



DESIGN REVIEW

For participation in the Formula Sun Grand Prix/American Solar Challenge

University/College Name	
Team Name	
Team/Car Number	
Events & Year	<input type="checkbox"/> Formula Sun Grand Prix _____ (year) <input type="checkbox"/> American Solar Challenge _____ (year)

This documents the review of the **Mechanical Vehicle Design Report** by a practitioner or an academic in an engineering field appropriate for this application that sound engineering practice has been applied to the design of the solar vehicle to be built for participation in the American Solar Challenge/Formula Sun Grand Prix events:

- Formula Sun Grand Prix, a 3-day (8 hours per day) closed, road-course track event
- American Solar Challenge, a road-rally style, open road event of 1500-2000+ miles

Per the event regulations, each university/team is responsible for the roadworthiness of its solar car. All solar vehicles must be maintained in a safe, roadworthy condition and be operated safely and within the law at all times. All solar vehicles are operated and driven at the team's own risk.

Each university/team is responsible for the safety of its members, and any minimum criteria specified by the Organizers via the regulations and/or correspondence between the teams and the Organizers should not be construed as design specifications for the construction of a "safe" solar vehicle. In addition, passing this design review does not guarantee that the Mechanical Vehicle Design Report will be approved nor that the solar vehicle will pass scrutineering.

Current event regulations are available at americansolarchallenge.org.

Item Reviewed	Review	Comments
Have you read and reviewed the full Mechanical Vehicle Design Report?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>Mechanical VDR Form, Item #6</i> Has analysis been shown that the occupant cell (frame/chassis and roll cage) meets the frontal, side, and top impact load scenarios, such that the roll cage will not yield and that all other components will have deflections <25mm and stresses below the ultimate tensile strength? (Reg 10.3.A.8, Appendix F3)	<input type="checkbox"/> Yes <input type="checkbox"/> No	

<p><i>Mechanical VDR Form, Item #6</i> Has the protection provided for occupants been documented in the team's Mechanical Technical Report? (Reg 10.3.A.9, Reg 5.2.B)?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<p><i>Mechanical VDR Form, Item #7</i> Has the roll cage been designed to</p> <ul style="list-style-type: none"> • deflect body/array panels away from occupants in an accident, as defined in Reg 10.3.A.11 • provide the clearance defined in 10.3.A.14, and • provide the occupant space defined in 10.3.C? 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<p><i>Mechanical VDR Form, Item #8</i> Does the placement and attachment of the seat belts in the design comply with the manufacturer's instructions and Reg 10.3.E?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<p><i>Mechanical VDR Form, Item #9</i> Has a dual, balanced braking system been designed, as well as a parking brake? (Reg 10.5, 10.6)</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<p><i>Mechanical VDR Form, Items #10-11</i> Has the steering system been designed in accordance with Reg 10.7, including steering stops?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<p><i>Mechanical VDR Form, Item #12</i> Has analysis been shown that the front suspension system meets the 1G turn, 2G bump, and 1G braking load cases, along with the worst-case combination of these load cases, per Appendix F.2?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<p><i>Mechanical VDR Form, Item #13</i> Has analysis been shown that the rear suspension system meets the 1G turn, 2G bump, and 1G braking load cases, along with the worst-case combination of these load cases, per Appendix F.2?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<p><i>Mechanical VDR Form, Item #14</i> Do the tires and rims in the design adhere to Reg 10.2?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<p><i>Mechanical VDR Form, Item #16</i> Does the mounting of the battery box comply with Reg 8.4.B?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<p><i>Mechanical VDR Form, Item #18</i> Are all fasteners specified in the design compliant with Reg 10.4?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No	

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I have reviewed the design of the solar vehicle specified on page 1, the associated Mechanical Vehicle Design Report, and the applicable regulations.

- The solar vehicle has been designed using sound engineering practice.
- The design presented in the report is compliant with the regulations.
- A vehicle built according to this design would be able to pass the inspections required for participation in the Formula Sun Grand Prix/American Solar Challenge.

Signature	
Printed Name	
Date	
Title	
Phone Number	
Email Address	

***** THE ABOVE REVIEWER MUST BE AUTHORIZED BY EITHER
(1) THE TEAM ADVISOR IDENTIFIED ON THE TEAM PARTICIPATION AGREEMENT OR
(2) THE UNIVERSITY OFFICER THAT SIGNED THE TEAM PARTICIPATION AGREEMENT *****

I give authorization to the above person to complete this review on behalf of the university.

Signature	
Printed Name	
Date	
Title	
Phone Number	
Email Address	

Please submit a scanned copy of the completed document to ascteams@americansolarchallenge.org with the Mechanical Vehicle Design Report. Please bring the original document with them to present at onsite registration.