



North Royalton Fire Department

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THIS DOCUMENT COURTESY OF NORTH ROYALTON FIRE PREVENTION

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Ohio Fire Code

State of Ohio
Department of Commerce
Division of State Fire Marshal



2017

INFLATABLE AMUSEMENT DEVICES

Are you planning to rent or operate an inflatable amusement device (bounce house, slide, etc.)?

If so, you need to be aware of the inspection requirements that are set forth by the Ohio Department of Agriculture, Amusement Ride Safety & Fairs Division.

Bounce houses and other inflatable devices can be loads of fun for kids and adults alike. However, not following the manufacturer's operating instructions can lead to disastrous results.

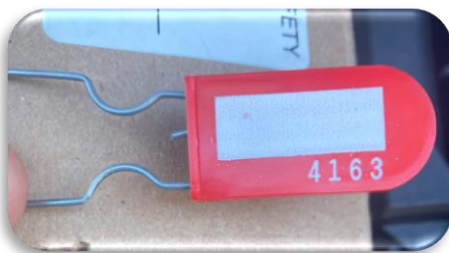
Toddler of Phoenix first responder dies after bounce house goes airborne (May 1, 2024)

<https://www.cnn.com/2024/05/01/us/arizona-bounce-house-toddler-death/index.html>



To help avoid mishaps, it required that all inflatable owners and operators adhere to the following:

Inspections and Licensing



All inflatable devices must be inspected every 12 months by the Ohio Department of Agriculture.

Once inspected, a permanent tag will be affixed to each device as shown (color varies each year).

There should be two tags placed by the Ohio Department of Agriculture;

1. a gray tag which is the device identifier,
2. a colored tag for this year's operating permit.

If these tags are not present, the ride owner/operator can show the inspection documentation including the inspection report AND the device license. These two documents are the official permits that show compliance with the inspection requirements. Licenses are good for 1 year from the time of inspection.

Tie Down Requirements

No more than one (1) tie down rope shall be attached to any one stake/anchor, outdoors locations only, unless the manufacturer allows otherwise.

For outdoor locations, ALL tie downs shall be utilized, NO EXCEPTIONS.

In lieu of tie down stakes being used outdoors, each tie down of a bounce type Inflatable Amusement Ride/Device shall be secured with a minimum of 75 pounds of weight, unless a greater weight is directed by the manufacturer, e.g. some of the larger inflatables, etc.

Larger slide type inflatables, greater than 36 feet in height, shall be secured with a minimum of approximately 450 pounds of weight per tie down unless a greater amount is required by the manufacturer.

All tie-down weights shall be of sufficient amount to prevent movement of the device during any unlikely wind event and to offset expected inside forces.

Anchoring systems for inflatable amusement devices shall be fixed stationary objects, installed, or weighted in accordance with the design.

Sand bags, water barrels, or metal weights may be utilized on tie downs **outdoors and indoors**, unless prohibited by the Inflatable Amusement Ride/Device's manufacturer.

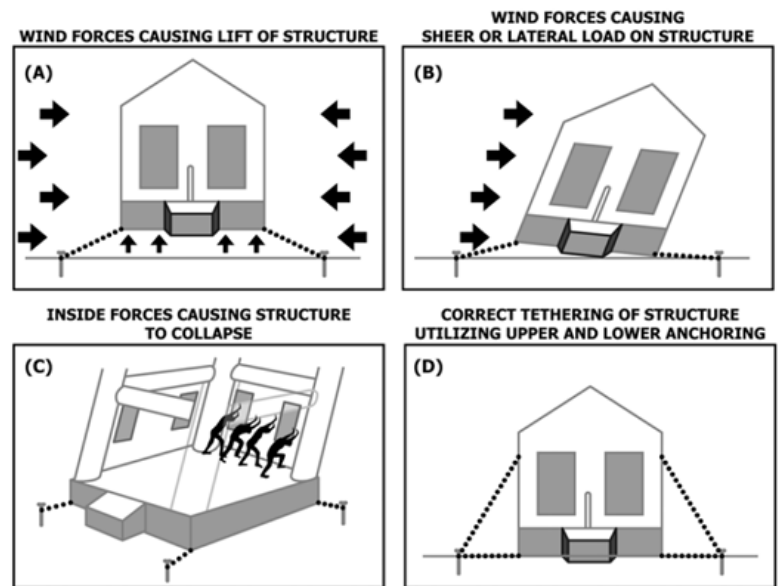


FIG. A2.1 Anchoring Design Force Assessment

The higher tether points on slides should always be used unless it states otherwise it in the manual

NOTE: Cinderblocks may not be utilized as tie downs at any location.

