matrix wall

2025

Product catalogue MatrixWall

Modular cleanroom construction system

Contents

Modular cleanroom construction system 4

Cleanroom ceiling 6

Ceiling grid guide profiles 6

Ceiling panel 8

Walkable ceiling panel 8

Ceiling panel hatch 9

Ceiling panel lighting fixtures 9

Air supply units 10

Modular wall system 12

Floor basebords 14

Ceiling U-profile 16

Wall posts 17

Wall panels (solid) 18

Wall panels (glass) 19

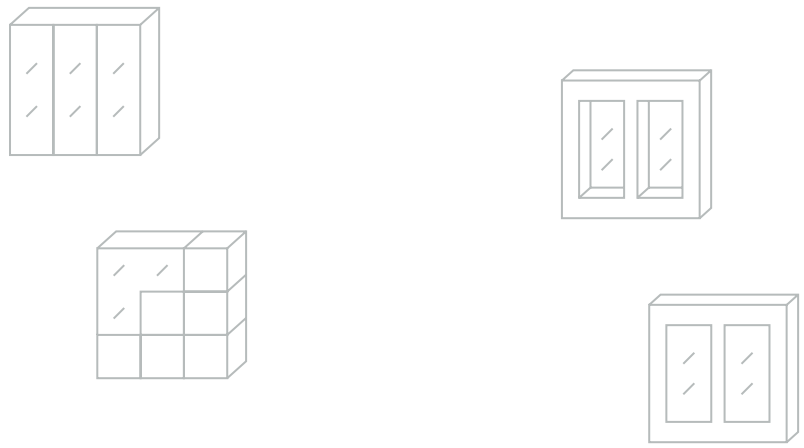
Wall media panels 20

Wall panels — framing of building structure elements and equipment 21

Fire cabinets 22

Personal airlock (PAL) 23

MatrixWall. Production site 24



Modular cleanroom construction system

MatrixWall is a Russian company that creates modern clean rooms for pharmaceutical production and microelectronics, laboratories, sterile areas for medicine at its own production facility in St. Petersburg, which meet all GMP requirements

> Modern, beautiful, stylish rooms made of metal and glass

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Colored wall panels in the interior of clean rooms

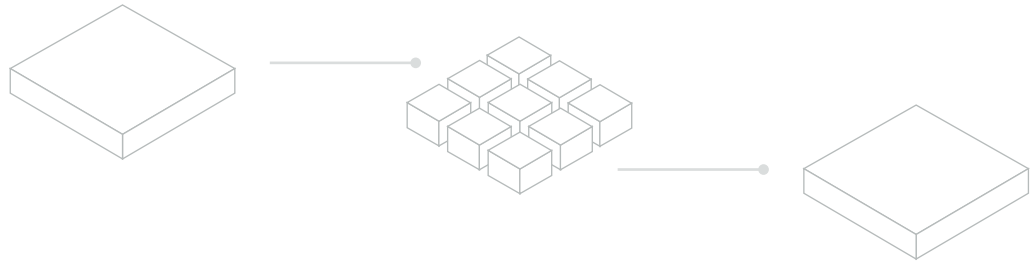
The main principle of building clean rooms from MatrixWall is their modularity and flexibility

> **Modularity**

all products have wide range of standard sizes and allow to satisfy all premises requirements such as height and other dimensions, considering equipment sizes

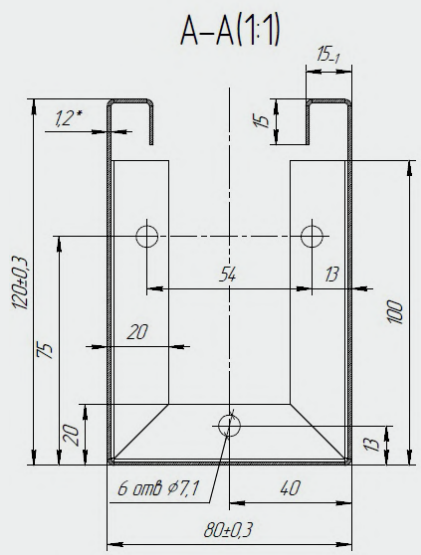
> **Flexibility**

the MatrixWall design allows for easy integration into clean rooms of socket groups for connecting equipment, points for technical gases sampling, injection and purified water, room's pressure cascade controlling, lighting touch switches with control system access, etc.



