

31.2.11 Weld Confirmation Checks

The following definitions will apply to the entirety of rule 31.2.11:

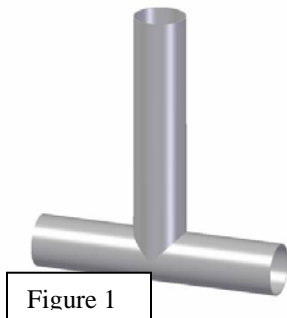
- As-Built Vehicle: the vehicle presented at technical inspection
- Roll Cage Elements: elements of the roll cage as discussed in rule 31.2.1
- Roll Cage Welds: any weld joining two or more roll cage elements or one or more roll cage elements and one or more gussets as discussed in rule 31.2.9
- Roll Cage Material: tubing of the same geometry and alloy as the roll cage elements of the as-built vehicle
- Roll Cage Welder: any person that performs welding of the roll cage welds of the as-built vehicle

Each roll cage welder must demonstrate sufficient welding skill and craftsmanship with the tools, processes and roll cage material. In addition to visual inspection of the as-built vehicle, the national technical inspectors will collect and inspect welding samples during the technical inspection process to determine dynamic and endurance event competition eligibility. Teams unable to submit welding samples of adequate quality, as defined below, shall not be eligible to compete in any dynamic or endurance event.

Each team must submit two (2) samples for each roll cage welder, both of which are constructed of roll cage material which have been welded with the same tools and processes as those of the as-built vehicle and which have also been subject to the following destructive testing and inspection:

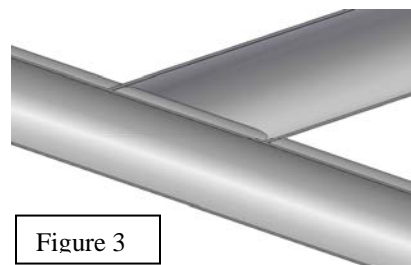
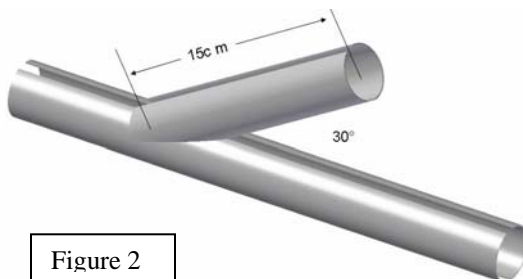
Sample 1 - Destructive Testing:

A structure per made up of roll cage tubing welded at a 90 degree angle, the length of each tube to be determined by the team. < **Figure 1** > This joint should be subject to destructive testing causing the joint to fail to which indicates superior weld strength with respect to the base material. (The testing method is left to the team discretion. For example, teams can use pull testing in a lab, or apply a moment to one side of the joint will fixing the other joint.)



Sample 2 – Destructive Inspection:

A structure made up of roll cage material that has two tubes attached at 30 degree angle with a length of at least 15cm from the center of the weld joint. < **Figure 2** > which has been cut, in a band saw, along the length of tube to reveal adequate and uniform weld penetration < **Figure 3** >.



Final judgment of weld strength with respect to the base material as it described in sample 1 and the adequacy and uniformity of weld penetration as described in sample 2 shall rest with the national technical inspectors.

Welding samples constructed of material other than the roll cage material and / or welded with a process other than that of the roll cage welds of the as-built vehicle shall be not be considered sufficient demonstration of welding skill and craftsmanship with the tools, processes and roll cage material.