



## **World Extreme Rock Crawling Championship Series**

### **Rule Book 2008**

#### **Important notice**

Rock Crawling is an inherently dangerous sport. Each competitor assumes that risk when he or she participates in an event. The risk of serious injury or death cannot be eliminated and, in fact, will always be present at a high level. Competitors are urged to advise their spouses and next of kin, if any, of this fact. By competing, all competitors, both spotter and driver, agree to the following.

In consideration of being permitted to participate in any event sponsored, promoted, or directed by W.E.Rock, World Extreme Rock Crawling Championship Series, the competitor for himself/herself, his/her personal representatives, heirs, and next of kin, hereby releases the corporation, and their respective officers, directors, promoters, sponsors, employees, agents and volunteers ("releasees") of all liability to the competitor, whether caused by negligent act or omission of releasees or otherwise while the undersigned is for any purpose participating in such event. It is fully understood by each of the competitors that there is some inherent risk associated with this event, including damage to vehicles and injury or death to the individual.

In addition, the competitor agrees to indemnify and hold harmless the releasees from any loss, liability, damage, or cost they incur due to such participation by the competitor, whether caused by releasees' negligence or otherwise, and agrees to assume full responsibility and risk for bodily injury, death, or property damage from releasees' negligence or otherwise while the competitor is participating in this event.

**W.E.ROCK has taken several years to compile information using the input from our current Builders, outside resources, professional engineers, and W.E.ROCK Racers. These new rules are in line with the majority of race vehicles now competing in W.E.ROCK International events. It is not W.E.ROCK's intent to eliminate anyone from racing but just the opposite. It is our goal to continually uphold the highest standards of safety possible for our customers. Changes are always met with resistance; however, without them, progress will never happen. Please keep the big picture in mind--safety!**

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#### **Each competitor acknowledges and represents the following while competing:**

- 1** - That he or she has read the foregoing release and waiver of liability and indemnity agreement.
- 2** - That he or she does at all times, while riding in a vehicle participating in an event, wear his or her respective seat and shoulder belts and helmet.
- 3** - That the owner/driver certifies that he or she has inspected this vehicle and that the same certifies it to be in proper mechanical condition for participation in rockcrawling competition.

**4** - That the owner/driver has informed himself/herself about the event, either by prior participation or by investigation into the sport and especially W.E.Rock events.

**5** - That the driver or any other person(s) in a vehicle participating in any W.E.Rock event, may choose to bypass any obstacle and, therefore, assumes all risk and liability, as indicated above.

**Please Be Aware:**

Although safety is generally everyone's concern and certainly the highest priority of W.E.Rock, the final responsibility rests on the competitors. Competitors can, at any time, choose to bypass any obstacle or area where they feel uncomfortable or unsafe driving.

## **Vehicle Requirements and Limitations**

### **Unlimited Class**

**Unlimited Class Goal:**

W.E.Rock's Goal in the Unlimited Class is to create a venue where technology can be pushed with minimal limits beyond safety. Based solely on the idea of a true fabricators class, this venue will allow the technology of rock crawling to be pushed new heights. In this age of high technology, the more exotic a vehicle looks, the more the crowds will appreciate them. The appeal of this class will be the many unique designs allowed. The event formatting must be under constant review for this class, so expect that to change as fast as the technology seen on the courses. A true Unlimited class would be no fun without a few limits, so understand that if a technological advantage is found to be too great for the competition industry as a whole to keep up with, some restrictions or handicaps may be used to control domination, which can harm a sport in the long run. Otherwise, the courses and regulations will reflect these advancements and will demonstrate the amazing technical abilities of the most advanced class of rock crawlers ever.

#### **6.1: Axles**

W.E.ROCK's Goal in the Unlimited Class is to open up the restrictions and create a true unlimited class where builders and fabricators can push the technology.

**6.1.1:** All axle widths, Live Axles, Solid axles, Independent, Military style drop in axles, and farm equipment axles are acceptable.