In case of work process you need to install additional points for consumers or replace damaged elements of the ceiling or walls, you can do it quickly and independently, without involving MatrixWall specialists

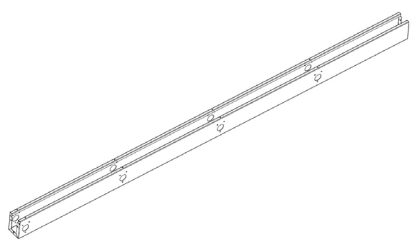
- the structure of MatrixWall cleanrooms is made entirely of metal and glass (not sandwich panels or gypsum boards)
- the load-bearing element in this structure is the ceiling, not the walls
- the paint coating of the wall elements can be done in RAL at the Customer's request or in the classic white color RAL 9016



Cleanroom ceiling

1.1 Ceiling grid guide profiles

Ceiling grid guide profiles system



Ceiling profile

Attaches to metal structures specially designed for clean room installations

or to the building concrete floor, distance between longitudinal profiles 1.20 m, maximum distance between ceiling profile hangers 2.40 m.

The entire system is suspended using specially shaped brackets with M12 threads and и HILTI system counter plates.

The guide profiles are made of galvanized sheet steel with a thickness of 1.2 mm, antistatic powder coating RAL 9016 with specially curved edges.

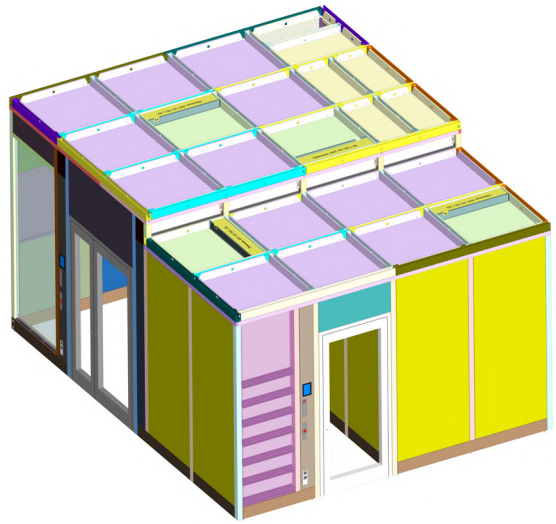
The profile is bent at the front edge to achieve a strong connection with the next profile.

A spacer is inserted between the joints of the profiles, which allows the joint to be sealed later. The ends of the profile are closed with an end cap.

The ceiling profile is assembled into a 1.2 x 1.2 m grid.

In case of building dimensions structural features, additional profiles of the required dimensions are manufactured along the edges of the premises.

The design allows you to assemble ceilings of different levels in one room.



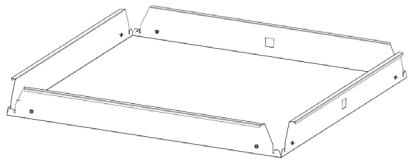
Ceiling grid and multi-level ceiling in one room

Ceiling panel (walkable)

Ceiling panel-hatch for maintenance

Ceiling panel lighting fixtures

1.2 Ceiling panel



Ceiling panel (solid)

Consists of bent sheet steel with a thickness of 1.0 mm. The coating has excellent mechanical and UV resistance. Color RAL 9016.

The ceiling solid panel is designed for gas- and dust-proof installation into the supporting grid structure in areas without lighting fixtures, sockets and air distributors.

1.3 Walkable ceiling panel

To maintain systems in the ceiling void, the ceiling panel is covered from above with a 1.2 mm thick galvanized steel panel, the panel is attached to the ceiling grid at the edges. It allows us to withstand a load of 150 kg/m^2.

1.4 Ceiling panel hatch

When the ceiling void is limited and it is impossible to maintain engineering nets, the ceiling panel can be replaced with a hatch in the required places, which is attached with magnets and safety suspensions on cables and opens from the clean room side if necessary.

