



**INDOOR FIRING RANGE**  
Displacement ventilation

# Displacement air wall

## Description:

Insulated displacement air walls are installed in shooting ranges because they create a low-turbulence displacement flow. The primary air supplied is introduced over a large area behind the shooter over the entire wall area. In this way, a so-called plug flow is created, which removes gunshot residue or air contaminated with pollutants without leaving any residue in the direction of the bullet trap. This creates an environment with high air quality for the shooter, even during firing.

## Function:

Through the interaction of internal SEV distribution elements with the perforated front panel, the air exits evenly over the entire outlet surface. In interaction with the exhaust air, this creates a plug flow that is characterized by a homogeneous speed profile. Inhomogeneous introduction of supply air, for example through optional window cutouts, is compensated by adjusting the SEV elements according to the shortest distance. This means that the required air speeds, for example according to the shooting range guidelines, can be maintained at the relevant positions.

## Material:

The outlet is made of galvanized steel material, perforated front coated in white (RAL 9010). The SEV distribution elements are made of black plastic.

## Accessories / Options:

- Coating in a RAL color of your choice
- Cover plates for walls, floors and ceilings
- Exhaust grille with integrated filter

## Selection of air volume:

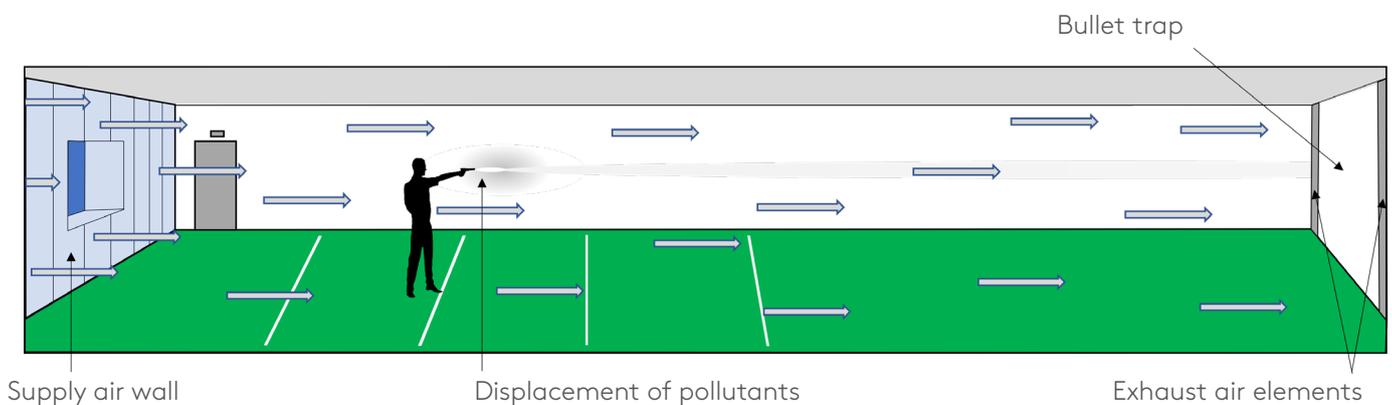
In order to comply with the air speeds, for example required by the shooting range guidelines, the supply air volume flow of the QAW-PFG-SEV source air wall is determined as follows:

$$V_0 \text{ [m}^3\text{/h]} = \text{room dimensions (height x width) x desired speed (+ 5 \% tolerance)}$$

