FTS Lifecare

CLEANROOM MODULAR

Modular cleanroom, biocleanroom, HVAC & internal infrastructure.

FTS modular cleanroom panel systems are the preferred alternative across industries due to their intrinsic versatility. They are custom-made for your cleanroom projects, pre-engineered, and pre-fabricated to eliminate any additional cutting or grinding during installation. They are comparatively inexpensive to reconfigure or modify and give you superior control over airflow, pressure, temperature, humidity and filtration. You are guaranteed a custom clean environment at a fraction of the cost and time associated with a conventional cleanroom. Our cleanroom systems include wall panels, walkable and non-walkable ceiling panels, risers, doors, view panels and covings.

- Energy efficient cleanrooms, manufactured to cGMP standards using scratch-resistant materials
- Custom horizontal or vertical air handling units – perfect for space restrictions
- Modular construction, walk-in units for ease of maintenance

QUALITATIVE EXCELLENCE

FTS Cleanrooms is the leading Pre-engineered, Pre-fabricated modular panels and cleanroom equipment manufacturer in India. Craftsmen of fabrication with an innovative culture is the hallmark of FTS.

At FTS the key thrust areas are R&D, latest technology, quality control and qualitative human resources. Our top-notch team of engineers, pharmaceutical experts and technicians bring their core competence to the table to accomplish a task, from start to finish, leaving nothing to chance. A pool of technical experts from leading national and multinational corporations contribute in creating a rich and varied team of Pharmaceutical Engineers.

Our production facilities offer accurate and automatic fabrication equipment along with a well co-ordinated work force of highly skilled technicians to manufacture pre-engineered & prefabricated modular panels for cleanroom applications.

THE FTS ADVANTAGES

Having worked with major international consultants on our overseas projects, we are well versed with almost all the requirements of US FDA, MCA UK, TGA, WHO and other international regulatory bodies. Our in-house design facility for sterile / bio assay air conditioning system helps us focus on minute and critical aspects, thereby reducing hassles of multi-agency coordination. We are single source solution for modular panels, clean rooms equipment terminal housing boxes and HEPA/ ULPA filters that also makes us proudly accountable to you as a single nodal agency.

In-house team of Pharmacists, Engineers and Technicians exposed to well-known national and multinational Pharmaceutical companies like Ranbaxy, Novartis, Glaxo & Smith Kline Beecham thus giving us formidable multilateral skills of Pharma Engineering.

Our offices in the India, Algeria, Egypt, Jordan, Nigeria, Saudi, UAE, UK & Jordan gives us the necessary international exposure and knowledge about the latest technical developments abroad in this field. Having executed sterile & clean air-conditioning systems in the international market, our system design encompasses the entire project purview including the modular system.

ROLE OF MODULAR PANELS IN PHARMA FACILITIES

General Requirements:

A cleanroom requires a higher standard of construction than many other buildings. Construction materials used to

A cleanroom should be built as an airtight structure.

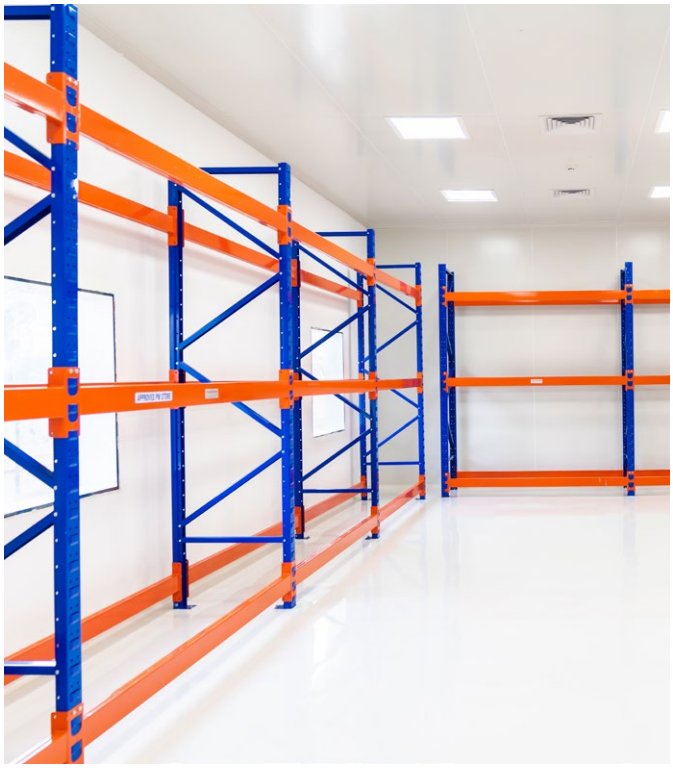
Some process chemicals, cleaning agents, disinfectants and water may attack or penetrate conventional finishes.

