

# Homebuilt Soapbox Racing Association

## 2024 General Rules REV-C

Soapbox Derby racing is a distinctive form of gravity racing where propulsion is solely powered by gravity. It emphasizes design ingenuity and teamwork, excluding the use of motors and engines to maintain the pure essence of the competition. This unique racing experience offers an exhilarating competition driven solely by the laws of physics

### Ages:

Open to youth ages 5 to 16. And select race locations for Adults, 17 and up.

## Car Specifications:

### Construction:

Soapbox cars can be homemade of original design or from a kit. New and used cars of any age are welcome. Any use of materials is welcome but must be strong and secure. The car should be built to last the entire day of racing without continuous breakdowns or repairs.

### Wheels:

- Must have 4 wheels.
- Wheels can be different sizes, but adjacent/parallel wheels must be the same diameter (e.g., rear wheels 20" (508 mm) and front 12" (304.8 mm)).
- Minimum diameter of 6 inches (152.4 mm).
- Maximum diameter of 20 inches (508 mm).
- Maximum width of 6 inches (152.4 mm).

### Ground Clearance:

- Minimum Ground Clearance of 3.5" (88.9 mm) to allow smooth clearance over ramps and equipment during the race.
- Maximum Ground Clearance of 6" (152.4 mm) to facilitate the smooth operation of the starting gate, ensuring secure car holding and efficient car release from the starting line. This specified height not only contributes to the effectiveness of the starting gate but also maintains a lower

center of gravity, thereby minimizing the likelihood of rollovers and elevating the overall safety standards of the race.

### **Brake:**

- Functioning hand or foot controlled brake is required; no use of the drivers foot on the pavement or tire to stop the car.
- Brake pads must not have fastening hardware protruding on the friction/contacting surface that will cause any damage to the racing surface.

### **Steering:**

- Steering wheel, bars, or yokes design will be allowed.
- Use of steering limiters is strongly suggested.
- Rope ("Horse Reins") and aviation joysticks will not be allowed.
- Rear wheel steering will not be allowed.

### **Enclosures and Hatches:**

- Enclosures and hatches must be operable for the driver to easily open without assistance.
- No open-bottom cars will be allowed. This rule has been established with the primary concern of ensuring the safety of participants by emphasizing the need for a floorboard. This precaution is crucial to prevent any situation where a foot or leg could fall and be at risk of getting run over.

### **Turnbuckles and Fasteners:**

- To ensure safety, secure turnbuckles using safety wire, jam nuts, or an equivalent method to prevent unintended disassembly during the race. Fasteners should utilize the following: lock washers, aviation washers, Nord-Lock washers, lock nuts, jam nuts, cotter pins, or safety wires. These comprehensive measures are essential for maintaining the structural integrity of the components throughout the racing event.

### **Race Numbers:**

- Racers can choose their own race numbers.
- It is recommended that racing numbers have a minimal height of 5" (127 mm) to ensure visibility for judges and onlookers from a distance.
- In the event of a recurring number on race day, it will be given to the first car registered, and any duplicated numbers will have a number or letter added.
- It is recommended to display the numbers on both the left and right sides of the car to enhance visibility from various angles, ensuring efficient identification

# **Safety Equipment:**

## **Helmets:**

- Helmets are mandatory (e.g., Soapbox, Bicycle, Motocross, Snowmobile, or Hockey).
- Must have a functional chin strap.

## **Gloves, Suits, and Goggles:**

- Not required, but if used, they should not impair the driver's ability to turn, stop, or see.
- If a car does not have a protective body, it is not mandatory, but it is strongly suggested that a long-sleeve shirt and pants be worn in the event of a crash for added protection to the driver's skin.

## **Shoes:**

In accordance with safety standards, specific guidelines regarding footwear are as follows:

### **For Cars Without Enclosures:**

- Closed-toe shoes are mandatory for participants if the foot and leg area of the soapbox derby cars is open.

### **For Cars With Enclosed Driver Compartments:**

- While not mandatory, it is strongly suggested for participants to wear closed-toe shoes.
- If not using closed-toe shoes, participants must take safety into consideration, especially regarding pinch points and sharp objects within the enclosed driver compartment.

### **Footwear Removal:**

- If participants choose to remove their shoes, it is prohibited to leave them at the starting ramp.
- Participants should either secure shoes within the car if space allows or avoid bringing them to the top of the ramp during the event.
- To streamline the process, parents, guardian or team members are encouraged to bring removed shoes to the finish area for participants.

## **Inspection and Disqualification:**

After the completion of the registration process and parental/guardian waivers, the car inspection will take place. Following the inspection, any vehicles found to be unsafe will have the option to undergo necessary repairs or modifications. Failure to address safety concerns within the specified timeframe will result in disqualification from the race. In such cases, if a club car is available, drivers will be provided the opportunity to use it during the race. Adjustments are restricted to weight placement and

tire pressure for pneumatic tires. It is recommended to initially weigh in at the maximum allowed weight for your class, allowing for the removal of weight while ensuring compliance with the specified weight guidelines. If steering or brake adjustments are to be made, please inform an official beforehand. This is to ensure compliance and eliminate any assumptions or accusations from other competitors. Any modifications or adjustments are only permitted during the two-lane practice runs, as once the qualifying round starts, any further alterations will be considered a violation.

## **Competitor Guidance**

Competitors, especially those in the younger age groups, may benefit from the support and guidance of a caregiver, parent, guardian, older sibling, friend, or teammate. The involvement of a responsible individual is crucial for ensuring a smooth and enjoyable racing experience for everyone. Here are the recommended roles and responsibilities for caregivers or supporters:

### **Staging Assistance:**

Caregivers or supporters are encouraged to assist competitors during the staging process, ensuring that the soapbox car is positioned correctly and that all safety equipment is properly secured.

### **Car Removal at the Finish Line:**

After completing a race, caregivers or supporters should assist with removing the soapbox car and assist the driver in exiting the vehicle from the finish area to allow for the smooth progression of the event.

### **Returning to the Starting Line:**

Assist competitors in returning to the starting line for subsequent runs, providing any necessary support.

These guidelines aim to enhance the overall experience for competitors, promote safety, and maintain the efficient flow of the soapbox derby races. The presence of a supportive caregiver or companion is instrumental in creating a memorable and enjoyable racing environment for all participants.

## **Summary of Specifications:**

- Length Overall: Maximum 84" (2,133.6 mm).
- Height must not exceed 32" (812.8 mm).
- Width must not exceed 36" (914.4 mm).
- Ground Clearance: Minimum 3.5" (88.9 mm).
- Ground Clearance: Maximum 6" (152.4 mm).
- Axle Width (Front & Rear): Maximum 36" (914.4 mm).
- Protrusion of Axle Beyond Wheel Hub: Maximum 1" (25.4 mm).
- Wheelbase (Front Axle to Axle): Minimum 40" (1,016 mm).
- Weight Limit: Youth 5-16, The car and driver, must not exceed 250 lbs (113.4 kg).
- Weight Limit: Adult 17 and up, The car and driver, must not exceed 350 lbs (158.7 kg).