**6.1.2:** Gear reduction may be prior to the axles or after the axles or a combination of both.

**6.1.3:** Manual wheelbase changes are allowed.

**6.1.4:** Differentials must have some form of 100% locking abilities.

**6.1.5:** Vent tubes must be attached to a fluid containment container.

#### **6.2: Body**

W.E.Rock considers the body to be the vehicles outer layer and includes the floor, sides, rear, hood, fender, grill, and firewall.

The following are body guidelines for competition:

**6.2.1:** All vehicles must retain a shield or firewall that separate the occupants from the engine.

**6.2.2:** Firewalls are required for fire safety and must be a minimum of forty-thousandths aluminum, 20-gauge metal, or 1/8" lexan. Plexiglas is not permitted.

**6.2.3:** Exposed transmission components must be covered with a safety shield to protect occupants from possible exposure to transmission fluids in the event of transmission case fractures or unforeseen fluid spills

#### **6.3: Hood**

**6.3.1:** Must cover the top of the engine completely. Hood scoops and breather holes are acceptable.

**6.3.2:** Fully open space cannot exist beyond twelve (12) inches in diameter without a baffle.

**6.3.3:** A Rear Engines Vehicle's hood is considered the material directly behind the occupant's head that separates occupants from the engine entirely.

## **6.4: Fenders**

Not required.

## **6.5: Tub/Cab**

**6.5.1:** General condition must be in good shape without excessive rust that would warrant concern for safety.

**6.5.2:** Firewalls are required for fire safety and must be a minimum of forty-thousandths aluminum, 20-gauge metal, or 1/8" lexan. Plexiglas is not permitted.

**6.5.3:** Firewalls must be ran from the left outer panel to the right outer panel and separate fully, the driver from the engine compartment.

**6.5.4:** Exposed transmission components must be covered with a safety shield to protect occupants from possible exposure to transmission fluids in the event of transmission case fractures or unforeseen fluid spills.

**6.5.5:** Body panels, though not required are highly recommended.

**6.5.6:** All vehicles must have a floorboard running from under the control pedals, back to the forward edge of the seat. The floorboard must be a minimum of forty-thousandths aluminum, 20-gauge metal, 20-gauge expanded metal, or 1/8" lexan. Plexiglas is not permitted.

## **6.6: Brakes**

W.E.Rock considers the brakes to be the source of control for slowing and stopping wheels.

The following are the brake guidelines for competition:

**6.6.1:** Mechanically operated brakes are approved.

**6.6.2:** Hydraulic assisted brakes are approved.

**6.6.3:** The brake pedal on the floor must operate all brakes.

**6.6.4:** Competitors may use secondary brakes for operating individual brakes on the vehicle.

**6.6.5:** A W.E.Rock official inspector must approve transmission or pinion brakes if they are the primary source of braking.

**6.6.6:** Emergency brake hydraulic locks or mechanical locks are approved for emergency brakes.

**6.6.7:** Emergency brake gears (mechanical type) must be in good shape and not worn to a point of possibly disengagement while under a load.

**6.6.8:** Brakes must be in good working condition with adequate pads. Brakes that are worn out or oil soaked will not pass.

**6.6.9:** Brake lines must be in good shape without leaks and ran in a safe route from cylinders to brakes.

**6.6.10:** Master and slave cylinders must be in good shape without leaks. Adequate braking resistance at the pedal is required.

## **6.7: Bumpers**

W.E.Rock considers the front bumper to be the foremost part of the frame excluding push bars, stingers, etc. The rear bumper is considered to be the rearmost part of the vehicle.

**6.7.1:** Bumpers must connect the right and left frame rail.

## **6.8: Cooling**

W.E.Rock considers the following to be part of the cooling system: Radiators, hoses, engine ports, heater hoses, and coolant products.

The following are the cooling guidelines for competition:

**6.8.1:** Air Cooling is approved.

**6.8.2:** Water-cooled systems are approved.

**6.8.3:** Radiators must be securely mounted and covered so that, in the event of a break in the radiator, spectators, spotters and drivers are protected from the coolant spill.

