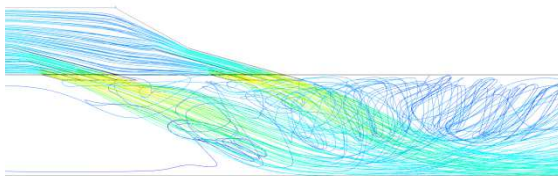




Channel separation flap



Axial fan for longitudinal ventilation (Saccardo nozzle)



Numeric flow simulation of Saccardo nozzle

Description

The UPlANS Colombier – Cornaux includes the renovation of the section between Colombier and Cornaux of the National Road N05. The sub-project TP2 covers alternative constructions underneath the city of Neuenburg from St. Blaise to the exit of Serrières; i.e. a total tunnel length of c. 6 km, divided into constructions with a length between 300 m and 3,900 m. The route has different entries and exits partially integrated in tunnels. All tunnel constructions consist of two tunnel pipes and are operated in one-way traffic (exceptional two-way traffic admissible). The longest tunnel of the section is the Traversée de Neuchâtel, which has three different ventilation systems:

- Mechanical longitudinal ventilation
- Point-by-point smoke extraction
- Targeted smoke extraction including longitudinal ventilation with Saccardo nozzles

In the construction of the bypass, the three parts of the Traversée de Neuchâtel were regarded as independent constructions, which, however, is not the case. By means of a global ventilation concept considering all constructions, the best solution with respect to safety, feasibility and costs were determined. The particularity is the combination of the different ventilation systems and their interaction, the selective smoke extraction and the longitudinal ventilation with Saccardo nozzles.

Services

Within the renovation and optimization of the ventilation system, HBI Haerter provided the following services:

- Assessment and evaluation of the condition of the existing installations, evaluation of operation experience, smoke tests and measurements
- Selection and conception of the future ventilation system (concept studies, concept of measures, detailed project) including the definition of the construction measures
- Submission and ordering of the different installation parts: axial fans (exhaust air, Saccardo, point-by-point extraction), jet fans, exhaust air flaps, sensors.
- Construction management (nighttime closing), commissioning, acceptance and tests