expanSil™ V-0

Case Study
Industry: HVAC & Rail

The New York City Subway is one of the largest rapid transit systems in the world with 472 stations in operation. Commuter traffic for the metro system is colossal with daily ridership expected at 5,580,845 per day during the week.

Due to a large number of people and hi-tech equipment, efficient and reliable heating and air conditioning systems are crucial for the rapid transit system to function effectively at comfortable ambient temperatures for the passengers and workers on-board.

When manufacturing a Mass Transit component, the safety elements are of the utmost importance when considering design and materials for construction.

The Opportunity & Challenge

Our sales team were contacted by a mass transit component manufacturer, looking for a silicone gasket to be used as a hatch seal within HVAC units on the New York Subway.

Following discussions with the customer, our sales and material engineers identified the material and grade of choice to be expanSil™ V-0 as the project required flame and smoke toxicity specifications such as NFPA 130, Bombardier SMP 800c and UL 94 V-0 certification.

Our V-0 range is specially formulated to provide fire and smoke safety as well as excellent performance under everyday stresses of HVAC units, especially within rail where failure from the movement of the rail car are common.

A V-0 silicone sponge profile was selected for the project and shipped to the customer, so they could begin testing within the application.

Feedback from the customer indicated that initial trails had failed a water ingress test which meant the customer now needed a fast resolution to get the project back on track.

NFPA®

UL®

BOMBARDIER

Silicone Engineering Ltd

The Solution: In-house Expertise

Firstly our innovations team was brought in to push the project forward. Next, a collaboration from all parties, the carriage manufacturer, OEM and Silicone Engineering helped to isolate the problem.

After an in-depth investigation, we found that it was in fact the cutting processes used to assemble the gasket, that was causing water ingress within the HVAC unit. Utilising our many years of jointing experience and specialist cutting on jointing equipment, we completely changed the gasket assembly process and suggested a new cutting method to solve the problem.

All parties were happy with the changes made, and our innovations team began testing the gasket within a test rig. The customer was delighted to find the changes made solved the water ingress problem and provided them with a sealing solution.

Silicone Engineering are now supplying the extruded profile and are proud to be helping improve the safety and reliability of HVAC units in the next generation of rail cars for the New York Subway.