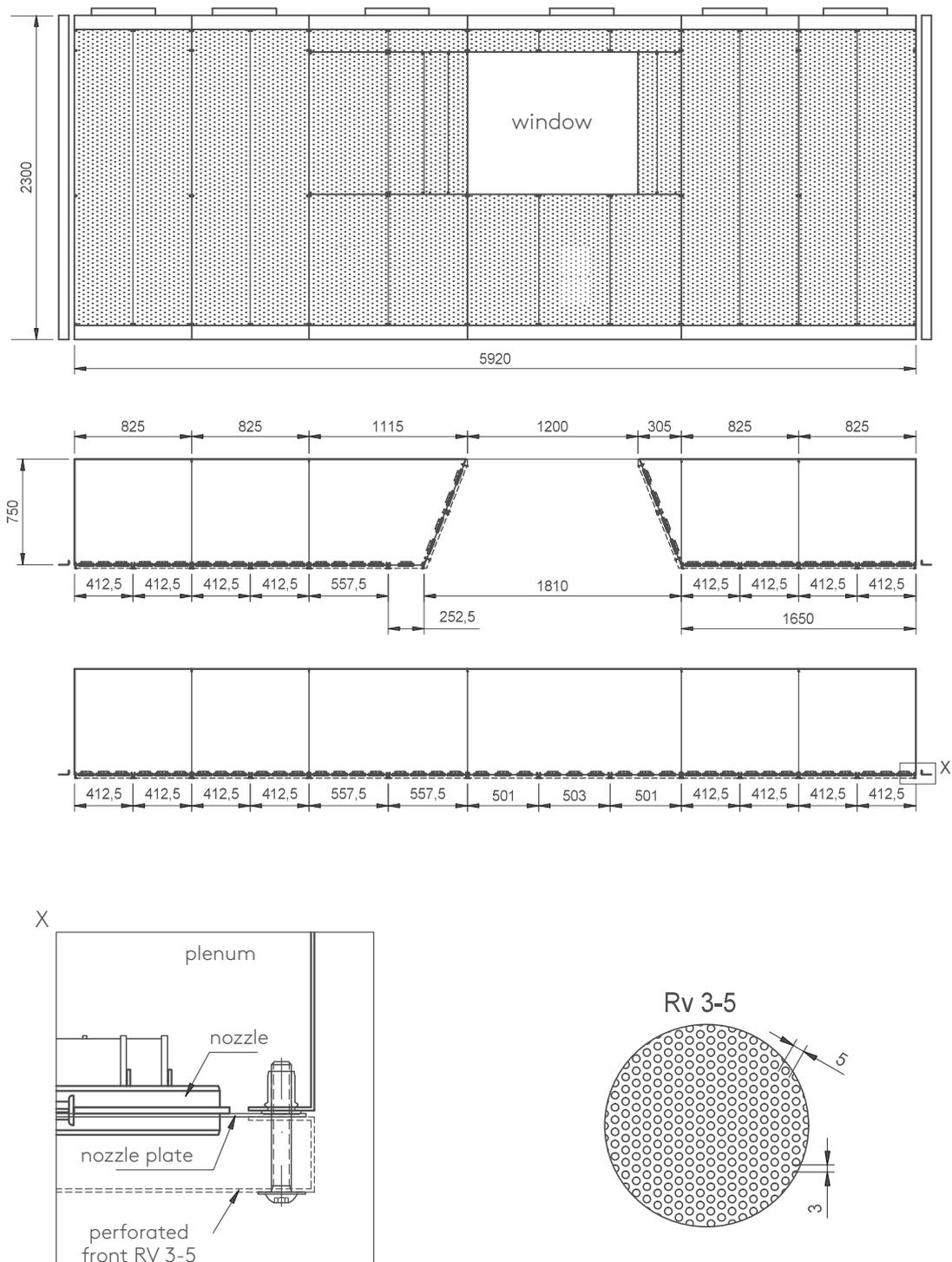
To create a low under pressure in the room the exhaust air volume must be greater than the supply air volume.

We would be happy to support you in designing your supply air wall.

## Airflow in an indoor firing ranges



## Constructive setup:



The exemplary supply air wall unit with a window *QAW-5920 x 2300 x 750* (cover image) shown here consists of 10 assembled individual elements. A nozzle panel with adjustable SEV elements for homogeneous air distribution is located behind the perforated front panel. The front panel has a perforation pattern of Rv 3-5. Furthermore, optional blind panels can be installed in the wall, ceiling or floor areas.

## Reference:



The picture shows the supply air wall of the shooting range in Ainring-Mitterfelden.

## Excerpt from the reference list:

Construction project	Place of execution	Product
Shooting range Simon	Troisdorf	low velocity diffuser PFG
Indoor shooting range, Bernauer Straße	Berlin	low velocity diffuser PFG-SI
Space shooting gym	Hamburg	Combination-diffuser PFG-VZ-90
Space shooting ranges	Frankfurt	low velocity diffuser PFG-SK
Police headquarter, Ingolstadt	Ingolstadt	supply air wall QAW-PFG
Shooting range, Hillerse	Hillerse	low velocity diffuser PFG-SI
Heckler & Koch, Shooting range	Oberndorf	low velocity diffuser PFG-SEV
Riot police	Eichstätt	supply air wall PFG-QWA
State criminal police office	Düsseldorf	supply air wall PFG-QWA
Police shooting range	Günzburg	supply air wall PFG-QWA
Shooting range	Meinerzhagen	supply air wall QAW-PFG
„Norddeutscher Schützenbund“	Bassum	supply air wall QAW-PFG
Police headquarters	Heilbronn	supply air wall QAW-PFG
Main customs office	Hamburg	supply air wall QAW-PFG



# LUFTECHNIK IN PERFEKTION

## [ventilation perfection]

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### Hauptsitz [Headquarter]

Unser Unternehmen ist im südlichen Emsland beheimatet. Hier arbeiten Entwicklungs- und Produktionsabteilung sowie der Vertrieb Hand in Hand.

Our company is based in Lingen/Ems, in the southern Emsland, where our development-, production- and sales department work hand in hand.

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