

# 3M industrial tapes boost productivity for a leading rail engineering company

**“The quality of 3M products is outstanding, while their speed of response, willingness to share their knowledge and experience, and commitment to our business success sets them apart from other industrial suppliers.”**

Jason Feldwick,  
RAIL/LMS Senior Admin/Purchasing & Logistics,  
Houghton International



**Houghton  
International**

## Executive Summary

The Rail Division of Houghton International specialises in the repair, maintenance and life extension of motor alternating sets and AC and DC traction motors. The company works with customers around the world; in the UK these include the mainline rolling stock leasing companies (ROSCOs) and train operating companies (TOCs), ranging from Porterbrook to First Capital Connect and Tyne and Wear Metro.

The key criteria for customers are to keep trains in service for as long as possible, with scheduled maintenance or emergency repair being completed quickly and efficiently to minimise downtime. For Houghton International this means continuously finding new methods of improving productivity, as demand for the company's services increases, without impacting the quality and reliability of each refurbished traction motor.

Houghton International has been working closely with 3M for over 8 years, with the company's tape products forming part of a programme of continuous improvement designed to boost productivity by reducing the number of production stages, speed up each process and minimise the number of different products required.

## The engineering process

Houghton International refurbishes several hundred traction motors every year – a number that is steadily increasing as demand rises from customers around the world. Once in the workshops, motors undergo initial assessment, before being dismantled to their component parts.

Depending on the degree of wear or damage component parts are then refurbished or replaced. Motors are rewound, and mechanical and electrical parts are ground, polished or welded, prior to reassembly, with motor cases being repainted and critical assemblies being vacuum pressure impregnated using epoxy or silicone resins. The completed motor undergoes extensive testing and quality controls, at each process stage and as a final unit.

3M tapes are used throughout, to protect surfaces, coils, connectors and wiring. This puts considerable demands on the tapes. It's essential that they remain securely in place during jet washing, paint spraying and high temperature drying and curing. It's also important that they can be removed easily, even after having been in situ for extended periods.

3M's technical team has worked closely with the engineers from Houghton International, spending considerable time on site to advise on the best materials to use and explore methods of improving process operations. Together, experts from the two companies have developed a solution using two of 3M's key products: 3M™ Scotch™ Aqua Washi 2899 and 3M™ 201E Masking Tapes.

Jason Feldwick concludes, "The quality of 3M products is outstanding, while their speed of response, willingness to share their knowledge and experience, and commitment to our business success sets them apart from other industrial suppliers."

## How 3M products deliver productivity and quality

A key benefit for Houghton International is its ability to improve productivity and quality using 3M™ Scotch™ Aqua Washi and 3M masking tapes.

These help improve productivity for Houghton International in a number of ways. For example, the Aqua Washi tape provides high levels of surface protection without peeling or separation, but is easy and quick for Houghton International's engineers to remove, without leaving adhesive residues on the surfaces that are being protected. This eliminates the

need for subsequent surface cleaning using solvents – a procedure that was previously required with competing Melinex® tapes and demanded the use of potentially harmful chemicals.

A further advantage of Aqua Washi tape for Houghton International is that it peels in a single piece. Competing tapes tend to tear as they are removed, leaving behind small shreds. Although this might be an inconvenience on a surface that is easy to see or access, it can be a major problem during final testing; at this stage each motor has been fully assembled and if small pieces of tape are left in-situ they can affect the results of the electrical integrity tests. In the worst case, this can result in a fail, requiring the motor to undergo partial disassembly and further checks, leading to delays in delivery and adversely affecting productivity.

The versatility of Aqua Washi tape has also enabled Houghton International to use the product throughout its production operation. This has helped to standardise and reduce stockholding and cost, as fewer specialised tapes are required, and to simplify each production stage, as shop-floor staff only need to use a single tape for most tasks.





The net effect of using 3M™ Scotch™ Aqua Washi Tape has been to reduce the number of individual process stages and overall time needed for each production operation, while improving operator safety.

3M™ Masking Tape 201E is also used by Houghton International for a number of tasks, as it is ideal for holding, fixing, wrapping and sealing surfaces, and is easy to unroll without tearing. Its strength and flexibility make it suitable, for example, for masking areas that need to be sprayed, with just a single layer of tape being required for full protection; previously, using competing materials, Houghton International's engineers found that they had to use multiple layers of tape to achieve the desired result. 3M masking tape therefore reduces both cost and time.

The success with which the Aqua Washi tape and 3M masking tapes have been used, has more recently led Houghton International to trial 3M™ Impact Stripping Tape YR500. This is being used to protect critical electrical and ceramic components during shot blasting of motor covers and frames; as a result, Houghton International expects to see further improvements in productivity and efficiency, as the new tape withstands these harsh conditions far better than competing materials.



**“The versatility of 3M’s product line has enabled us to standardise on a single tape for most production operations. This has reduced stockholding and administration and is driving real time savings during motor refurbishment.”**

Jason Feldwick,  
RAIL/LMS Senior Admin/Purchasing & Logistics,  
Houghton International

## Shared values

Houghton International has an outstanding reputation for quality, service and innovation, and works closely with its customers to develop new techniques and processes that, for example, extend product life and reduce lead-times. It applies a similar philosophy to its relationship with key suppliers and believes that, in 3M, it has found a partner with shared values and a common commitment to continuous improvement.

This has been exemplified in the time that 3M’s specialists have spent on-site, working with Houghton International’s engineering teams to help them find new ways of enhancing productivity and product quality. Although these have often been incremental improvements the combined effect for Houghton International has been considerable, bringing significant time saving, product standardisation and overall cost reduction.

Overall, Houghton International estimates that the use of 3M products has helped its engineers achieve significant improvements in productivity.

## So what can 3M do for your business?

**Ask a 3M Expert**

**3M Industrial Adhesives and Tapes Division**  
**3M United Kingdom PLC**  
3M Centre  
Cain Road, Bracknell  
Berkshire RG12 8HT  
Tel: 0870 60 800 60  
[www.3M.co.uk/industrial](http://www.3M.co.uk/industrial)

**3M Industrial Adhesives and Tapes Division**  
**3M Ireland Limited**  
The Iveagh Building  
The Park  
Carrickmines  
Dublin 18  
Tel: 1 800 320 500

Please recycle. Printed in the UK.  
© 3M 2018. 3M and Scotch are  
trademarks of the 3M company.  
All rights reserved.  
All other trademarks used in this write  
up belongs to their respective owners.

**3M**