



MODEL ROCKETS

These guidelines are to be followed when a person, business, group, or other entity within the City of Rockwall, requests the use of model rockets.

All model rockets criteria for the purposes of these guidelines and any other guidelines or requirements of the Rockwall Fire Marshal Division shall conform to the 2015 International Fire Code, as adopted and amended by the City of Rockwall, Texas State Fire Marshal's Office rules and regulations, and NFPA.

These guidelines do not replace, nor supersede any codes and/or ordinances adopted by the City of Rockwall, or determinations and positions of the Rockwall Fire Marshal Division.

General Requirements

- 1) No model rocket user shall launch any model rocket motor from any site without first securing authorization from the Rockwall Fire Marshal Division.
- 2) The Rockwall Fire Marshal Division requires notification each time that model rockets are to be launched.
- 3) Written permission from the property owner of the proposed launch site must accompany the permit application. It shall be the responsibility of the model rocket user to secure permission of the owner of private lands when such land is intended to be used to launch model rockets.
- 4) The permit holder is responsible for the safety of all participants and spectators.

The following requirements apply as found in NFPA 1122 :

a) Model Rocket Materials

- i) A model rocket's structural parts, including the body, nose cone, and fins, shall be made of paper, wood, or plastic and shall contain no metal parts.
- ii) A model rocket motor casing that is metallic, reloadable, and meets the specifications in this code shall be permitted.
- iii) A model rocket motor shall be assembled with all pyrotechnic ingredients preloaded into a cylindrical paper or similarly constructed nonmetallic tube that does not fragment into sharp, hard pieces.

b) Model Rocket Recovery.

- i) A model rocket shall have a means for returning it to the ground so that it can be flown again.
- ii) All recovery wadding used in a model rocket shall be flame-resistant.

c) Model Rocket Weight Limits.

- i) A model rocket shall weigh no more than 1500 g (53 oz) at lift-off, including rocket propellant.
- ii) A model rocket shall use no more than 4.4 oz of rocket propellant.

d) Model Rocket Power Limits.

- i) A model rocket's installed motor(s) shall produce a total impulse of no more than 320 N-sec (71.9 lb-sec).

e) Model Rocket Payloads.

- i) A model rocket shall not carry a payload that is designed to be flammable, explosive, or harmful to persons or property.

f) Model Rocket Flight Paths.

- i) A model rocket shall not be launched on a flight path aimed at a target.

g) Model Rocket Launch Site.



- i) A model rocket shall be launched outdoors in a cleared area, free of tall trees, power lines, buildings, and dry brush and grass.
- h) Model Rocket Launch Site Size.**
 - i) The launch site shall be at least as large as specified in Table 4.9.
 - ii) For a circular area, the minimum launch site dimension shall be the diameter; and for a rectangular area, it shall be the shortest side.

Table 4.9 Minimum Launch Site Dimensions

Installed Total Impulse (N-sec)	Equivalent Motor Type	Minimum Site Dimension*	
		m	ft
0-1.25	¼ A and ½ A	15	50
1.26-2.50	A	30	100
2.51-5.00	B	61	200
5.01-10.00	C	122	400
10.01-20.00	D	152	500
20.01-40.00	E	305	1000
40.01-80.00	F	305	1000
80.01-160.00	2F (or 1G)	305	1000
160.01-320.00	4F (or 2G)	457	1500

- iii) Type G motors with an installed total impulse of more than 80 N-sec (18 lb-sec), but not more than 160 N-sec (36 lb-sec), shall be permitted to be used by individuals 18 years of age and older.
- iv) As an alternative to the minimum launch site dimensions of Table 4.9, the size of the launch site shall be permitted to meet one of the following criteria:
 - (1) It shall be not less than one-half the maximum altitude as stated by the manufacturer for the model rocket and motor(s) combination being flown.
 - (2) It shall be of a size approved by the AHJ based on flight demonstration or data required to substantiate the anticipated altitude.
- i) Model Rocket Launchers.**
 - i) A model rocket shall be launched from a stable launch device that provides rigid guidance until it has reached a speed adequate to ensure a safe light path.
- j) Model Rocket Launcher Eye Safety.**
 - i) To prevent accidental eye injury, the launcher shall be placed so the end of the rod is above eye level, or the end shall be capped when approaching it.
 - ii) The launch rod shall be capped or disassembled when not in use and shall not be stored in an upright position.
- k) Model Rocket Launch Safety.**
 - i) The launcher shall have a blast deflector device to prevent the motor exhaust from hitting the ground directly.
 - ii) The area around a launch device shall be cleared of brown grass, dry weeds, or other easy to-burn materials.
- l) Model Rocket Ignition System.**



- i) The system used to launch a model rocket shall be remotely controlled and electronically operated.
- ii) The system shall have a launching switch that returns to the "off" position when released.
- iii) The system shall be equipped with a removable safety interlock in series with the launch switch.
- m) Spectator Distances.**
- n) All persons shall remain at least 15 feet from the model rocket during ignition of a model rocket motor with an installed total impulse of 30 N-sec or less.
- o) All persons shall remain at least 30 feet from the model rocket during ignition of a model rocket motor with an installed total impulse of more than 30 N-sec.
- p) Mass Launches.**
- q) When more than 10 rockets are being launched simultaneously, the minimum spectator distance shall be set to 1.5 times the highest altitude expected to be reached by any of the rockets, and one or more spotters shall be positioned to monitor the potential landing area to restrict unauthorized entry and to identify and report hazards.
- r) Spectator Notification.**
- i) All people in the launch area shall be made aware of the pending model rocket launch.
- ii) An audible 5-second countdown to launch shall take place.
- s) Model Rocket Misfires.**
- i) If a model rocket misfires, no person shall approach the launcher until 1 minute has elapsed and the safety interlock has been removed or the battery has been disconnected from the ignition system.
- t) Model Rocket Launch Conditions.**
- i) A model rocket shall not be launched in a wind of more than 20 mph.
- ii) A model rocket shall not be launched into a cloud.
- iii) A model rocket shall not be launched near an aircraft in flight.
- iv) A model rocket shall not be launched at an angle greater than 30 degrees from vertical.
- u) Model Rocket Retrieval Safety.**
- i) No attempt shall be made to retrieve a model rocket from a power line or other life-threatening area.

Submittal Requirements-Model Rockets

- 5) This section shall apply to any outdoor use of model rockets in accordance with NFPA 1122.
- 6) Each submittal shall have a
 - a) Completed Rockwall Fire Marshal Division Permit Application
 - b) Written permission from the property owner of the proposed launch site must accompany the permit application.
- 7) The plan shall include the following:
 - a) Name of the person, group, or organization sponsoring the launch
 - b) Date and time of day of the launch
 - c) Exact location of the launch
 - d) Diagram of the grounds or facilities where the launch is to be held that shows the minimum launch site dimensions as required by Item h listed above.