NOTE: Inflatable Amusement Ride/Devices shall not be secured to any motor vehicle, garbage bins, trailers, etc., NO EXCEPTIONS.

Additional Requirements

Maximum operating wind speed for the device shall be at least 5 mph lower than the wind speed for which anchoring was designed.

A maximum allowed operational wind speed of at least 25 mph with highest sustained gusts over a 3 second period.

Emergency exits. Fully enclosed inflatables shall have a secondary escape opening in the roof of the structure with opening on minimum 400 sq. in. and shall be clearly marked. If zips or zippers are used, shall be able to open on both sides

Blowers shall have a non-return airflow valve, shall be permanently marked to indicate horsepower, static pressure and volume flow produced by the blower.

Fabrics used for inflatable amusement devices shall comply with the flame propagation performance criteria of NFPA 701 (2019) Test Method 2.

Fire extinguishers are required within 100 ft of the inflatable.

Inflatable must have manufacturer's information plate and a game safety rules plate.

Company Logo	[Manufacturer's Name]
	[City, State, Country]
MODEL NAME/NUMBER: _____	
SERIAL NUMBER: _____	DATE OF MANUFACTURE: _____
NO. BLOWERS REQUIRED: _____	OF SIZE/HORSEPOWER _____
MIN. VOLUME FLOW: _____	MIN. STATIC PRESSURE: _____
MAX. PATRONS PER DEVICE: _____	MAX. WEIGHT PER PATRON: _____
NO. ATTENDANTS NEEDED TO SUPERVISE PATRON USE OF THIS DEVICE: _____	
MAX. WIND SPEED: _____	
Evacuate and deflate device if sustained wind speed reaches or exceeds this!	
<i>This inflatable device was built in conformance with ASTM International Standard F2374</i>	

FIG. X4.1 Sample Information Plate for an Inflatable Amusement Device

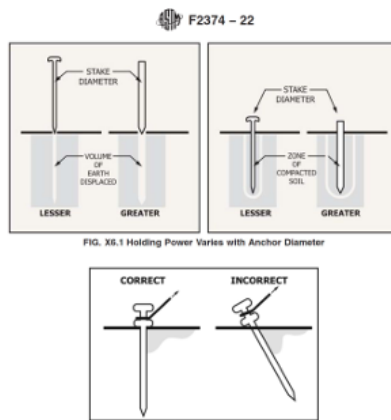


Anchoring System

TABLE X2.1 Pullout Capacity for Various Stake Configurations and Soil Types

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Table Correction Factor (C_f)	Soil Consistency ^E	Pullout Capacity for 1 in. Diameter Steel Stake ^F (P_b) in pounds				
		40 in.	36 in.	30 in.	24 in.	18 in.
BASELINE (P_b) ^A	Hard	2900	2500	1900	1350	800
	Very Stiff	1855	1600	1215	865	510
	Stiff	930	800	610	430	255
	Medium	465	400	305	215	125
$C_f = 0.65$	Medium	305	260	200	140	80
Pull Out Capacity (P_o) = Baseline Capacity (P_b) $\times$ Correction Factor (C_f)						
$P_o = P_b \times C_f$						

Anchoring System



X6.4 For optimum holding power, stakes should be inserted perpendicular to the plane of the ground at the point of insertion as demonstrated in Fig. X6.2.

Source: ASTM 2374-22 Standard Practice for Design, Manufacture, Operation, and Maintenance of Inflatable Amusement Devices