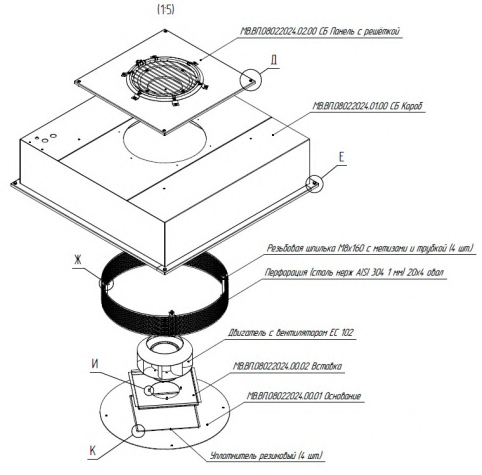
1.5 Ceiling panel lighting fixtures

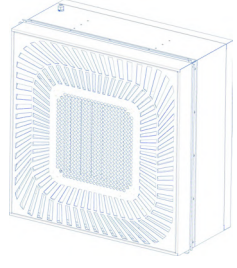
To install the lighting fixture, a cutout is made in the ceiling panel (at MatrixWall production). The panel with the lighting fixture includes:

- tempered glass 4mm thick, which is glued in at the MatrixWall production
- IP40 LED luminaire that is installed, connected and serviced from the ceiling void, not from the cleanroom side
- the ceiling panel is closed by a walkable panel, which prevents dust and water entering the lighting fixture

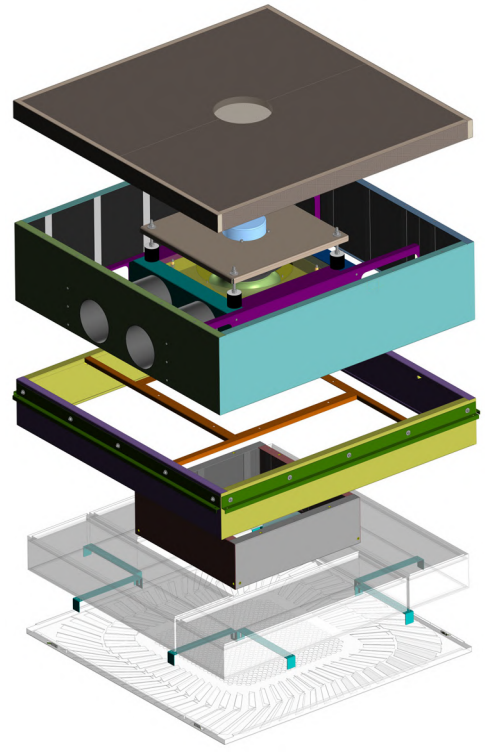
Fan filter unit (FFU)

Air supply units





Fan filter unit (FFU)



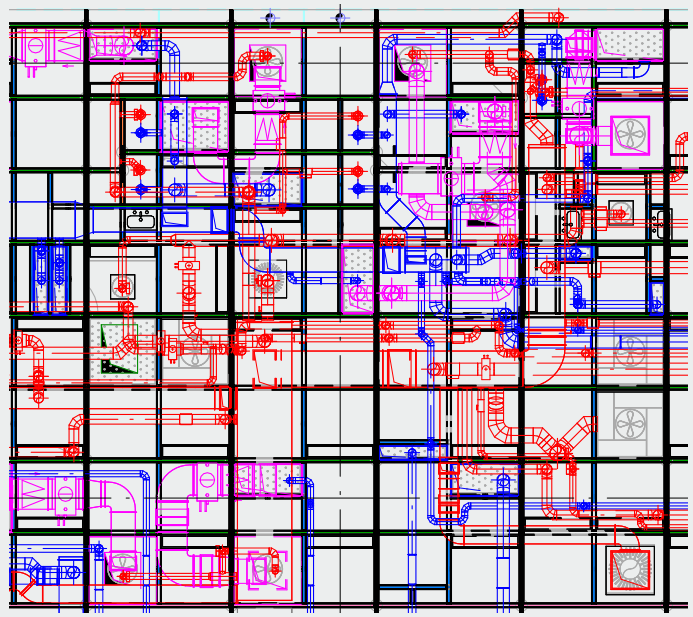
1.6 Air supply units

All necessary air supply units for inflow and exhaust ventilation such as fan filter units (FFU), HEPA-filters can be installed instead of ceiling panel and covered by grilles with air flow blades.