The internal surface finish should be smooth and suitable for cleaning.

In some cleanrooms, electro-dissipative construction materials will be required.

The internal surface finish should be sufficiently tough to resist any scratch, indentations, chipping or powdering when impacted or abraded.

In some cleanrooms, construction materials should be accurate.



Cleanrooms are maintained at positive pressure with respect to adjacent areas. If the quality of construction is poor and the joints are not well sealed, then the structure may have major leakages. It may then be necessary to pressurize the room by excessive amount of 'make up' outside air. It is not good economic sense practice to waste air that has to be expensively filtered and air-conditioned. Attempting to seal up the structure during the 'snagging' part of the construction will not be as successful as making it airtight during construction. Containment moms that are maintained at a negative pressure must be airtight, as dirty unfiltered air will be drawn into the room through cracks, crevices, joints and at service penetration points.

We can also provide intermediate clean corridor to eliminate all possibility of unfiltered air ingress (in-filtration). The materials that are used for the construction of cleanrooms should be smooth on the surface facing the inside of the cleanroom. There should not be any pores, roughness, waviness etc. that will retain contaminants. The surface should be free from ledges and easily wiped free of any contaminants that are deposited. The butts and joints, as seen from the inside of the cleanroom, should not show openings that may harbour and then disperse dirt.

The surface finish in cleanrooms must not break up easily and disperse chips or flake / shed particles from construction material.

ADVANTAGES OF FTS MODULAR PANELS

- Thin and light weight construction
- Ease and speed of fabrication and erection
- Gives better elegant aesthetics
- Factory quality control during pre-fabrication
- Wide variety of form and surface material
- Versatile use of various materials as per process requirements
- Doors compatible with panel materials
- Excellent insulating property
- Lower cost and flexibility which allows for future changes
- In modular type of clean rooms shifting of location at much lower cost is possible compared to structural type
- Smooth and easy to clean
- Coving becomes/ appears to be integral part of panels

- No hassles of cracks filling and re-painting i.e. maintenance free without any recurring expenditure
- No protruding surfaces on which dust or other contaminants can settle
- Class 1000 & better (ISO 6 & better) can be easily achieved which may not be possible in structural type of clean rooms without false ceiling
- The simplest panel design in the world hence near zero-dependency on suppliers for **FTS** in the near future, if panels are to be relocated or dismantled.
- Density 40±2Kg/M3 polyurethane PUF insulation and non CFC, hence, environment-friendly
- Less joints as compared to any other system of panel design.
- Design engineering and installation support from Monard, a French professional earlier involved with the development of modular panels with a top European Company.
- **FTS** systems are perfectly airtight, hence no problem in pressure balancing & cross contamination
- All validation documents are provided as per NEBB guidelines/standards
- **FTS** modular panels can be individually 'DOP'

SPECIFICATION OF FTS MODULAR PANEL

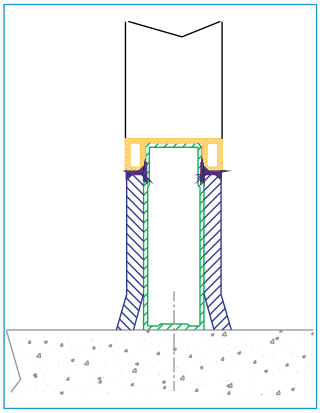
PROVERZ PANEL RANGE

Specifications	PROVERZ

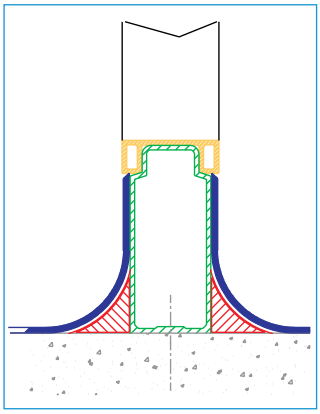
MODULAR DOUBLE WALL PANELS

MOC	
Skin	GPSP PCGI/PCGI, PPGI/PPGI, PCGI/SS, PPGI/SS, SS/SS
	GI
Structural framework installation	PUF (40±2 kg/m^3)/ ROCKWOOL (96 kg/m^3)
Connecting profile	extruded H type aluminum profile/ box type PVC profile
Base profile sealant	Box profile GI Silicon
DIMENSIONS	
Width	985/1185 mm
Height (max)	4000 mm
Panel thickness for PCGI	50 mm/80 mm/100mm/150
Coating thickness for PCGI	60 to 80 micron
FINISH	
SS PPGI/PCGI	Matt finish or as per sample

