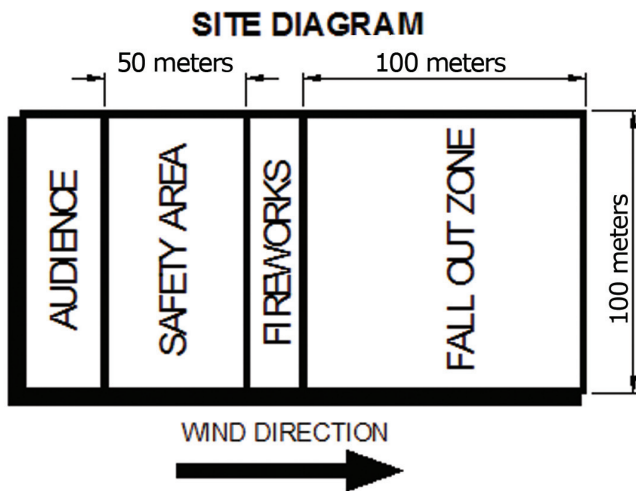




Guide to Organising Firework Displays

Firing site criteria

An area clear of buildings, shed vehicles, trees and overhead power cables where you have at least 25 meters (50 meters if you can) between spectators and fireworks. And at least 25 meters (100 meters if you can) at the rear for the Fall Out Zone and the site should be 100 meters wide.



Product safety

All fireworks supplied by Solar Fireworks conform to British Standard BS7114. This ensures all fireworks have adequate delay fuses prior to ignition and labeled with clear product descriptions including warnings and instructions. Please call us if you are unsure about anything.

Insurance requirements

Most household policies include at least £1 million public liability insurance, but do check to make sure. Our fireworks are covered by £1 million product liability insurance. If you are organizing a public display you will need additional liability insurance for your event.

Transportation of fireworks

You can carry up to 50kg of fireworks in your own car or van without any restrictions. Take care not to damage them during transit.

Preparation

Check your order as soon as you receive it so any mistakes can be rectified in good time. Become familiar with the different types of fireworks and their set up instructions and make a list of equipment that will be needed i.e. stakes wire ect.

Risk assessment

Displays attended by members of the public should be risk assessed. We strongly advise you perform a risk assessment. We have produced a risk assessment guide to help you comply with health and safety requirements for public events. Another copy can be found on our website.

Guide to Risk Assessment

Assessment completed by: _____

Date: _____

THE EVENT - Complete the details below in as much detail as possible - Make additions where appropriate

Date of the Display _____

Start Time _____

Event held at _____

Expected no. of Spectators _____

Event Organiser's Name _____

Firework Operator's Name _____

Senior Marshal's Name _____

THE RISKS - Consider the following typical hazards and groups at risk.

Hazard	At Risk	Action Required	Check
Injury & damage caused by falling debris or rocket sticks	Spectators, marshals, buildings, greenhouses, livestock	Ensure adequate fall out area	
Nuisance caused by noise	Neighbours, pets, Livestock	Ensure neighbour is informed of your display	
Accidental ignition of fireworks	Firing Team	Ensure firing team are wearing protective equipment	
Spectators encroaching on firing site	Spectators	Ensure adequate barriers and marshalling	
Distraction, nuisance or damage	Aircraft, road vehicles & sea craft	Inform police, air traffic control and coastguard (if applicable)	
Bonfire	Spectators	Ensure adequate barriers and marshalling	
Damage/danger to & from hazardous installations	Power lines, petrol stations	Site fireworks and fall-out area well clear	

Measurements	Minimum	Check
Safety distance from fireworks to spectators	25 metres	
Size of spectator area		
Distance between fireworks and bonfire	25 metres downwind	
Size of 'fall-out' area designated for debris	100 metres deep	
Distance between fireworks	2 metres	

Sketch your firing site here

Firing order

Solar Fireworks will always suggest a firing order for your selected fireworks this will ensure your show will be more impressive and have variety and continuity. However here are some useful tips should you wish to design the show yourself.

Shows can be started in many ways but usually start with a bang from a large rocket to signal the start, or low level fountains to enable a slow progression into the show. The main body of the show should be varied and alternate between barrages, candles, rockets, fountains and set pieces. Steadily increase the size of the firework as the show progresses. Shows normally end with a frantic finale, this can be achieved with a rapid firing large barrage.

