Scientific Management International

Our head office and factory in Andover

20 YEARS CAPABILITY APPROVAL MoD

1997-2017

Think of the harshest environment on the planet – that's Scientific Management International's backyard where their moulding routinely operates. Designing, manufacturing and installing pressure moulded cable harnesses for the most hostile of environments on Earth – regularly including through submarine hull installations and on the ocean floor. Scientific Management International are the only company worldwide to hold continuous Capability Approval from the Ministry of Defence for over 20 years. This is illustrated by having had over 10,000 installations with zero leaks to date, and will have precisely zero leaks in the future – that's why their mantra is right first time, fit and forget.

Essentially, cable harnesses and connectors are the coverings that secure the wires and fibre optics transmitting signals or electric power in a variety of industrial, commercial, civil and military contexts. Clearly, in hostile environments involving extreme temperatures, wet and high-pressure conditions below the surface – be that on the hull of a ship or the seabed – this requires advanced technology and expert installation. In this case also strengthened by internal deep cycle testing, product x-ray procedures and constant and total quality control.

Scientific Management International is a privately held company based in Andover, Hampshire supplying hostile environment cable harnesses and connectors to the marine, aerospace, alternative energy and transport industries – including Britain's own nuclear fleet for over 20 years. Professionalism is the difference between life and death, where right first time every time and guaranteed 10,000 installation zero leak performance is essential, providing solutions to the highest technical challenges in sector.

FACTS ABOUT SCIENTIFIC MANAGEMENT INTERNATIONAL

- Formed 1992
- Designer & manufacturer of Pressure Moulded cable systems for hostile environments
- Develops products in accordance with UK Defence Standards – 20 year uninterrupted
- SME operating as a prime contractor to UK MOD and Tier 1 Defence companies
- Operating in Marine, Aerospace & Renewables markets
- Based in Andover, Hampshire with offices in Perth, Australia & Paris, France
- 'Right first time, every time' – 'Fit & forget' technology
- www.smi.group

> "Right first time, every time, fit and forget"
>
> Glen Richardson, Chief Technical Officer, Scientific Management International Ltd

Why it pays to get it right first time

The importance of getting things right first time cannot be overstated. Unfortunately, too many suppliers and customers alike are seduced by lower initial costs into compromising on reliability, resulting in the need for rectification at some stage down the line. This can involve costs often many times what it would have taken to do the job properly in the first place.

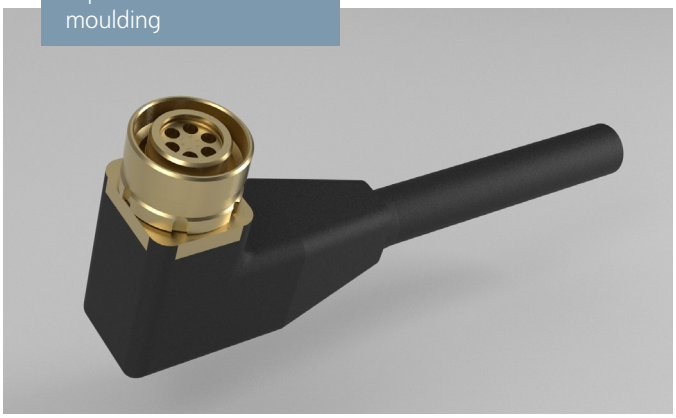
In contrast, Scientific Management International's approach is to work closely with customers from the very early stages of a project bringing over 25 years expertise and experience to bear, ensuring installations are right first time, fit and forget – with zero leaks. This does not always make them more expensive than their rivals, even in terms of upfront costs. Sometimes tailoring an installation to its purpose from the start means developing a more graceful engineering solution, resulting in lower costs. This was found recently with Plastethurm mouldings which can take fibre optics around a 90 degree bend and so can fix issues with connectivity in confined spaces.

A culture of excellence and innovation

Scientific Management International are committed to technological excellence, which underlines their heritage not only as a one hundred percent reliable supplier, but also as an international industry leader having offices in UK, France & Australia. Customers therefore have confidence in everything they do, and that includes looking forward and developing technology in order to solve the problems of the future.

Innovation is woven into the culture of business at every level, along with a focus on rigorous accreditation. The certificates held include the ISO 9001:2008 quality management system, approval for the manufacture of 1st Level pressure glands from the Ministry of Defence, along with, as mentioned above, 20 years continuous capability approval for the manufacture of pressure hull and equipment glands which is a unique achievement worldwide.

SlipstreaM connector moulding



'A LEGACY OF INNOVATION

The first submarine pressure hull glands were developed by Submarine Cables in Erith, Kent, during the 1950s, but the associated technology evolved considerably in the ensuing decades.

For a long time, it was felt that selecting material for cable harnessing involved a compromise between electrical performance and abrasion resistance; different materials had different advantages, and disadvantages. Eventually, it was Scientific Management International that developed a technology combining the best of both worlds, leading to extended life for cable harnesses.


Pressure Hull Gland

Keith Wells, CEO of Scientific Management International says 'The first 'PlastEthUrm' technology was introduced into another NATO country's submarines five years ago and to date six boats have been supplied, with three launched and in service. As ever there has been one hundred percent fit and forget performance.'

Another innovation has been the SlipstreaM connector moulding, which combines compact size with a 90 degree bend radius. This enables the efficient and reliable transfer of power and data in wave and tidal installations even where there is restricted space or where low resistance to tidal movements is a consideration.

When mated with PlastEthUrm, SlipstreaM enables Scientific Management International to provide lifetime warranties for cable mouldings and harnesses.

Some recent successes

Interesting projects from the past few years include the first tidal installation for SeaGen (Marine Current Turbines) replacing another supplier's failed harnesses, and supplying export cable terminations for Tidal Energy's Deltastream installation in Pembrokeshire, with low and medium voltage and fibre optic connectors.

The faultless reputation within the industry is well illustrated by the fact that they were a supplier to the recently commissioned Open Hydro 2MW Tidal turbine at Cape Sharp in the Bay of Fundy, which has just started producing power.

The most successful projects are those that involve collaborating with other innovators, and making an impact on the industry as a whole, bringing 25 plus years experience to good use. This was certainly the case when commissioned by the Royal Navy to help develop a solution to reliability issues with a motor used in submarines. The R&D team redesigned the relevant part in a way that resolved the problem and saved the Navy budget, and this solution was then applied across the fleet.

In order to continue to grow they have to ensure they can recruit staff with the right skills to maintain depth as well as breadth of knowledge – excelling in both how it's always been done and how it could be done now and developing that process. This is more difficult for the manufacturing disciplines than at the technology and design professional level, and has led to growth of the apprentice training programme in order to secure high growth plans. Apprentices are recruited each year and currently have 5 at various stages of development. This has a major benefit in that apprentices develop within a culture of total reliability – or as they say, fit and forget.

> "Our excellence in the UK has led to ongoing expansion overseas"
>
> Martin Stillman-Jones, Chairman