Fan filter units (FFU)
FFU housing is made of powder antistatic coated steel and a fan with EC motor.

HEPA filter housing H14.

An example of air distribution of the ventilation system in a microbiological laboratory ceiling panels grid



Modular wall system

The wall system
is a structure made of stainless steel columns and double-sided wall panels with a total thickness of 80 mm

The height of the walls always has a step of 180 mm according to clean room structures standard sizes table

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> MatrixWall can always offer you different room heights for your production needs from 2160 mm to 4860 mm with a step of 180 mm

Stainless steel columns
(wall posts) are installed at the points of the ceiling panel profile grid. The standard grid pitch is 1200 mm, however, other grid sizes with a pitch of 300 mm can be implemented

Main wall components are

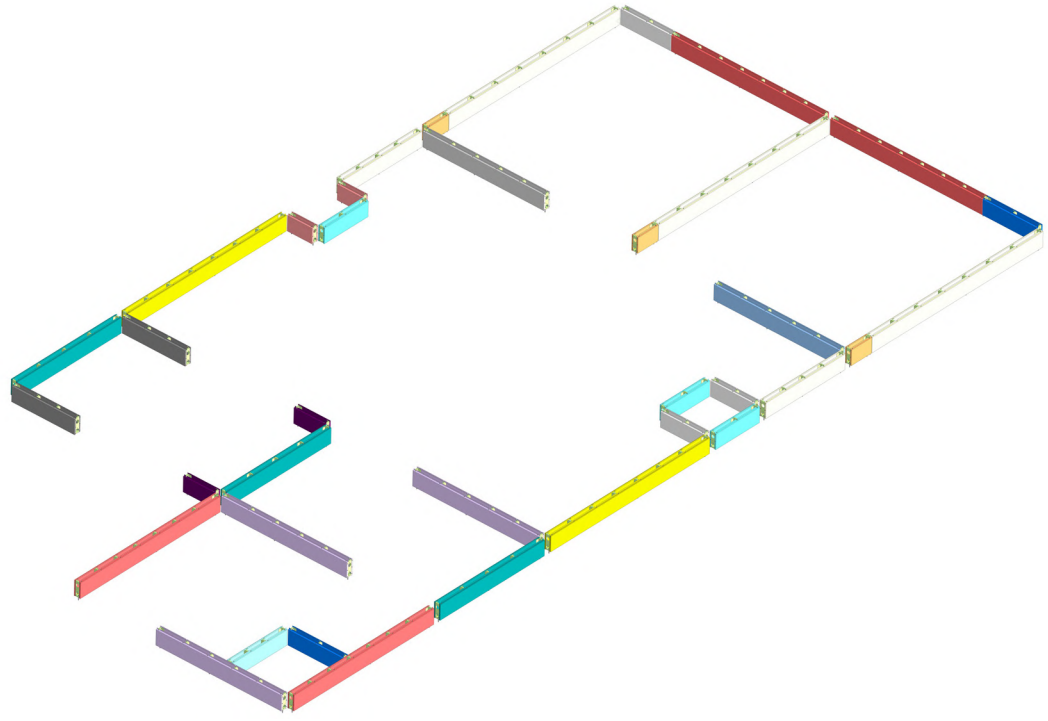
- Floor basebords
- Ceiling U-profile
- Wall posts
- Solid panels
- Glass partitions
- Doors

MatrixWall cleanrooms building concept
implies that the dimensions of all part radius, thickness and joints are calculated and produced in such way as to create a visual single plane of joints on the surfaces of walls and other elements.

The width of the joints is about 2-3 mm, which are filled with sealants and create a common single plane of the wall, without protruding elements.

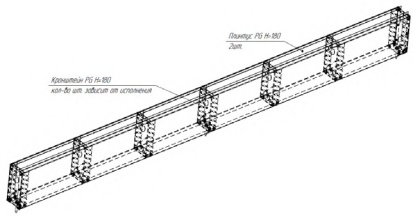
The floor and ceiling joint radius are about 5-7 mm.

