



FOAMGLAS®

Public Transport Improved in the European Capital of Brussels

PROJECT PROFILE

The Brussels subway network is the largest in Belgium, with a total length of 40 kilometres (25 miles). With more than 300,000 people using the Brussels subway system each day, the safety, comfort and convenience of commuters and visitors to the region is vital. Since much of the network is more than 30 years old, a renovation complying with contemporary safety standards was required to enhance both the network's safety level and visual appeal.

MIVB, the owner of the public transportation system in the Brussels-Capital Region, who also manages 215 kilometres (133 miles) of tram lines and 470 kilometres (291 miles) of bus lines, managed the renovation efforts.

Water Supply Piping Renovation

FOAMGLAS® cellular glass insulation was chosen as the insulation for the water pipes, which run parallel to the subway lines. These water pipelines are extremely vital to the underground tunnels because they deliver the water needed in the event of a fire.

These water pipelines were originally heated electrically instead of utilizing a high-performance insulation product to keep them from freezing. The outdated electrical system, however, required replacement every five to six years due to rapid corrosive conditions in the tunnels.

In line with both economical and ecological considerations, electric heating of the pipes was eventually disallowed. Instead, the selection of high-performance insulation that would keep the water pipes operating and prevent freezing became necessary. Based on previous successful experiences, the owner selected FOAMGLAS® insulation for this project.

Facility Owners:

Builder: Brussels-Capital Region

Construction Supervision:
Bestuur Uitrusting en Vervoer (BUV)

User: MIVB-STIB

Supply Scope:

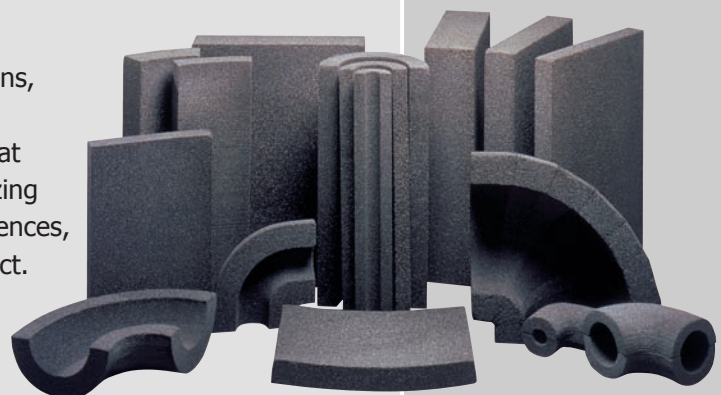
FOAMGLAS®
Prefabricated pipe shells

Insulation fabricator and technical advice:

Pittsburgh Corning Europe
Represented by PC Belgium and GH Luxemburg

Period of Construction

2005 – 2012





Complex Working Conditions

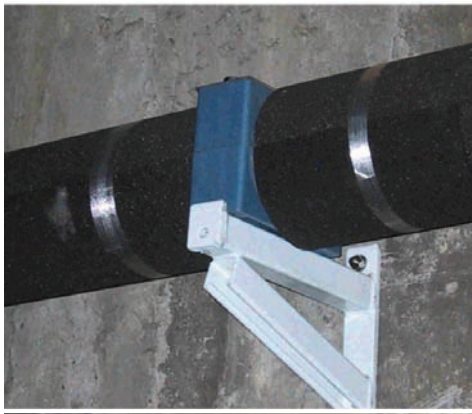
Maintenance in underground tunnels is always a challenge because the subway trains pass at fixed intervals, making it very difficult to schedule the work. The piping could only be replaced between 1 and 4:30 a.m., and every piece of material had to be supplied daily at the jobsite and then removed at the end of the shift. Due to these extreme conditions, the employees of the insulation contractors were trained at the Pittsburgh Corning training center in Tessenderlo, Belgium.

Execution

Prefabricated sections of FOAMGLAS® insulation, with a thickness of 39mm (1.5 inches), were applied. This insulation thickness was specified after consultation between the builder and Pittsburgh Corning technical staff. A crucial factor for the thickness was the potential for freezing of the unmoving water in the pipes. Because of the length of certain routes and the difficulty in reaching the valves and stations that close at night, it was necessary that all piping be free of frost for at least 24 hours at a temperature of -15°C (5°F).

The prefabricated FOAMGLAS® half-round insulation sections were installed over the piping and then protected with 1mm thick aluminium jacketing with a distinctive red color. This color makes it easy to see the pipe and find any problem areas on the jacket.

As of 2010, approximately 16,000 metres (nearly 10 miles) of piping has already been insulated with FOAMGLAS® insulation, and members of the FOAMGLAS® insulation team continue to contribute to the improvement of the public transport system in Brussels.



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