Show duration

Big displays last from 20 to 30 minutes, and smaller displays last from 10 to 15 minutes.

Here are some approximate firework durations to evaluate the products required for your show:

Mines and rockets will use 10 to 20 second of show time.

Barrages and candles will use 30 to 40 seconds of show time.

Wheels and set pieces will use 60 seconds of show time.

Equipment required to setup fireworks

All fireworks need some kind of equipment to keep them upright. Some can be attached to wooden stakes in the ground, others can be buried (check the label). Always angle aerial fireworks slightly away from the audience. Attach wheels and other Set Pieces to posts securely using nails and/or wire. Rockets are normally supplied with a plastic

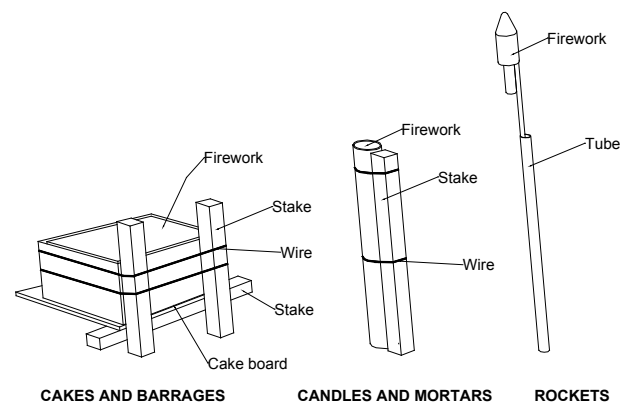
launch tube which pushed into the ground, for added safety a metal tube is recommended. Make sure rockets are free to rise in their tubes. Buckets will be required in the event of an emergency to put out fires or douse fireworks if they have failed to fire.

Recommended Materials:

Cake board	10mm to 12mm thick plywood
Stake	50mm x 50mm wood
Wire	1.5mm diameter annealed steel wire

Recommended Methods:

Angle fireworks away from the audience 5 to 15 degrees. Use a stake under the cake board to obtain angle for setting up cakes. Wire firework behind the stake. This will allow the firework to fall away from the audience in the event of firing failure. Never over tighten wire to cause firework tubes to deform. This could obstruct the stars/shells in the tubes during firing and can be dangerous. Make a minimum of two wire fixing positions, one at the top and one in the middle. This will allow the firework to remain upright, should one of the wire fixings fail.



**SOME FIREWORKS MAY STATE THEY REQUIRE BARRING IN THE GROUND.
IN ALL CASES THE FIREWORK MUST BE SETUP IN
ACCORDANCE WITH THE INSTRUCTIONS ON ITS LABEL**

Personal Protection Equipment

It is recommended that you use the following P.P.E. A safety helmet will help protect heads from falling debris. A metal mesh visor will help protect eyes from flying projectiles. Ear muffers or earplugs to protect hearing, if you use ear protection insure you can remain in communication with others. Fire retardant overalls and gloves will give protection from burns to hands and body. Pay particular attention not to tuck trousers into boots and make sure all pockets are zipped closed, or have closed flaps.

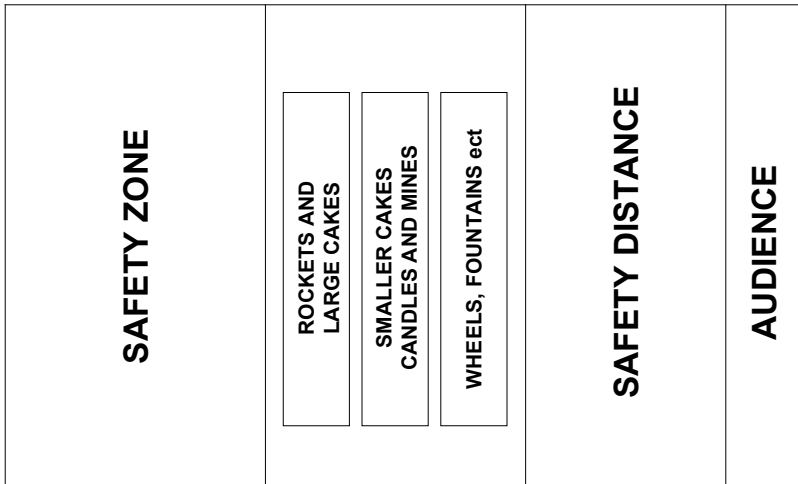
Firing order

Allow plenty of time to set up your fireworks. Plan your site in advance and set up your fireworks so you can move safely from one item to the next keeping a safe distance from active fireworks. Do not leave the fireworks unattended.