Glass partition, wall post and floor baseboard



Floor baseboards placement layout

2.1 Floor basebords



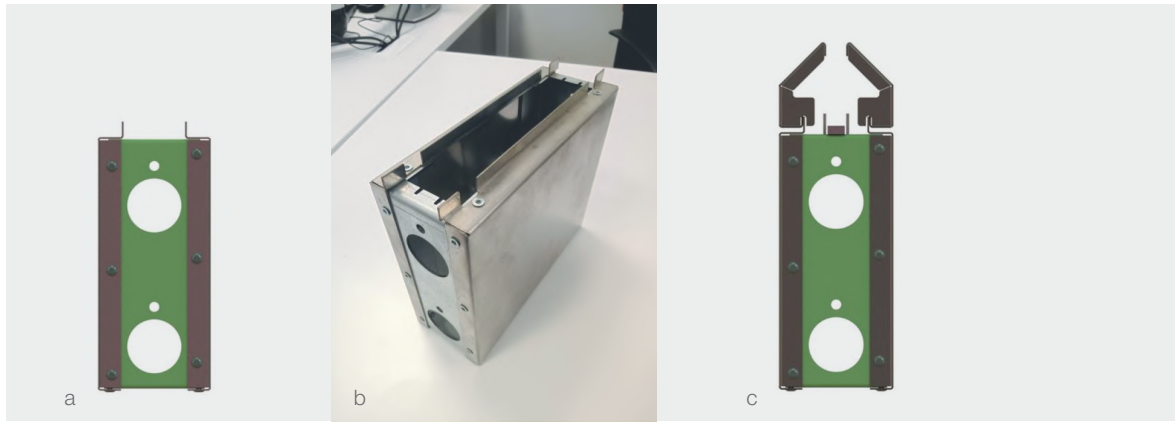
Floor baseboard

Floor baseboard, during the istallation, follows the room plans and the ceiling panel grid.

Floor baseboard is a universal supporting structure for the modular wall system (column, wall panel, glass partition).

Floor baseboard forms a connection between the modular wall system and the finished floor covering (epoxy or polyurethane coating, linoleum).

The structure is made of 1.2 mm stainless steel (AISI 304) with height 180 mm and width 80 mm, length from 240 mm to 2400 mm, in some cases up to 3000 mm (assembled with brackets made of 2 mm galvanized steel) and fixed mechanically to the floor using anchors.



Floor baseboard

a ceiling walls and post floor baseboard construction

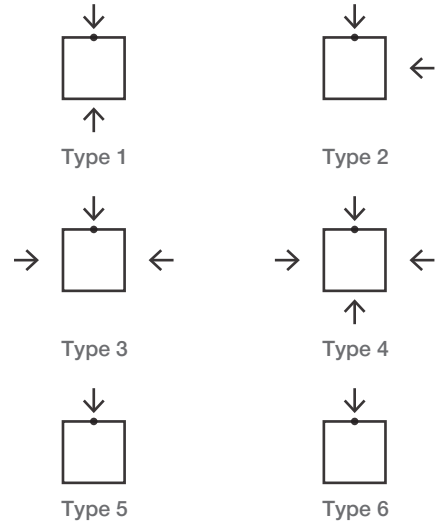
b floor baseboard construction

c glass partitions floor baseboard construction with additional elements

Solid dosage forms plant

The ceiling U-profile

Solid dosage forms plant



Type 1 Parallel connection
Type 2 Knee joint (gusset)
Type 3 T-joint
Type 4 Round connection
Type 5 Door connection
Type 6 Single joint

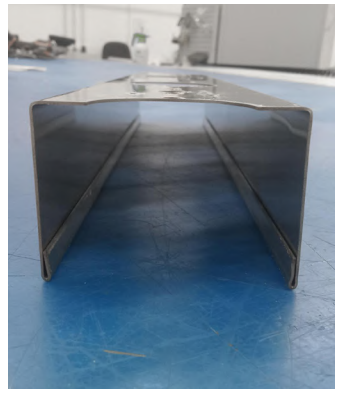
2.2 Ceiling U-profile

The ceiling U-profile forms a connection between wall panels and the ceiling.