**6.8.4:** Hoses and connections must be in good condition without cracks, all connections must have a tightening device that utilizes a mechanical means to secure the connection.

**6.8.5:** Top mount (roof mount) radiators are not approved.

**6.8.6:** Radiators must have an OEM or adequate sized aftermarket overflow bottle, securely

mounted, and connected to the radiator by an overflow tube. Overflow bottles may not be mounted over or in the passenger compartment. Overflow bottles may not be beverage containers.

**6.8.7:** The use of Ethylene Glycol is not permitted.

**6.8.8:** Vent tubes must be attached to an adequate sized fluid containment container.

## **6.9: Drive shafts**

W.E.Rock consider the drive shaft to be the working link between the transfer case and the axles. The following are approved for competition:

**6.9.1:** All mechanical drive shafts are approved.

**6.9.2:** All Driveline u-joints must be covered so that broken parts may not hit any occupants.

## **6.10: Electrical**

W.E.Rock includes all wires, lights, batteries, and any other items controlled by or conducting electricity as its function to be part of the electrical system.

The following are electrical guidelines for competition:

**6.10.1:** Batteries must be in good shape with adequate mounting to keep the battery in place in the event of a roll.

**6.10.2:** All batteries must be of a non-spill type.

**6.10.3:** Mounting must be a clamp type mount that "cages" the battery in position. Foot-type clamp mounting is not approved.

**6.10.4:** A "Master" kill switch that shuts down every electrical system is required to be mounted on the dash, clearly labeled and in proper working order. This switch must kill the engine when switched to the "off" position.

**6.10.5:** Wires must be in a condition and position that is safe. Exposed or burned wires are not approved.

## **6.11: Engine/Motor**

W.E.Rock considers the system designed to create torque and horsepower, including blocks, heads, valve cover, oil pan and all internals of such system to be classed as part of the engine.

The following the engine guidelines for competition:

**6.11.1:** All engine/motor sizes and configurations are approved.

**6.11.2:** Engine/motor must be free of leaks.

**6.11.3:** Engine/motor mounts must be in good condition and of adequate material to support the engine.

**6.11.4:** Vent tubes must be attached to a fluid containment container.

**6.11.5:** Dipstick caps must be sealed.

## **6.12: Fuel System**

The fuel system includes all components and connections used to store, deliver, and mix fuel and air on the vehicle. This includes the type of fuel used.

The following are fuel system guidelines for competition:

**6.12.1:** Carburetors are approved.

**6.12.2:** Fuel Injection systems that either injects fuel from a throttle body or thru ports is approved.

**6.12.3:** Non-vented gas caps are mandatory (Vented gas caps are not approved).

**6.12.4:** Unleaded, leaded, propane, natural gas, and diesel fuels are approved.

**6.12.5:** Alcohol is not approved for competition as a main fuel (see above).

**6.12.6:** Fuel systems must be sealed with a rollover valve installed in the fuel vent line.

**6.12.7:** Ball valves must be installed on all fuel lines including vent lines. Ball valves must be mounted under the vehicle.

**6.12.8:** Fuel lines must be ran from the fuel tank or cell to the engine in a safe route.

**6.12.9:** Fuel lines must be free of leaks or cracks in hoses.

**6.12.10:** Throttle assemblies must be in good order and work smoothly. Throttles that do not move smoothly throughout their entire range of motion will not pass.

**6.12.11:** Hand throttles are approved but must automatically return to the non-throttle position.

**6.12.12:** Vent tubes must be attached to a fluid containment container.

### **6.13: Frame/Chassis**

W.E.Rock considers the frame of a vehicle to be the two rails supporting the mounting of the body and drive train as the main frame, and connecting cross members as the sub frame.

The following are frame guidelines for competition:

**6.13.1:** Tubing, boxed, or semi boxed mainframe material must be made of a magnetic steel.

**6.13.2:** Tubing in mainframe material must be no less than .75" outside diameter.

### **6.14: Vehicle Numbers**

Vehicle numbers must be displayed on the right, and left sides of the vehicle.

