

CT-technologies APS

CTT-cleanrooms



The obvious partner for your project

Table of Contents

Page

- CT-CLEANROOMS PRESENTATION 4
- PROJECT AND DOCUMENTATION 4
- HPL MELAMINE & METAL PARTITION WALLS 5
 - DOORS..... 6
 - WINDOWS..... 6
 - GLASS WALLS & DOORS 6
- DOORS & WINDOWS ON DRY WALLS OR BRICK WALLS 7
 - DOORS 7
 - WINDOWS 7
- WALK-ON & MODULAR CEILINGS 8
 - WALK-ON CEILINGS 8
 - MODULAR FALSE CEILING 9
- FURNISHING & ACCESSORIES 10
 - GOWNING AREA FURNISHING..... 10
 - PASS BOX AND MATERIALS/PERSONNEL SAS..... 10
 - HANDWASHER/DRYER UNITS 11
 - OTHER ACCESSORIES & AND ANCILLARIES 11
- ADVANTAGES OF COOPERATION WITH CT-TECHNOLOGIES 12

CT-CLEANROOMS PRESENTATION

CT-CLEANROOMS designs, manufactures and installs movable partition walls and modular false ceilings for the creation of sterile and controlled contamination environments for the Pharmaceutical, Electronic, Cosmetic and Food Industries as well as Research Laboratories.

The many years experiences of **CT-CLEANROOMS** engineers and technicians in these fields always guarantees the high level of quality of the final product in compliance with cGMP and FDA rules.

CT-CLEANROOMS are produced in a 3000 m2 factory in Italy dedicated at manufacturing cleanrooms and ISO certified.

All of the production processes for movable partitions, false ceiling and accessories is carried out in a own factory by highly qualified personnel. The assembly activity is carried out by specialized technicians, which always guarantees a rapid and high quality installation as well as a skilled after-sales service.

PROJECT AND DOCUMENTATION

The **CT-CLEANROOMS** project activity is appreciated for the high level of documentation which is submitted to the Client for the approval of the construction drawings; the drawings contain all of the dimensions in order to verify their accuracy following the site survey.

The plans and the views of cleanroom, define movable walls, false ceiling, as well as the positioning of all accessories such as lighting fixtures, furnishings, pass-box, return air shaft, interlocking for doors, optical indication for doors status, electrical arrangements for switches and sockets, etc. The project activity is carefully carried out by the engineers until the issuing of the "construction drawings" and the final "as built "drawings.

At the end of the manufacturing and installation, a technical manual including all of the drawings and the installed materials certificates is released. If required, an IOQ protocol draft for the materials manufactured by **CT-CLEANROOMS** can be submitted



HPL MELAMINE & METAL PARTITION WALLS

The movable walls are constructed using self-standing modular panels with external covering suitable for the sterile and controlled contamination environments. The external covering of the modular panels is chosen according to the process to be carry out in the cleanroom and the basic requirements for the cleaning and sanitization procedures; as an example the following external finishing are readily available:

- ▶ High pressure laminate
- ▶ PVDF roll coated steel sheets
- ▶ PVC coated steel sheets
- ▶ Aluminium coated sheets
- ▶ Stainless Steel 304 sheets

The assembly of the panels is carried out using solids fittings with aluminum profiles of special design; 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 aluminum profiles which permit a perfect integration with false ceiling and floor covering. The movable concept design permits the disassembling of only one panel without dismantling the entire installation.



The thickness of the **CT-CLEANROOMS** panels is 48 mm; this thickness permits the integration of enclosed electrical arrangements for switches and sockets, optical indicators for doors status, coplanar return air grilles and inspection removable panels for the passage of utilities.

The filling of the movable walls can be supplied according the Client's requirements and the required compliance to FM or other rules; the following fillings are readily available:

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

DOORS

The one and two wing doors suitable for the pharmaceutical environments have been designed to be coplanar to the movable walls having a similar construction structure; doors and jambs profiles are achieved with rounded aluminum 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 offered on request. The door profiles can be supplied with or without gaskets.

The one or two wing sliding doors, without floor rail, are also constructed similar to the movable walls and have an upper special sloped cladding which holds and encloses the sliding mechanism; automation is offered on request.



WINDOWS

The windows 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 rounded 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 required, **CT-CLEANROOMS** proposes a fully glazed cleanroom partition and door system.

The glazed walls are constructed using self-standing modular panels with lower and upper compensation panels advisable to enhance the strengthening of the whole system. The assembly of the panels is carried out using solids fittings with aluminum 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 stratified glass panes each of them 3+3mm. The internal aluminum 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 aluminum profiles which permits a perfect integration with

DOORS & WINDOWS ON DRY WALLS OR BRICK WALLS

Where the cleanroom is constructed with rigid walls such as Dry walls or Brick walls **CT-CLEANROOMS** can propose a high pharmaceutical grade finishing for doors and windows for this special application.