The wall panel can fit about 30 mm into the ceiling U-profile, which allows to compensate for uneven floors and ceiling sagging due to load. Maximum compensation height ± 20 mm.

Made of 1.0 mm thick stainless steel.

The standard track length is 2400 mm (2 standard ceiling grid cells).



The ceiling U-profile

2.3 Wall posts

Wall post is a stainless steel square pipe 80 x 80 mm with a metal thickness of 1.5 mm with the necessary cutouts for fastening wall panels and ceiling profiles, which are performed on a laser cutting machine.

Post length depends on the height of the walls in the room.

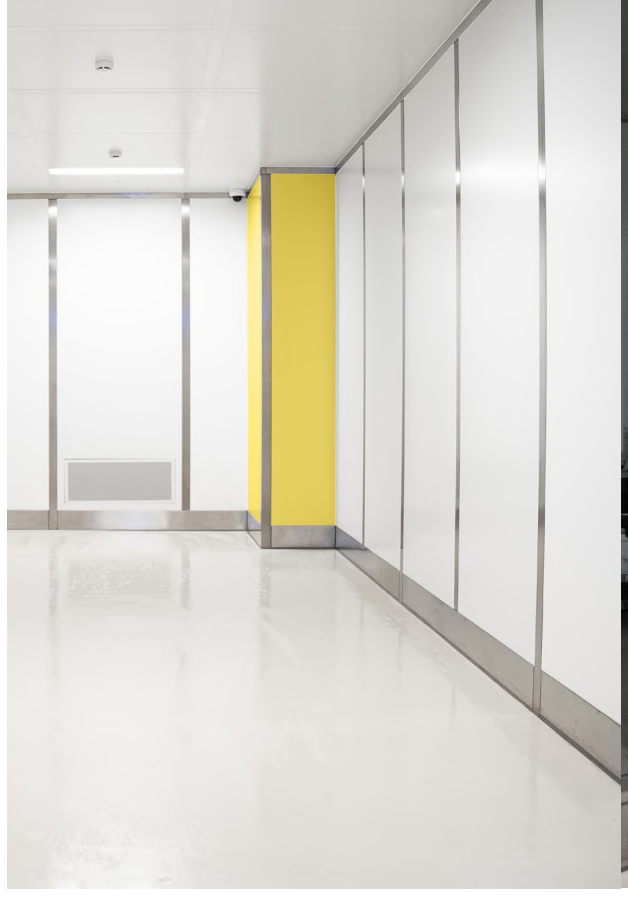
Wall posts are secured to the floor plates using the appropriate floor locking device.

Connection to the ceiling is achieved through a stainless steel ceiling U-profile.

The type of columns depends on the type of wall panel (metal or glass), and also from the method of fastening the wall panel to the column.

There are six different types of columns, allowing them to be used in a variety of cleanroom layouts.

Wall panels (solid) and wall posts



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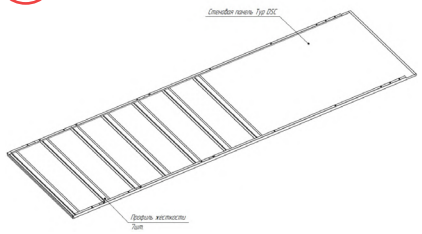
Glass partition across the entire height of the room

2.4 Wall panels (solid)



Wall panel (solid)

Wall panels are made of galvanized sheet metal with a thickness of 1.0 mm, painted on the front side with antistatic powder paint RAL 9016 or in another color at the customer's request.

Two wall panels attached to a wall post form a partition with 80 mm thickness and 1200 mm between posts.

Both panels (on both sides) can be used independently of each other. Installation / dismantling of wall panels is possible without the special tools using (having previously cut the silicone filling in the joints of the panels).

To give the panel rigidity, ribs are installed inside, which are made of bent sheet steel (galvanized steel with a material thickness of 1.0 mm).

Wall panels are always inserted flush between two wall posts, forming a single wall plane.

2.4 Wall panels (glass)

Glass partitions provide opportunities for more natural light in the premises and the ability to observe the operation of technological equipment and personnel without entering the premises.

