

Building & Industry

NOVENCO

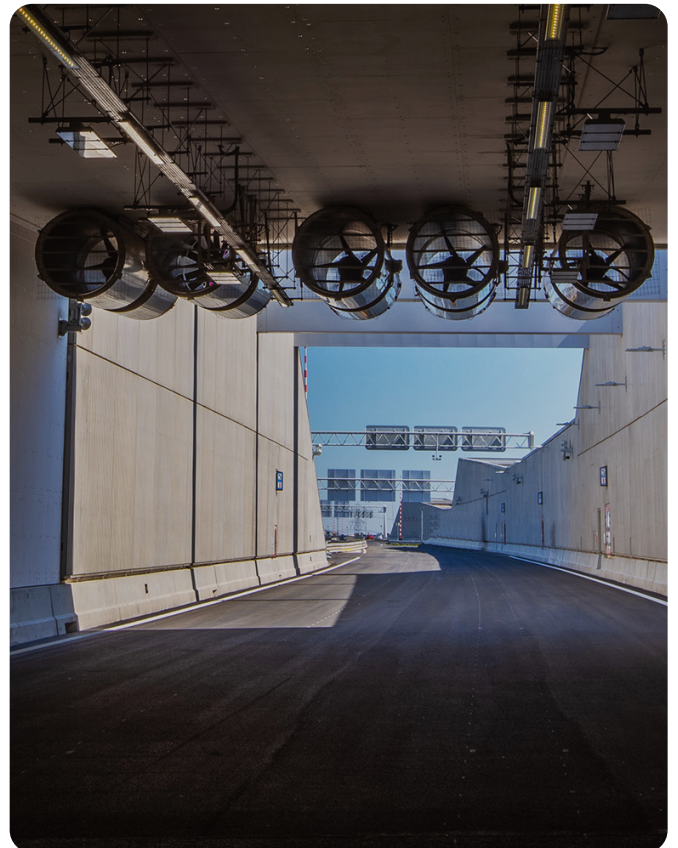
SCHAKO Group

Life-safety ventilation systems for the longest land tunnel in the Netherlands

A green tunnel vision

The A9 motorway between Schiphol Airport, Amsterdam and Almere has been reconstructed and expanded to improve traffic flow and quality of life. The road now offers five lanes in each direction plus a tidal-flow lane, easing congestion and improving access to the Randstad region.

A key element of the project is the Gaasperdammertunnel. With a length of 3 km and five tunnel tubes, it is the country's longest and widest land tunnel. By routing all traffic through this semi-sunken tunnel, the environmental impact on nearby neighbourhoods is eliminated. A park of almost 15-hectare or 150.000 m² has also been created on top of the tunnel.



NOVENCO tunnel jet fans in the Gaasperdammertunnel



Gaasperdammertunnel, The Netherlands

Life-safety as the first priority

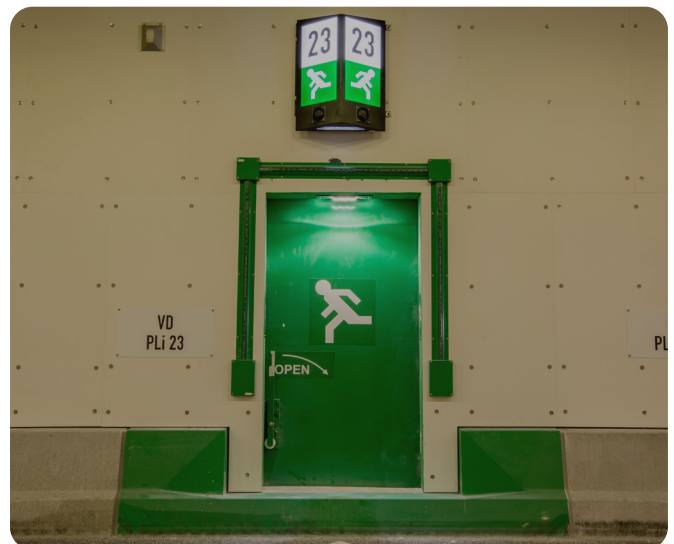
IXAS Gaasperdammerweg BV commissioned NOVENCO Building & Industry to design and deliver the complete longitudinal tunnel ventilation system. This includes risk analysis, pressurisation of the escape tunnel, equipment supply, installation, testing, commissioning and final hand-over.

The ventilation system serves both daily ventilation and smoke control in the event of fires. It uses certified NOVENCO NovAx™ smoke tunnel jet fans type AUR 800, AUR 1120 and ARR 800.

In emergencies, users can evacuate safely via the separate escape tunnel. The tunnel is divided into three compartments, each with its own controlled differential pressure. During normal operation, the fans run at a fixed low speed, reducing energy consumption. NOVENCO also supplied ZerAx® AZN 1250 axial fans for the pressurisation system of the escape tunnel.



Jet fans handle both daily ventilation and emergency smoke control



Safe exit with illuminated escape route



High-performance jet fans in action



Entrance of the Gaasperdammertunnel

Equipment delivery

NOVENCO Building & Industry designed the longitudinal ventilation system for both normal ventilation and smoke control inside the tunnel. A total of 30 unidirectional NovAx™ AUR 1120 and ten AUR 800 tunnel jet fans operate as open injector fans at the tunnel entrances. Another 99 fully reversible NovAx ARR 800 jet fans are installed throughout the tunnel tubes. All units are made entirely from stainless steel.

For the escape tunnel, NOVENCO designed a pressure-differential system that keeps escape routes smoke-free and ensures clear access for fire services.

Here 12 ZerAx AZN 1250 axial fans are installed together with SCHAKO multi-leaf dampers, silencers and weather protection grilles. Additional NOVENCO equipment includes pressure sensors, filter boxes, cabling and control cabinets.

The scope also covered factory acceptance testing (FAT), site acceptance testing (SAT), commissioning, start-up and hand-over to the Dutch road authorities.

Further tunnel safety equipment includes 360° cameras, 791 loudspeakers and 553 emergency telephones.

Facts:

- Longitudinal tunnel ventilation system
- Escape-tunnel pressurisation system
- Complete ventilation package from design to hand-over