



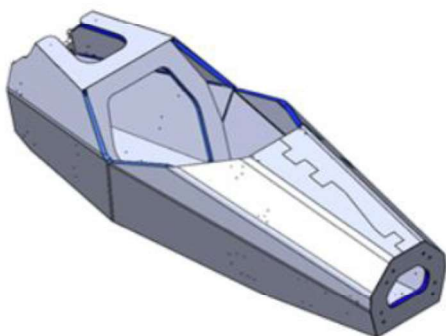
IN COLLABORATION WITH



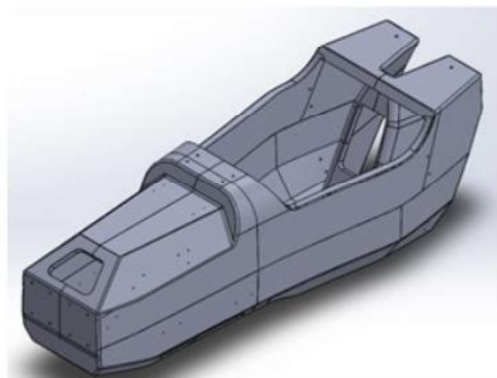
During the manufacturing of OBR18 for the 2018 season Marbocote introduced Oxford Brookes Racing to its line of products which proved crucial to the manufacturing of high-quality composite parts.

In 2019, Oxford Brookes Racing (OBR) made the change from a folded to a moulded chassis. The design change improved the aerodynamic efficiency and further improved the stiffness of the chassis whilst keeping weight to a minimum. This change required OBR to make changes to its manufacturing method for its composite monocoques as the lay-up procedure was divided into stages in order to simplify the manufacturing process.

As a leader in the Advanced Composites market, Marbocote's experience in key industries such as Formula 1 and Aerospace made using their semi-permanent release agents an attractive prospect for OBR. The products provided by Marbocote to OBR were key to manufacturing high quality carbon fibre parts and were delicate on the expensive moulds required to make the complex geometries.



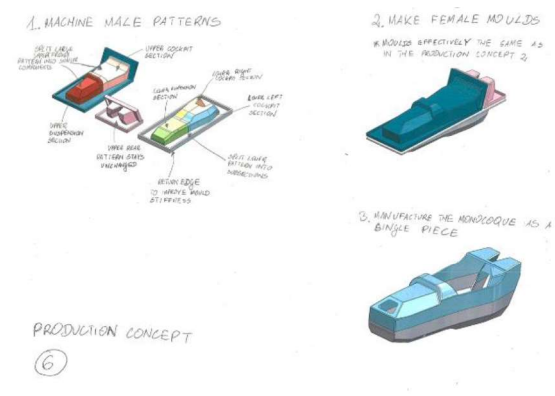
OBR18 Folded Monocoque



OBR19 Moulded Monocoque

Manufacturing

The following paragraphs will explain the manufacturing process of the OBR19 Chassis mould.



Monocoque Manufacturing Concept

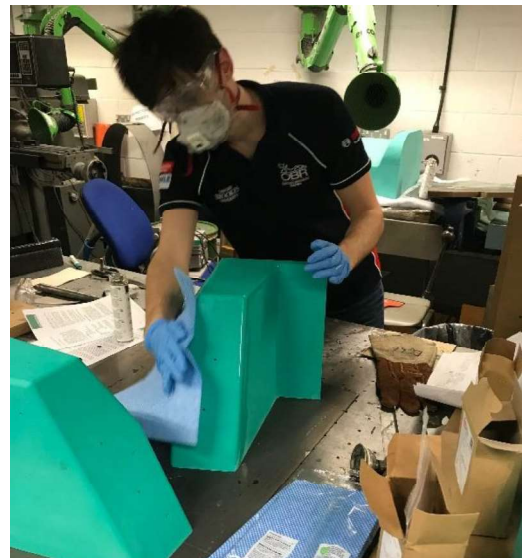
In order to manufacture the female moulds made for the actual chassis, male moulds had to be created from tooling block. These blocks are shaped as per the monocoque design by using an automated machine attached with a cutting tool that accurately cuts away the unwanted material.

These newly cut male moulds then need to be prepared for an initial lay-up using Marbocote's Mould Cleaner and HP2002 Tool Sealer.



Freshly cut tooling blocks

Marbocote's Mould Cleaner is used to remove dirt that has built up during the cutting phase of the tooling blocks which is important to remove any impurities and to ensure a smooth surface finish. The HP2002 Tool Sealer acts as a mould release primer and is used to seal any of the pores that may be present on the tooling block. Its easy, quick application and fast cure time allows OBR to efficiently prepare multiple moulds in short intervals.



OBR Team Member applying Marbocote's HP7

Lastly, Marbocote's HP7 Release Agent is applied on the prepared male moulds before the initial lay-up. Its low odour makes the HP7 Release Agent the perfect product to use for lay-ups indoors. Since it is suitable for all types of epoxies, OBR has the freedom to choose any type of epoxy required for the task at hand.



Finished monocoque mould



Monocoque in the curing stage

Carbon fibre and epoxy is added to the moulds, is promptly bagged and left under a vacuum between 12-24 hours. Thanks to Marbocote's HP7 Release Agent, the cured carbon fibre is easily removed from the moulds without being damaged. Marbocote's help in the development of OBR's first moulded monocoque has been

crucial in making the challenging task more manageable with the high-quality products supplied. OBR thanks Marbocote in everything the company has done and looks forward to an exciting working relationship in the coming future.



Finished Monocoque