BALMORAL

MPM navigates subsea challenges with top level expertise

Balmoral Comtec specialise in the design, development and delivery of sub-sea architecture, buoyancy, protection and insulation for the offshore energy sector. Deploying their specialist knowledge, proprietary laboratory, hydrostatic and mechanical testing facilities, their products are used across a spectrum of applications. Combining services from concept development through to design, toolmaking, manufacturing and testing.

Highly technical product

Technical support and development

Rapid delivery

With continual innovation delivering technical solutions to the industry, Balmoral reached out to MPM as a partner to manufacture a new solution to existing infrastructure by replacing polypropylene moulded parts with high performance monolithic GRP. Having designed, modelled and computer tested the solution, MPM were able to deliver parts which exceeded the necessary specifications as verified by independent testing by CTL in Galway, Ireland.

QUALITY

Being a highly technical and structurally significant part, materials and process specifications were vital in ensuring the products conformed to the necessary standards for performance and quality.

MPM developed an FAI process, checking jigs as well as digital machined glass kits to ensure the technical performance of the parts was consistent and as ready for volume manufacturing as possible.

ACCURACY

Throughout the project, the risk of a failed infusion process was effectively managed using a detailed layup plan and SOPs. Key data such as temperature, pressure, and fill time were recorded on route cards, ensuring full traceability for each part.

Each component was also digitally marked with a unique identification number.

Additionally, every product was paired with a test sample manufactured concurrently. These samples were laboratory tested to industry standards, providing technical data on tensile, compressive, and hardness properties. The results significantly exceeded the required levels, ensuring safety and durability under the harshest sub-sea conditions, with a failure point exceeding 4 tonnes.

PROCESS AND PRODUCTION

Using a form of bagged vacuum infusion, MPM deployed their experience in materials and process knowledge to produce a part thickness in excess of 45mm and a combination of over 200 digitally cut glass-fibre patterns. MPM was proud to have developed a combination of quadaxial glass and glass-based flow medium which enabled the part to be infused in under two hours.

BENEFITS OF USING MPM:

- Specialist materials and process knowledge
- CNC cut jigs and templates to support product quality
- In-house/turnkey manufacturing
- Strength of supply chain relationships to shorten lead times and maximise quality

"MPM worked on the project from concept right the way through to first **off parts, testing and serial production.** Using knowledge of advanced materials, MPM were able to exceed expectations of performance, cycle times and on-time delivery to manufacture a highly technical **off-shore infrastructure component."**

Ben Parsons,
Project Engineer, Balmoral

THE CHALLENGE

R&D to develop a complex product using an unproven process

THE VALUE WE ADDED

Technical support, derisking and development

THE BENEFIT TO THE CUSTOMER

Accurate proof of concept and rapid delivery