Doors

Doors for installation in dry walls or brick walls have been designed to suit almost every need; they have the same main characteristics as the doors suitable for movable partition and in addition they have a special and adjustable aluminum rounded jamb which permits a perfect joint with the dry walls or brick walls and fits with every application in terms of wall thickness.

Doors may be:

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

External finishing of the door panels can be the same as the proposed finishing for the partition walls with the same alternative for the core filling.



Windows

The windows on dry walls or brick 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 rounded angles. Internal spacers are available with different colors.

WALK-ON & MODULAR CEILINGS

WALK-ON CEILINGS

The walk-on ceilings are constructed using modular panels with external covering suitable for the sterile and controlled contamination environments. The external covering of the modular panels is chosen according to the process to be carried out in the cleanroom and the basic requirements for the cleaning and sanitization procedures; the following external finish are readily available:

- ▶ High pressure laminate
- ▶ PVDF roll coated steel sheets
- ▶ PVC coated steel sheets
- ▶ Aluminum coated sheets
- ▶ Stainless Steel 304 sheets

The assembly of the ceiling panels is carried out using solids fittings; the resulting joints are sealed with silicone in order to guarantee a coplanar surface. The steel suspension system tie rods designed for a standard distributed load of 120 kg/m² are enclosed within the panel frame. The angular fittings between wall and false ceiling are achieved using round aluminum profiles which permits a perfect integration. The thickness of the **CT-CLEANROOMS** ceiling panels is 48 mm.

The panels ceiling is ideal where under pressure of the rooms is indicated in the engineering phase.

Filter and lighting openings have to be anticipated according to the cleanroom requirements and they should preferably be agreed during the engineering phase to ensure perfect integration of the items.

The filling of the ceiling panels can be specified according the Client's requirements and the required compliance to FM or other rules; the following fillings are readily available:

- ▶ High density polystyrene
- ▶ High density rock wool
- ▶ Honeycomb aluminum



Modular false ceiling

The sterile modular false ceiling is proposed with an anodized aluminum 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 finishing for closure panels are available:

- ▶ High pressure laminate
- ▶ PVDF roll coated steel sheets
- ▶ PVC coated steel sheets
- ▶ Aluminum 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 of the 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 aluminum profile with a different radius enables a perfect and smooth joint between the modular ceiling and movable walls.



FURNISHING & ACCESSORIES

Gowning area furnishing

CT-CLEANROOMS has designed a wide range of integrated furnishings for cleanroom dressing areas such as lockers, ventilated lockers with single or double doors (2 way gowning rooms), lockers with sliding doors, open shelves for clean dress and garments, shoe barriers. These proposed lockers and relevant ancillaries are constructed using HPL melamine and an aluminum frame without the use of chipboard (no wood or similar is used).



Pass Box and Materials/Personnel SAS

The **Pass-Box and Materials/Personnel SAS** designed by **CT-CLEANROOMS** are integrated in the cleanroom lay-out 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; following options are available: Ventilation system provided with absolute 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.



Hand washer/dryer units

The Wallgate STERIWASH hand washer/dryer unit with optional sterilizing waste trap offers the complete solution for high 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, taps, water heaters, soap dispenser, hand driers or paper towels and splash-back tiling virtually eliminating associated expensive on-site labour.

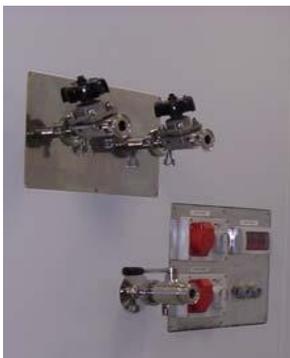
The units can be easily installed in a coplanar way on **CT-CLEANROOMS** movable walls.



Other accessories & ancillaries

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

- ▶ Interlocking system for doors
- ▶ Optical indicators for door status
- ▶ Telephone and interphone system
- ▶ Glass breakout panels
- ▶ Lighting fixtures for sterile and controlled contamination environments
- ▶ Stainless steel or aluminum coplanar air return grilles
- ▶ Utilities removable panels
- ▶ Air shaft vane for return air
- ▶ Arrangements for switches and sockets (low and high voltage)
- ▶ Door automation systems



ADVANTAGES OF COOPERATING WITH CT-TECHNOLOGIES

- ▶ **One supplier of the entire package of materials for insulation**, who bears the responsibility for the entire supply. This is an advantage compared to work with several different supplies, which often cannot guarantee material selection specifically for your project and supply all installation accessories.
- ▶ Many years of experience with the leading European producers ensures that **CT-technologies can offer competitive prices** taking the high quality of materials into account.
- ▶ **Quality of supplied materials is the base of our business**. We cooperate only with producers known to us for many years and used for many.
- ▶ CT-technologies' **experienced employees**, comprising engineers, project managers, logistics managers, supervisors and installation workers are your guarantee in respect of design supply and installation of your project.
- ▶ **Unique knowledge of insulation and 30-years of experience** in technically demanding projects within the food and storage industry. Choosing CT-technologies, you work with a professional partner which ensures quality of performance.

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