



Formula Student - an innovative car race

To design aerodynamic elements for their single-seater, the UVigo team of engineering students chose low density foam Divinycell H45.

Formula Student

Formula Student, the most important inter-university car competition in Europe, finds its roots in an interdepartmental project initiated in the UK in 1998. It entails the challenge of designing and building a high-performance car to overcome different static and dynamic tests, to acquire technical knowledge and to push the innovative capacity of every team. Today, more than a hundred universities from all over the world meet annually in each of the European circuits that host this event.

The challenge

Endorsed by world-renowned engineers, including the former leader of Mercedes AMG F1 team Ross Brawn, the race is about more than just building a car. The true essence of the competition is to inspire and challenge future engineers to be more enterprising, innovative and competent. The competing teams have to face the challenges from real industrial development, ranging from research and design, over actual production and prototype testing, to financial and marketing management. All these factors are evaluated by an expert jury with members from the automotive industry.

Industrial Engineering at the University of Vigo

The University of Vigo is a public university located in Galicia, Spain. Considered the most technical of the universities of Galicia, it offers engineer degrees in Mining,

Telecommunications, Forestry Engineering, Computer Science and Industrial Engineering. The latter participates in Formula Student with its team “UVigo Motorsport”.

UVigo Motorsport, first season

During its first season (2014 – 2015), UVigo Motorsport represented the University of Vigo and Galicia with its first single-seater, the UM15. The team has also competed in Silverstone 2015 (UK), Hockenheim 2015 (Germany) and Montmeló 2015 (Spain). In its first season the team achieved a remarkable debut result in all three competitions and even received an individual award in Formula Student UK. In addition, the technical leader was awarded the Craig Dawson prize for the most valuable team member in the competition, a reward that reflected his invested effort. UVigo Motorsport made history in Formula Student by winning a title in its first year of participation.

UVigo Motorsport, second season

In its second season, the team branched out into different competitions such as Formula Student Czech Republic and Formula Student Spain. It also introduced a brand new and innovative single-seater in which the tubular steel chassis was replaced by a carbon fiber monocoque. In addition, the vehicle incorporated better aerodynamics and improvement of the electric system, resulting in the second best Spanish design score.

Divinycell H45 low density foam

“In the last season, we decided to add aerodynamic elements so we chose Diab and its foams,” says a UVigo representative. The low density foam *Divinycell H45* was used to manufacture the core of the wings. The foam core is covered with carbon fiber layers and then infusion-molded, allowing for the manufacturing of the lightest Spanish car in the competition. “Diab trusted us and they offered help during the entire project. Therefore, we are very pleased to share this experience with Diab and we thank all the trust given because this project would not be possible without the collaboration of Diab.”

Planning for future competitions

Currently, UVigo Motorsport consists of 28 engineering students from several engineering branches with previous competition experience. The objective is to make important improvements and to strengthen the position of the team in the competition. The project members have planned the development of a long-term team structuring model in which students from different courses of engineering and other UVigo campuses will join the team on a year-to-year basis so that a continuous improvement and knowledge transfer will be ensured.