**Protocole de test alternative material châssis équipé**

***T3.3*** Alternative Materials

***T3.3.1***

Alternative materials may be used for all parts of the primary structure and the tractive system accumulator container with the following exceptions:

• The main hoop and the main hoop bracing must be steel

• The front hoop must be metal

• Any welded structures of the primary structure must be steel

• However, the front hoop may be an aluminum welded structure

***T3.3.2***

If any other materials than steel tubing are used in the primary structure or the tractive system accumulator container, physical testing is required to show equivalency to the minimum material properties for steel in T3.2.

***T3.3.3***

If alloyed steel as deﬁned by T3.2.2 is used, the team has to include tests and documentation in the SES to show structural equivalency. This may include, but is not limited to:

• Receipts and data sheets of the used tubing materials

• Documentation about welding processes and ﬁller materials

• Documentation about heat treatments

• Tests showing adequate strength and elongation at break in the welded condition

Ainsi, on va réaliser plusieurs séries de tests afin de valider le dernier point du T3.3.3 : tests en traction, et limite élastique en WELDED CONDITION. Nous allons détailler les protocoles à suivre afin de réaliser ces tests :

TEST EN TRACTION (ultimate strength = 180MPa)

Deux tubes soudés l’un à la suite de l’autre puis machine au T23/D4/LTDS ?

TEST EN LIMITE ELASTIQUE (yield strenght = 300MPa)

Voir au LTDS : dureté de Vickers/Brinell/Rockwell