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PARETI MOBILI E CONTROSOFFITTI PER CLEANROOMS
 PARTITION WALLS AND FALSE CEILINGS FOR CLEANROOMS

HISTORY, MANUFACTURING AND QUALITY

PADANA CLEANROOM designs, manufactures, and installs modular partition walls and modular False Ceilings and Walkable Ceilings for the construction and implementation of cleanroom and controlled environmental spaces for the **Pharmaceutical, Electronic, Cosmetic and Food Industries** as well as **Research Laboratories**.

With the many years of experience delivered by **PADANA CLEANROOM** engineers, project managers and technicians, the highest level of Quality by Design can be expected in compliance with cGMP and FDA guidelines as well as ASTM and BOCA codes.

PADANA CLEANROOM was established in 1979 and has offices and a 32,000 square feet state of the art manufacturing space near Cremona, Italy about 50 miles from Milan. All of the design and production processes for partitions, ceilings and accessories is carried out in their own facility by highly qualified and trained personnel. The site assembly work is completed by specialized technicians, which always guarantees a rapid and high quality product installation. These factors provide an extremely low cost of ownership and long facility service life for each of our clients.

PADANA CLEANROOM has achieved the **Quality Management System BS EN ISO 9001:2000** applicable to design, production, and installation of partitions, ceilings and accessories for Cleanrooms as assessed and registered by **National Quality Assurance**.



Certificate # 19083

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PROJECT DETAILS AND DOCUMENTATION

PADANA CLEANROOM projects are not only successful because of their unique designs and high quality products but also due to the level of documentation which is submitted to the Client from conceptual design through to as built drawings; these detailed drawings contain all of the dimensions and views in 3D in order to verify the concept matches construction.

Working with the client or engineering firm, the plans and the views of cleanroom should clearly define:

Architectural Features: movable walls, false ceiling, as well as the positioning of all accessories such as lighting fixtures, furnishings, pass-through boxes, equipment storage, and locker rooms located in the classified spaces.

Electrical Utilities: interlock systems for doors, and optical indication for doors status; switches and outlets as well specialized lighting and equipment details located in the classified spaces.

Mechanical and HVAC: Location of transfer panels, wall penetrations, eye wash, shower and all built in supply and return air plenums located in the classified spaces.

The project is managed by SPS CleanTech and Padana Cleanroom from start to finish

Prior to the completion of the project, a technical manual including all of the drawings and the installed materials certificates is delivered. If required, an IO/IQ protocol draft for the materials manufactured by **PADANA CLEANROOM** can be submitted as well.



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WALL MATERIALS AND CONSTRUCTION

The movable walls are constructed using self-supporting modular panels with an external covering suitable for the pharmaceutical manufacturing and controlled contamination environments. The external covering of the modular panels is chosen according to the process consideration in the cleanroom and the basic requirements for the cleaning and sanitization procedures; the following external finishing are readily available:

- ✚ High Pressure Laminate (HPL)
- ✚ UPVC or PVDF coated Steel or Aluminium
- ✚ 304 Polished Stainless Steel
- ✚ Double Safety Glass Floor to Ceiling Panels



The manufacturing of the panels utilizes PADANA's standard aluminium profiles designed for strength and durability; the resulting joints are sealed with silicone in order to guarantee coplanar surfaces. The angular fittings between wall and wall, wall and false ceiling, wall and floor are achieved using round aluminium profiles which permit an easily maintained and very clean integration with false ceilings and floor covering. The "movable concept" design permits the disassembling of only one panel without dismantling the entire installation.

The thickness of the standard **PADANA CLEANROOM** panels is 48 mm; this thickness permits the integration of enclosed electrical housings and conduit for switches and sockets, optical indicators for doors status, coplanar return air grilles and inspection removable panels for the passage of utilities.




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The internal materials of the partition or movable walls can be supplied according the Client's requirements as well as compliant to FM, corporate standards or local ordinances; the following materials are available:

-  High density polystyrene
-  High density rock wool
-  Honeycomb aluminium

MODULAR CLEANROOM DOORS & WINDOWS

DOOR SYSTEMS: The single buck door designs as well as two wing doors are suitable for the pharmaceutical environments and are coplanar to the movable walls having a similar construction structure; doors and jambs profiles are achieved with radiussed aluminium profiles (natural color or RAL coated). The doors can be equipped with push-knob or handles, closing magnet system, door closing systems, etc. Automatic operation of the doors is available on request. The door jamb profiles can be supplied with or without gaskets and enclosures which encase sliding/opening mechanisms.



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WINDOW SYSTEMS: on movable walls have been designed to be coplanar to the panels, sealed with silicone on their perimeter and constructed with double safety panes on each side. The thickness is the same as the panels: 48 mm. The two panes are installed and sealed on a micro-perforated profile with hygroscopic salts inside to adsorb the residual inner humidity. The angles can be radiused or square according to the design requested. A wide choice of sizes are available as standard.



GLASS WALLS & DOORS

In the installation where full visibility of the internal operation is desired, **PADANA CLEANROOM** has supplied fully glazed cleanroom partitions and door systems.

The glazed walls are constructed using self-standing modular panels with lower and upper compensation panels to enhance the strength of the system. The assembly of the panels is carried out using solids fittings with aluminium profiles which surround the glass panels; the resulting joints are sealed with silicone in order to guarantee coplanar surfaces.

The glazed partition panels, with a thickness of 48 mm are totally constructed in our factory using two tempered glass panes each of them 3mm thick. The internal aluminium channel permits the location of hygroscopic bars to adsorb the residual humidity and avoid shadows within the panels.