The MatrixWall design allows for glass partitions to be installed in any location at the customer's request. Moreover, the height of the glass can be as the entire height of the wall and has no difference in its dimensions from solid wall panels. It looks beautiful. And this is a full glass wall, not a window.

Solid dosage forms plant

Wall media panel

Elements installed in media panels

2.5 Wall media panels

For installation of electrical sockets, internet sockets RJ-45, touch light switches, access control systems, emergency buttons, indoor climate control displays are used media panels with width 220 mm, which allow you to place all the necessary elements on 2 sides, all cables are hidden and routed between these panels.

The WFI water loop outlet is covered with wall panels

The metal column of the building in the corridor is covered with panels

Material airlock. All engineering nets above and below are covered with wall panels

2.6 Wall panels — framing of building structure elements and equipment

Modular and flexible MatrixWall design allows easy and beautiful covering of metal building columns, openings of process equipment, and material airlocks.

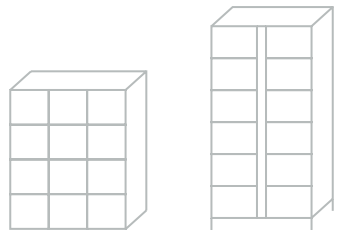
Fire cabinets

Fire cabinets are integrated into the wall of clean rooms and form a single plane of the wall

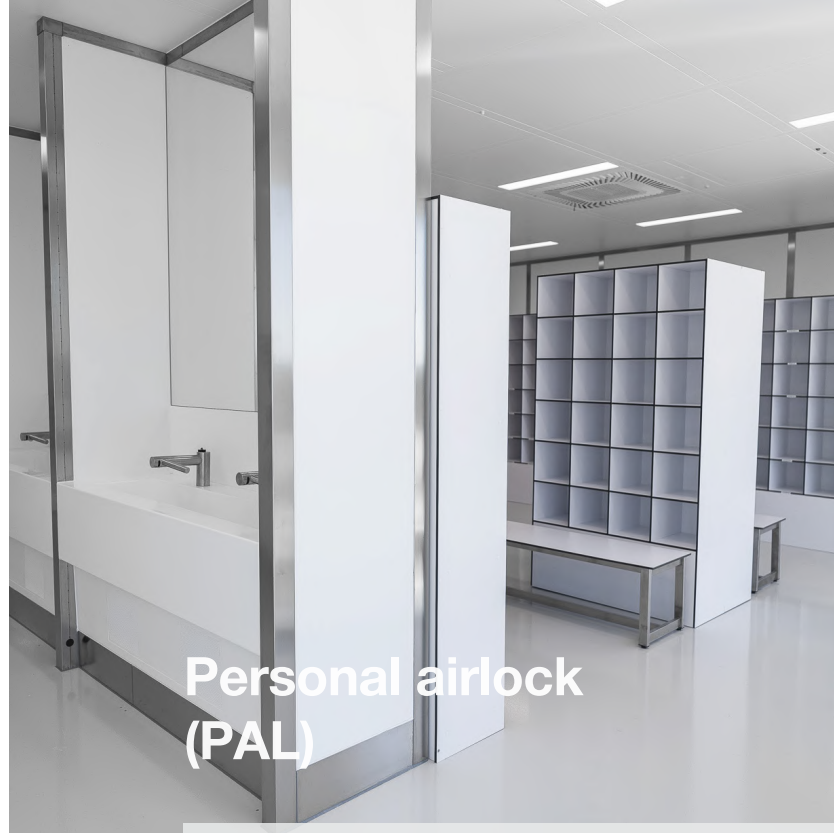
All fire-fighting equipment is easily integrated into MitrixWall cleanroom panels

The cabinets are made of stainless steel in sizes that match the pitch of the wall posts for the wall panels