**6.14.1:** Numbers are to be no less than six 6" tall.

**6.14.2:** All numbers are to be the responsibility of the teams. If a team has a number preference, they must ask for that number to be assigned them, before the season starts. Numbers will be issued on a first come first served basis. If a number has been pre-assigned to another competitor, the second competitor will have to change their number. To request a number, the team must be signed up for the W.E.Rock Series.

**6.14.3:** W.E.Rock recommends a detachable number plate be used.

### **6.15: Roll bars/Cages**

W.E.Rock considers the cage as the safety bars surrounding the driver. Cages must be designed to protect the occupant in the event of a rollover.

The following are roll bar/cage guidelines for competition:

**6.15.1:** Six (6) point mounting cages covering the driver are required.

**6.15.2:** OEM bars are approved for a portion of the roll cage.

**6.15.3:** Handles are required on the interior portion of the roll-cage or vehicle.

**6.15.4:** Round steel tubing (D.O.M Preferred) 1.5" O.D with 0.095" wall is compulsory for the basic roll cage. Aluminum and/or soft metals are not permitted. Roll bar construction must be welded. A W.E.Rock official must approve roll cages made of other material or in other wall thickness/diameters.

**6.15.5:** Connection positions of the roll cage must tie in to the frame of the vehicle; Body mounts are considered a tie in point.

**6.15.6:** The front-most position must be no farther toward the rear of the vehicle than fifteen (15) inches behind the throttle and brake pedals.

**6.15.7:** The Cage must have a space no wider than 24" above the driver's head, and at least 1 spreader bar between the front main bar and rear main bar are required unless the cage top is 24" wide or less.

**6.15.8:** Gussets must be welded in the four corners of the "halo". Gussets may be tubing or plate steel.

**6.15.9:** A minimum of .040 magnetic expanded or flat sheet metal, or 1/8" aluminum, must cover the area immediately over the driver seat and be welded or bolted to the roll cage. Steel tubing must surround the roof panel.

**6.15.10:** W.E.Rock recommends a spreader bar to be mounted under the dash area to connect the right and left "A" pillars.

**6.15.11:** If doors are not ran, a bar running from the "B" pillar, at approximately shoulder height, to the "A" pillar, at approximately shin height, must be ran. This can be a bolt in piece.

**6.15.12:** A "periscope bar" may be no longer than 12" above the "halo" bar. This may be used as an attaching position for tow straps.

**6.15.13:** Cage height must be a minimum of 3 inches from the entire helmet of the driver

### **6.16: Seating**

The following are seating guidelines for competition:

**6.16.1:** All W.E.Rock approved seats must have padded rib protectors and seat leg extensions on the left and the right side.

**6.16.2:** Adequately padded headrest or neck support acceptable to W.E.Rock official inspectors is required.

**6.16.3:** Single seat configurations acceptable.

**6.16.4:** Seats must be mounted to the roll cage. Mounting to the body is not permitted.

**6.16.5:** An approved Five-point harness is mandatory and must be worn at all times while on an obstacle.

## **6.17: Steering**

W.E.Rock considers steering to be all components designed to turn the vehicle wheels to the left or right of the vehicle centerline.

The following are steering guidelines for competition:

**6.17.1:** Full Hydraulic steering is permitted.

**6.17.2:** Rear Steering is permitted.

**6.17.3:** Brake Steering (See Brakes).

**6.17.4:** All steering components, u-joints, and fittings must be in good working order as determined by a W.E.Rock official.

**6.17.5:** Hydraulic steering fluids must not leak.

**6.17.6:** Hydraulic lines must be steel braided line in good shape. All lines must be run in a safe route.

**6.17.7:** Vent tubes must be attached to a fluid containment container.

## **6.18: Stickers**

Teams may run their own stickers without restriction in size. Stickers may not use profanity or be of a crude nature. W.E.Rock will ask that all competitors run the event sponsor stickers, though not required.

