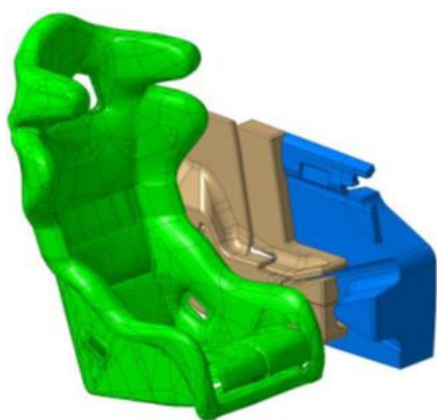




ASN Safety Bulletin #52

Rally Door Foams



PROJECT SUPPORTED BY  **FOUNDATION**

Welcome to Issue #52 of the FIA Safety Bulletin. In this edition, we will explore the innovation and safety advances behind the use of rally door foams, including what they are and how they are used as part of the FIA's global effort to improve motor sport safety.

Rally door foams are designed to be fitted in rally cars and not intended for use within cars competing in circuit racing. They are homologated according to the FIA Standard 8866-2016 and designed to protect the drivers and/or co-drivers during side impacts. The use of door foams will increase protection during the most severe accidents when the occupant's head or torso is directly aligned with the centreline of the impactor,

frequently trees and solid objects in close road stages.

The rally door foam is a package of three (VA; VB; and VC) energy-absorbing materials used to fill the cavity and space between the outside of the door and the occupant's seat. The total volume of the foam package is a minimum of 60 litres per side. As shown below, it also extends forwards and rearwards to dissipate energy during pure lateral, angled impacts and those impacts where the tree or solid object is slightly forward/rearward of the seat-shoulder-plane but would still overlap the occupants' head or chest.

The rally door foam package also includes a foam (VC) located between the seat-side-head and the side glazing to provide protection between the helmet and the object, particularly if the car has a roll angle such that the first point of contact (between the car and the tree) is the side glazing rather than the sill or door.

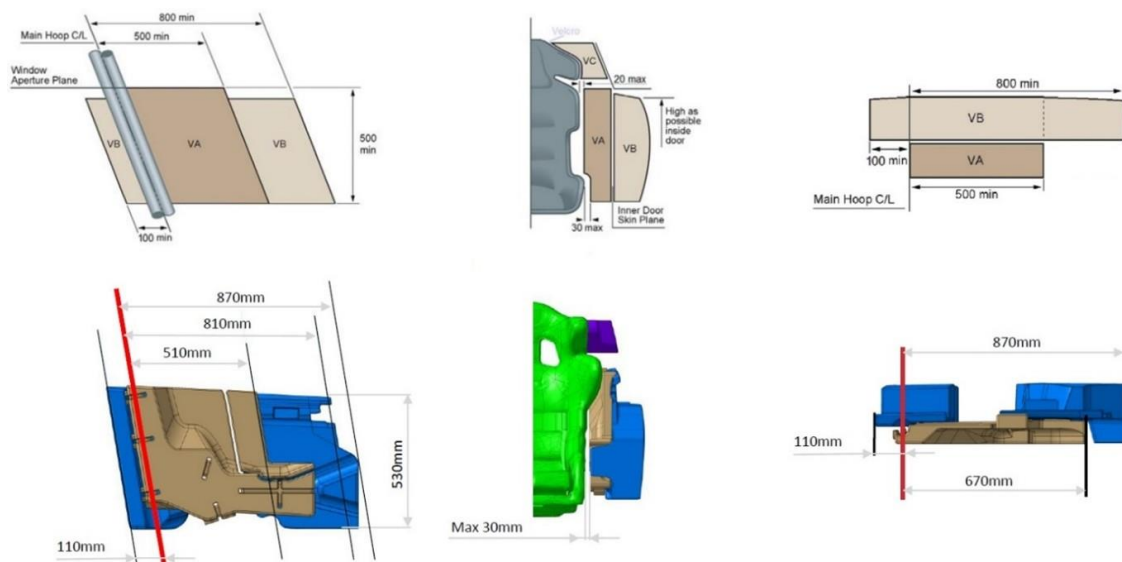
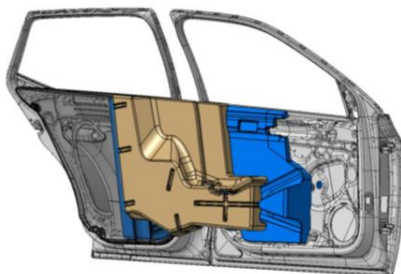


Figure 1. Rally door foam volume requirement and an example of an application



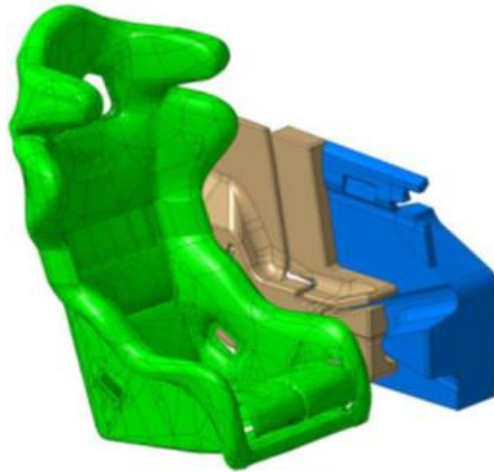


Figure 2. Isometric views of application example

The FIA Standard 8866-2016 is a performance-based standard regulating the foam materials that can be used. These foams provide a significant improvement in the safety of rally cars in the scenarios detailed above, particularly side impacts against trees and solid objects.

The FIA Safety department strongly recommends ASNs to adopt the usage of rally door foams according to the FIA Standard 8866-2018. This is particularly important to implement at the grassroots level. In cases where this improvement cannot be implemented due to cost restrictions, we recommend the use of other materials with the following properties:

- Material: Expanded Polypropylene (EPP) or Polyethylene (PE)
- Density: 44-60 g/L
- Tensile strength: minimum 408 kPa range (105.4 psi)
- Elongation at break: minimum 10%
- Compressive strain / compressive strength:
 - 25% strain: within 190 - 330 kPa range (27.6 – 47.9 psi)
 - 50% strain: within 290 - 400 kPa range (42.1 – 58.0 psi)
- Fire resistance: compliant with either UL 94 (1996-10) HF-1 or FMVSS 302 or ISO 3795

For further information and details please follow the links below for the FIA Standard, its respective technical list and the installation guidelines:

- [8866-2016 Rally Door Foam](#)

- [FIA Technical List 58](#)
- [Rally Door Foam Installation Guidelines](#)

Further information, including installation guidelines, is available via the FIA Safety Department or FIA website. Questions or requests for clarification should be addressed to: safety@fia.com.

We kindly request your support to promote these updated Guidelines among your event organisers, officials, and volunteers.

Thank you for your continued commitment to improving safety across the sport.

FIA Safety Department