Personal airlock.
Lockers for changing clothes



Lockers are made of modern HPL panels and are easy to process



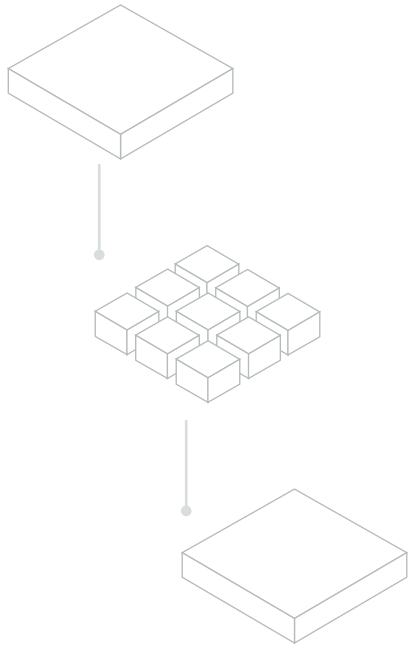
Personal airlock (PAL)

Personal airlock with sinks

The MatrixWall modular system is used to install furniture for personal airlocks, sinks and showers, which are made by executive order after assembly and are an integral part of the clean room structure

MatrixWall
Production site

- up to date production site
- modern equipment
- in-house design department



Metal laser cutting unit

cutting area: 2000 x 6000 mm,
thickness: up to 6 mm

Welding works

- **laser welding**
- **argon welding**

thickness of welded material:
steel 6 mm, stainless steel 5 mm

Punching press

> perforation and cold stamping

processing area: 1500 x 4000+ mm,
thickness: steel 6 mm, stainless steel 3 mm

Electromechanical panel bender

> panel bending

bending length: 4100 mm,
thickness: steel 2.5 mm,
stainless steel 1.5 mm

Hydraulic press

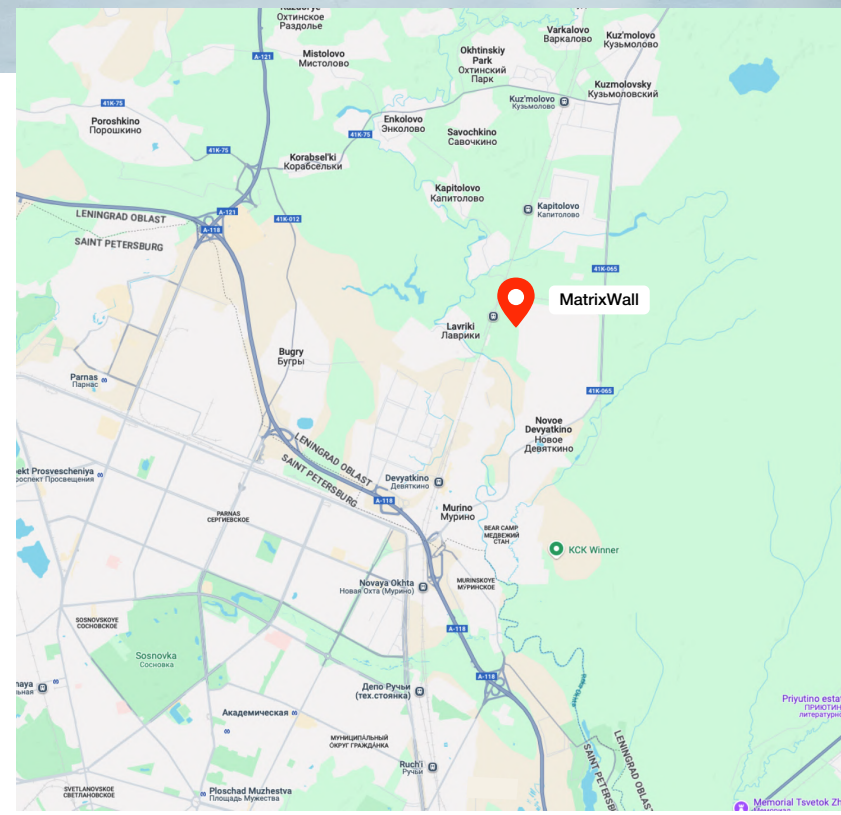
> metal bending

bending length: 3050 mm,
thickness: up to 6 mm

We are located at the address

Saint Petersburg
Promyshlennaya street 32

Google Maps



matrix wall

MatrixWall LLC

phone: +7 812 385 47 85
info@matrixwall.ru

Saint Petersburg

Promyshlennaya street 32

Industrial territory of Novoye Devyatkino village, Novodevyatkinskoye rural settlement, Vsevolozhsk municipal district, Leningrad region

matrixwall.ru