Set up fireworks with the least hazardous nearest the audience, most hazardous furthest away (remember, the higher it goes, the further the debris travels).

- Rockets and large cakes should be set up at the back.
- Cakes, candles and mines should be set up in the middle.
- Wheels, fountains and other smaller fireworks should be set up in the front.

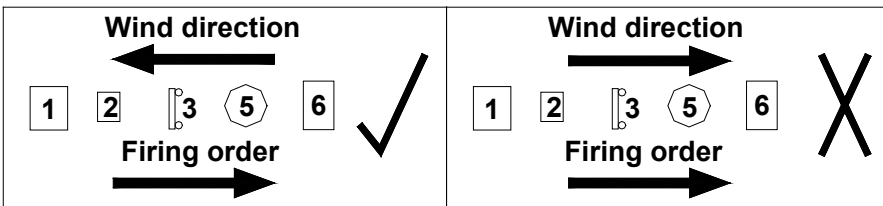
FIREWORK POSITIONING



Using your sketch from your risk assessment, mark out your firing site clearly, including your safety area and fall out zone, this should be to the rear of the fireworks and clear of people, vehicles, buildings, stores or any other hazard. The site should be organized so that the spectators are upwind.

Provide a fence to keep spectators at least 25 meters away from the nearest fireworks. N.B for displays using larger fireworks a minimum of 50 meters is recommended. These items are clearly indicated in our sales literature.

Take into account wind direction when positioning fireworks as per firing order. Each subsequent firework should be upwind from the previous one fired. This will reduce the chance of fuses being ignited by other fireworks.



The weather

Most of Solar Fireworks products can resist damp conditions for a short time. Do not allow the fireworks to be soaked by rain, even one drop of water can cause a fuse to malfunction. Protect the fireworks with bin liners and plastic bags in rainy condition. Bags must be removed prior to firing.

Fireworks must always be fired down wind from the audience. If the wind is blowing away from the audience, be cautious with rockets as they tend to travel into the wind. If the wind is blowing towards the audience rearrange the site so any debris and smoke falls away from the crowd. If you are unsure, consider firing a single rocket before the spectators arrive to test the debris.

Final checks

Check all fuses to ensure that they are in the safest accessible position and check that fuses are fully extended and all fixings are secure.

Firing the show

Nominate at least one person to be responsible for the audience and make sure no one enters the firing site during the show. Always use portfires, these are slow burning firework lighters about 200mm (8") long. They may be held in a gloved hand, preferably attached to a 1m (3ft) cane. Light the tip of the fuse keeping body well clear of the firework and face turned away. Never return to a firework that has failed to go off.

After the show

Always leave at least 15 minutes before entering the site to clear up. If you think a firework has part-fired or not fired, leave a further 30 minutes before dousing with water and finally leaving to soak in water overnight. If you have any live fireworks left, douse thoroughly in water and soak overnight before burying in the ground or call us for advice.

Legal firing times during the day and year

There is a firework curfew in place so you cannot use fireworks after 11pm or before 7pm except on specific dates in November and on New Years Eve. If possible let your fireworks off early in the evening. Be considerate to others.

Licensing

Anyone over the age of 18 can put on a firework display with any of the products from our sales literature without any formal training or a license.

Permission

No permission is required if your display is held on private property and you have permission to use it.

Notification

We always advise that you inform the police, fire brigade, your neighbours and nearby owners of pets and farm animals of the date, place and time of your display. If you are near an airport or the sea, you should also inform the Civil Aviation Authority and/or the Coastguard. You will find these numbers in the business section of your phone book

This document

All advice given here is guidance and believed to be correct at the time of publishing. For the most up to date legal and safety requirements, please contact the Health and Safety Executive.