## **6.19: Suspension**

The following are suspension guidelines for competition:

**6.19.1:** Reactive suspension systems are approved.

**6.19.2:** Manual suspension controls (ie. Forced Hydraulics) are approved in this class.

**6.19.3:** Suspension pivot points, connecting points must be free of cracks and in good physical condition as determined by a W.E.Rock official.

## **6.20: Tires**

The following are tire guidelines for competition:

**6.20.1:** All factory built tires from any manufacturer.

**6.20.2:** All automotive-based tires. No agricultural tires are approved.

**6.20.3:** Tires are to be the only source of forward, side, or back movement of the vehicle. Any device used to move the vehicle in these directions other than the tires is considered a tool or winch and points will be assessed accordingly.

**6.20.4:** Tire Studs, screws, or anything added to the tire to aid traction are not permitted

## **6.21: Transfer Case**

The transfer case transfers power to the front axle and rear axle of a vehicle.

The following are transfer case guidelines for competition:

**6.21.1:** All transfer cases are approved.

**6.21.2:** Vent tubes must be attached to a fluid containment container.

**6.21.3:** All Driveline u-joints must be covered so that broken parts may not hit any occupants.

## **6.22: Transmission**

The following are transmission guidelines for competition:

**6.22.1:** All automatic or manually operated transmissions are approved.

**6.22.2:** Vent tubes must be attached to a fluid containment container.

### **6.23: Weight**

Weight is the total vehicle weight.

**6.23.1:** The vehicle must weigh a minimum of 2200 without the driver while competing. A W.E.Rock marshal may approve weight reduction based on damage while competing.

**6.23.2:** Use of environmentally damaging compounds, fluids, etc. is not permitted for weight in the tires. This includes Lead. Determination of this rule will be left to occurrences; therefore penalties will be issued once the tire has torn, broken, etc. and the environmentally damaging compounds or Fluids have been released.

### **6.24: Wheels**

The following are wheel guidelines for competition:

**6.24.1:** All steel and aluminum wheels are approved.

**6.24.2:** Bead lock wheels with locks on both the inner and outer side of the wheel or any combination thereof are approved.

**6.24.3:** Wheels and bead locks must not interfere with the proper operation of brakes.

**6.24.4:** Wheels must be mounted onto the axle with a minimum of four lug studs.

**6.24.5:** All lug studs must have the proper nuts on them.

### **6.25: Winches**

The following are winch guidelines for competition:

Winches in working order are required on the vehicle at all times while competing.

**6.25.1:** All professionally built and sold electric, hydraulic, and power take off winches, with a minimum capacity of 5000 pounds on the first wrap of cable, are acceptable.

**6.25.2:** Winches must use rope type cable substitute with minimum burst strength of nine thousand five hundred (9500) pounds (5/16 steel cable).

**6.25.3:** Rope must be in acceptable condition with minimal fraying or kinks.

**6.25.4:** Winch line hooks must be rated at ten thousand (10000) pounds.

**6.25.5:** Winch must be mounted using all factory-mounting positions on either the bottom or front and back.

**6.25.6:** All vehicles must carry an approved winch bag

**6.25.7:** Winch line hooks must have an attached strap, at least four inches in length.

**6.25.7:** Cable is not permitted.

**6.25.8:** Winch rope must be available for use during competition, may not be permanently attached to the axle.

**6.25.9:** Must be in working order and able to use (not tied to the axle) during the event in the case of an emergency or self extraction help

### **Additional Requirements**

· Two Fire extinguishers must be securely mounted to the roll cage on both the right and left hand side of the vehicle. Mounting position must be on the vertical main bar immediately behind the driver on the left side and between the seats.

· Trucks: must be mounted on the vertical main bar behind the cab, behind the driver and passenger seat, or in another suitable location, and approved by a W.E.Rock Official.

· Extinguishers must be easily removed without the use of tools.

· Extinguishers must be full.

### **Additional Recommendations for Safety**

It is recommend but not mandatory that the following items be considered as options when building a competition vehicle.

· Wrist restraints or window netting.

- Bead-lock rims.
- Neck supports.