

Automated sealant dispensing provides IP65 rated LED lens seal and production efficiencies

In this case study Techsil provided emergency LED lighting manufacturers, Mackwell Electronics, with an automated solution for dispensing a clear, fast curing, 1-part silicone sealant with a Nordson Performus™ III benchtop dispenser, to seal a clear plastic lens in an emergency luminaire housing. This provided an accurate, reliable IP65 rated seal, improved productivity and the system installed can be adapted to suit other in-house bonding applications.

Our Customer

Mackwell Electronics

Techsil Products Used

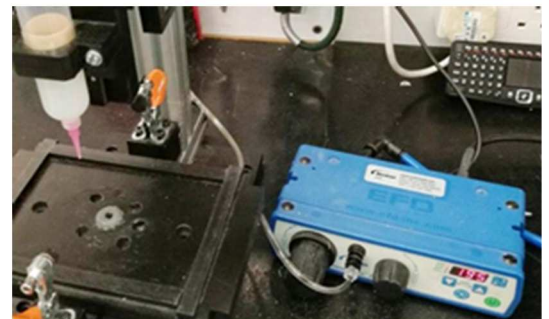
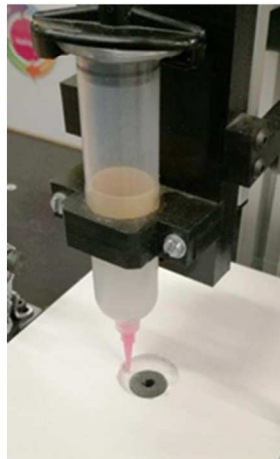
Momentive's Snapsil
TN3005-C

And

Nordson Performus™ III
Benchtop Automated
Dispenser

Customer Benefits

- Clear, uniform adhesive seal to IP65 standard
- Improved productivity, yield and accuracy
- Adaptable system can be used on other in-house bonding applications



Operating from a purpose designed R&D and manufacturing facility, Mackwell's philosophy of never leaving safety to chance has led to the design of a portfolio of high quality, durable emergency LED lighting products for a wide range of applications such as entrance lobbies, hospitals, hotels, lifts, offices & staircases.

Application

Mackwell were trying to reliably bond a clear plastic lens into a self-contained emergency light housing. This had to be sealed to IP65 standards for challenging environments. Techsil were invited in to discuss various clear bonding options including cyanoacrylates, UV curing adhesives and silicones. The lighting units were being produced in volume batches on the shop floor. Hand bonding was not viewed as efficient. A semi-automatic bond application was envisaged. Techsil took away a housing and

lens for assessment and trials back at their testing facility at Bidford HQ.

Solution

After a number of in-house trials, Techsil prescribed and sampled Momentive's Snapsil TN3005-C. This is a clear 1-part, low volatile siloxane, thixotropic silicone sealant with a fast tack-free time. TN3005 C offers primerless adhesion to most substrates and cures at room temperature to a 22 Shore A rubber. Bonded units were sent away for rigorous testing and passed with flying colours.

Techsil liaised with Mackwell's engineering department regarding a dispensing system; the Nordson Performus™ III was the one recommended. This is a compact, operator-controlled benchtop system which is used with an electric foot pedal with the advantage that it could be used with a preparatory feed valve, that Mackwell already had on site, to power the dispenser.

Conclusion

The Performus™ dispenser can handle all assembly fluids; with fast, controlled application it can make dots, beads and fills. Mackwell now have this system in operation and will adapt it further to complete a variety of other in-house bonding applications. This dispensing system has increased throughput, improved yields and reduced production costs overall.

Snapsil TN3005-C silicone adhesive sealant has proved to be a high performance material that stood up to rigorous testing and will last for the life of the product. Being a 1-part material there is no mixing and no primer needed, making it very easy to use.

Techsil's insightful knowledge of adhesives and application knowledge in real production environments was used to find a cost effective, reliable solution which in turn enhanced product performance and profitability.

Contact us for more information on our Adhesives, Sealants and Dispensing Solutions:

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