CASE STUDY

MODUS / ROGERS TEST EXCEEDS IP67 INDUSTRY STANDARD

CUSTOMER PROBLEM

The function of a seal for an industrial enclosure is to safeguard electronic components against dust, moisture and wind-driven rain. Clients rely on the International Ingress Protection (IP) 67 standard to ensure gaskets and seals, which meet this standard, will protect their sensitive electronics.

An international solar company asked Modus to solve their problem of leaking gaskets. The gaskets they were using met the IP67 standard, but were failing in the field. The IP67 standard requires a seal to be dust proof and waterproof when immersed at 1 meter for 30 minutes, but it wasn't enough to protect their susceptible electronic equipment. The seals were leaking.

The shape and size of their electronic enclosure units provided an additional challenge. The 508 mm long x 152.4 mm wide x 127 mm tall rectangular enclosures are fastened at each of the four corners. This caused an uneven compression of firmer materials along the long ends of the gasket making the sides prone to leakage. The solar company needed an enclosure seal that would withstand complete immersion for up to 72 hours without the costly expense of re-engineering.

Now that's a pretty tall order! Modus and its partner, Rogers Corporation, took on the challenge to create waterproof gaskets to meet this difficult measure.

OUR SOLUTION

The solution for preventing moisture infiltration into the client's electronic enclosure units involved replacing the client's failing gaskets with those made with Rogers' PORON® AquaPro™ 37 enhanced water sealing material. This material provides the properties needed to stop the leaking. AquaPro's high compression set resistance, low stress relaxation, and excellent water sealing properties achieved a waterproof seal when the unit was completely immersed, covered by 25.4 mm of water for 72 hours in addition to solving the uneven distribution of compression.

Leakage is only part of the solution that Modus and Rogers provide. Long-term reliability is just as important. Every batch of AquaPro is tested for long-term reliability by performing Compression Resistance Testing. The test consists of compressing the material to 50% of its original thickness for 22 hours at 70C and then measuring how much the material rebounds after it is uncompressed. When the material rebounds to its original thickness, we know that the end product will be reliable.

RESULT

- The enhanced water-sealing performance of PORON AquaPro tested to be well above the IP67 industry standard as a waterproof solution and met the client's requested specifications.
- The excellent compression set resistance properties of PORON AquaPro guarantees durable, long-term sealing performance.
- The uneven compression distribution is solved due to the inherent quality of AquaPro requiring a very low compression force to achieve a tight seal.

ABOUT MODUS

Modus is a diversified custom manufacturer and materials converter which stocks a complete line of EMI/Microwave Absorbers, Grommets, Extrusions and Thermal Management Materials. Modus utilizes its 40 years as an established provider of high quality, reliable products to create precisely what customers want. Their ability to design and customize product solutions relies on state-of-the-art processes which include, die cutting, water jet cutting, digital cutting, rubber slitting , adhesive laminating, form-in-place, rubber molding , CNC machining, and CNC routing / splicing. Specializing in innovative processes; custom fabrication utilizing high-tech products; an on time delivery record of more than 99%; Modus is well positioned to help your company succeed.