The angular fittings between wall and wall, wall and false ceiling, wall and floor are manufactured using round aluminium profiles which permits a perfectly smooth and cleanable integration with ceilings and floor coverings. The movable concept design permits the disassembly of one panel only without dismantling the entire installation.



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DOORS & WINDOWS FOR EXISTING OR EXTERIOR WALLS

Where the cleanroom is required to integrate existing construction such as drywall/gypsum or masonry walls, **PADANA CLEANROOM** can propose a high pharmaceutical grade finishing for doors and windows for this special application.

DOOR SYSTEMS for installation in existing WALLS or EXTERIOR construction have been designed to suit almost every need; they have the same features and characteristics as the standard interior door offering. For exterior door applications, PADANA has designed a special and adjustable aluminium radiused jamb system which permits a smooth and clean integration with existing construction.

Doors may be:

- ✚ One leaf
- ✚ 1 and ½ or two leaves
- ✚ 1 or 2 wing sliding types

External surface finishes of the door panels can be the same as the proposed finishes for the interior walls as well as use the same core filling.



WINDOW SYSTEMS for EXTERIOR or EXISTING walls are constructed with safety panes mounted on a rigid frame; the thickness of the windows is identical to the wall thickness and the installation is perfectly coplanar to the walls. They can have square or radiused angles. Internal spacers are available with different colors as well.

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WALK-ON & MODULAR CLEANROOM CEILINGS

Walk-On Ceilings:

All walk-on ceilings are constructed using modular panels with an external covering suitable for the specified sterile and controlled environments. The external covering of the panels is chosen according to the process and/or customer specification. The customers Cleaning and Sanitization requirements are also considered.

The assembly of the ceiling panels utilizes solid fittings and precise aluminium profiles; the resulting joints are sealed with silicone in order to guarantee a coplanar surface. The steel suspension system tie rods are designed for a standard distributed load of 25 lbs/sq.ft. and are enclosed within the panel frame. The angular fittings between wall and false ceiling are achieved using round aluminium profiles which permits a perfect integration. The thickness of the **PADANA CLEANROOM** ceiling panels is 48 mm.

All Filtration and Lighting openings will be integrated provided they are specified and accepted by Padana and the customer.



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Modular Cleanroom Ceilings:

The Pharmaceutical modular ceiling is proposed with an anodised aluminium frame (natural color or painted) having inter axis 600 x 600 mm or 1200 x 600 mm (other inter axis dimensions are available according to the diffuser or filters sizes). The following finishes for the closure panels are available:

-  High pressure laminate
-  PVDF roll or UPVC coated steel sheets
-  Aluminium coated sheets
-  Stainless Steel 304 sheets

The closure panels are secured to the frame and then sealed with silicone to guarantee the normal gradient overpressure typical in a cleanroom. The modular false ceiling enables the installation of the filters and lighting fixtures, which can be interchangeable between them and between the closure panels without modifying the inter axis frame.

A dedicated round aluminium profile with a different radius enables a perfect and smooth joint between the modular ceiling and movable walls.



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GOWNING, LOCKER ROOM AND STORAGE FIT OUTS

Gowning and Locker Room Area

PADANA CLEANROOM has designed a wide range of integrated furnishings for cleanroom GMP gowning areas such as lockers, ventilated lockers with single or double doors (2 way gowning rooms), and lockers with sliding doors, open shelves for dress and cleanroom garments, shoe barriers. All lockers and related ancillary furnishings are constructed using HPL melamine and an aluminium frame without the use of particle board or other non GMP materials.

Materials Pass Box and Personnel Entry

The **Pass-Box and Materials/Personnel Entry** points are designed by **PADANA CLEANROOM** and integrated in the cleanroom layout optimizing the space available and enabling an easy circulation of materials and personnel. The access doors have round profiles for easy cleaning. The internal vane can be manufactured using stainless steel or melamine; the following options are available: ventilation system provided with HEPA filters and programmable logic system, U.V. lamps (for materials only), interlocking system provided with optical indicator of door status. For easy maintenance, dedicated removable panels are available.



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Handwasher/dryer units

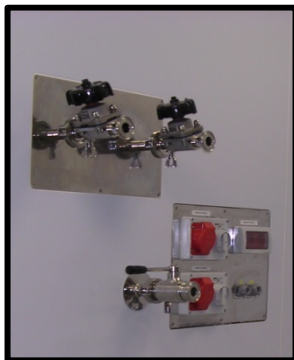
The **Wallgate STERIWASH** handwasher/dryer unit with optional sterilizing waste trap offers the complete solution for the ultimate hygiene applications. The unit has an unrivalled specification and a range of optional extras to customize the product to suit the application and hygiene level. The unit replaces sinks, traps, water heaters, soap dispenser, hand driers or paper towels and back splash tiling virtually eliminating all associated expensive on-site cleaning and validation. The units can be easily installed in a coplanar way on **PADANA CLEANROOM** partition walls.



Other accessories & ancillaries

In order to complete the cleanroom the following accessories are readily available:

- ✚ Interlock systems for doors
- ✚ Optical indicators for door status
- ✚ Telephone and Intercom systems
- ✚ Glass breakout panels
- ✚ Lighting fixtures for sterile and controlled contamination environments
- ✚ Stainless steel or aluminium coplanar air return grilles
- ✚ Removable Utilities panels
- ✚ Integrated Return and Supply Air Plenums
- ✚ Flush or Clean Mounted electrical switches and receptacles (low and high voltage)
- ✚ Door automation systems



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