

## **CHAPTER 23-15.1 MODEL ROCKETS**

### **23-15.1-01. Purpose.**

It is hereby declared to be the purpose of the legislative assembly to establish standards for model rockets and model rocket launch sites for the protection of individuals involved in and exposed to the launching of model rockets.

### **23-15.1-02. Definitions.**

As used in this chapter, unless the context or subject matter otherwise requires:

1. "Model rocket engine" means a commercially manufactured, nonreusable rocket propulsion device constructed of a nonmetallic casing and solid propellant wherein all of the ingredients are self-contained so as not to require mixing or handling by the user. The propellant charge may not exceed two and two-tenths ounces [62.37 grams] per engine. Such engine may not be considered fireworks as defined by section 23-15-01.
2. "Model rockets" means nonprofessional rockets which are propelled by approved commercially manufactured solid propellant engines and not considered fireworks as defined by section 23-15-01.
3. "One newton" equals three and six-tenths ounces [102.06 grams] or .225 pound [102.06 grams].
4. "User" includes an individual, partnership, firm, company, association, corporation, or limited liability company.

### **23-15.1-03. Model rocket standards.**

Model rocket design and construction standards must comply with the following:

1. The model rocket engine must be a commercially manufactured propellant device and may not contain more than two and two-tenths ounces [62.37 grams] of propelling charge and must produce less than eighty newton-seconds of total impulse with a thrust duration of not less than one-half second.
2. When more than one rocket engine is used, the total propelling charge may not exceed four and five-tenths ounces [127.57 grams].
3. The model rocket engine used must display on the casing:
  - a. Total propulsive power category.
  - b. Time delay.
  - c. Average thrust in newtons.
4. The rocket must be constructed of paper, plastic, rubber, or wood, except that minor components such as screw eyes and motor mounts may be of light gauge metal material.
5. The rocket must include within its construction an effective means for returning the rocket safely to the ground without causing injury to persons or property.
6. The entire weight of the finished rocket with any payload may not exceed one and one-tenths pounds [498.95 grams].
7. The model rocket may not contain any type of explosive or pyrotechnic warhead.

### **23-15.1-04. Launch site standards.**

Sites used as model rocket launch sites must comply with the following:

1. No person other than the user and individuals assisting the user may be permitted within fifteen feet [4.57 meters] of the launching device when engines of an "A", "B", or "C" category are used or within thirty feet [9.14 meters] of the launching device when engines of "D", "E", or "F" category are used.
2. When required by the fire authority, lines or barriers must be provided to restrain spectators from encroaching upon the clearance requirements of this section.
3. No model rocket user may fire any model rocket engine from any site without first securing authorization, either verbal or written, to conduct this activity from the fire

official having the responsibility of the prevention and suppression of fire in the areas where the model rocket is to be used nor without securing authorization, either written or verbal, of the owner of the land intended to be used for the launch of the model rocket.

4. The launch site should consist of a firing area and a recovery area. The firing area should be considered that area surrounding the launching devices contained within a radius of ten feet [3.05 meters] outward from the location of the launching devices. The recovery area should include the firing area and must be determined to be the minimum area necessary to retrieve the launched rocket based on the estimated height achieved by the model rocket having a total weight fired with a specific type of engine. The following table may be used to determine the size of the recovery area necessary:

**MODEL ROCKET LAUNCH SITE STANDARDS**

Engine types all time delays	Minimum dimension in feet	Maximum total weight in ounces of rocket with engine and any payload	Longest time delay in seconds permitted for maximum total weight
1/4A-1/2A	50	3	2
A	100	4	3
B	200	6	2
C	400	6	3
D	500	13	3
E	1,000	17.66	4
F	1,000	17.66	4

If the recovery area is circular, the minimum dimension in feet referred to in the table relates to diameter of the area. If the recovery area is rectangular or square, the minimum dimension in feet referred to in the table refers to the length of the shortest side.

5. The launching site and recovery area should be located in areas that are not susceptible to fire, such as grain fields, forest lands, heavy brush, or other areas deemed dangerous by the fire authority. The site should be located at least two hundred feet [60.96 meters] from any buildings or structures unless approved by the property owner. The site may not contain any high voltage lines or be within five hundred feet [152.4 meters] of the nearest road or highway.
6. The launch rod may not be tilted more than thirty degrees from a vertical angle.
7. No launching site or recovery area may be located within five miles [8.05 kilometers] of any airport, unless written permission is first obtained from the appropriate airport authority or other agency responsible for operation of the airport.

**23-15.1-05. Storage and sale.**

1. No model rocket engines may be stored, sold, or offered for sale at retail unless such model rocket engine has been classified into one of the standardized engine codes listed in the chart in this section and unless such code is marked upon the model rocket engine.
2. No model rocket engine will be sold, given, or delivered to any person under ten years of age. Model rocket engines bearing the standardized engine coding 1/4A, 1/2A, A, B, C, or D may be purchased by any persons who are ten years of age or older. Model rocket engines bearing the standardized engine coding E or F may be purchased only by persons who are fourteen years of age or over.

**23-15.1-06. Accident reporting.**

In the event of an accident involving damage to either persons or property by a model rocket or by a model rocket engine, it is the responsibility of the investigating authority to immediately notify the state fire marshal or local fire control authorities that such accident has

occurred. If local fire control authorities are notified, they shall notify the fire marshal as soon as practicable.

**23-15.1-07. Penalty.**

Any person who violates any provision of this chapter is guilty of an infraction.