Ceramic Plinth



PVC floor finish



WALKABLE FALSE CEILING

MOC	
Skin	GPSP PCGI/PCGI, PPGI/PPGI, PCGI/SS, PPGI/SS, SS/SS
	GI
Structural framework installation	PUF (40±2 kg/m^3)/ ROCKWOOL (140kg/m^3)
Connecting profile	extruded H type alluminum
Sealant	profile silicon from within
DIMENSIONS	
Width	985/1185 mm
Height (max)	3000 mm
Panel thickness for PCGI	PUF (50 mm)/ ROCKWOOL (80 MM)
Coating thickness for PCGI	60 to 80 micro
FINISH	
SS PPGI/PCGI	Matt finish or as per sample 250 kg/m3 distributed load wall panels and suspension rods can be made as per requirement

PERFORMANCE CHARACTERISTIC - FTS COMLIANCE

FIRE RATING

STD Panel-Non Optional - MO or M1

IMPACT RESISTANCE

The panel should a lateral shock of 240 joules without deformation and de-stabilization of the partition.

AIR TIGHTNESS

System should comply with the following pressure drop values.

Specifications	PROVERZ
1.25	*0.35*
2.5	*0.65*
3.75	*0.9*

MECHANICAL

Indentation - 6mm as per ISO 1520
Strong enough to support a hanging load of 200 kg/ lm

ACOUSTICAL

In accordance with ISO standards and to achieve a minimum sound reduction of

RW 46 dB for Solid panels
RW 46 dB for Glazed panels
RW 46 dB for Solid panels

SURFACE RESISTIVITY

It should not be more than 1012 ohm sq. This property is important to avoid static build - up during wall cleaningand wipe down procedures. Which may otherwise attract back the dust particles.

THERMAL PROPERTIES

U = 0.12 btu/hr sqft

CHEMICAL RESISTANT

Compatible to the test
Alkalinity Salt spray
Immersion in distilled water
Exposure to detergent

Panels Specification

1	Permissible Compressive Stress at <2% Compression.	:	12 25 Kpa
2	Compressive Stress at 10% Conn pression.	:	65 110 Kpa
3	Flexural Strength	:	160 210 Kpa
4	Tensile Strength	:	150 230 Kpa
5	Shear Strength	:	90 120 Kpa
6	Continuous Service Temp. (W/O significant Mech. Load)	:	-180°C to + 85°C
7	Thermal Conductivity @ 10°C	:	0.032 watts/M/°k
8	Approx. Water Vapor Permeability	:	40g/Day/m2
9	Typical Water Absorption after immersion in water For 7 days	:	3% by vol

CLEANROOM DOORS

FTS's modular cleanroom systems are intrinsically versatile. They are comparatively inexpensive to reconfigure or modify and give you superior control over airflow, pressure, temperature, humidity and filtration. You are guaranteed a custom clean environment at a fraction of the cost and time associated with a conventional cleanroom.

Our cleanroom systems include wall panels, walkable and non-walkable ceiling panels, risers, doors, view panels and covings customised to specific requirements and manufactured to GMP standards in our state-of-the-art facilities using scratch resistant materials.

APPLICATIONS

- Pharmaceutical Facilities
- Food Processing
- Hospitals
- Dairies
- Chill Freezer Rooms
- Veterinary Centres
- Electronic Industries
- Laboratories

CLEANROOM DOORS

Salient Features:

- Galvanized and stainless steel in MOC
- Epoxy polyester based, powder coated/ painted (60 to 80 microns)
- Highly corrosion resistant
- Flushed construction
- Strong and durable
- Maintenance free
- Shutter thickness 46mm
- High level aesthetics
- Flushed glazed windows of varying sizes
- Easy to operate
- High density (40kg/m3) pre insulated (honey comb/puf)
- Stainless steel hardware

CLEANROOM MODULAR DOORS

Specifications:

- Single/Double doors with equal / unequal shutters
- Standard height -2100 mm
- Width - Variable up to 1150 mm of door shutter
- Frame thickness - 50/15/100 mm
- Clear opening = Total door width-106 mm
- Smooth and seamless for easy cleaning and the highest standards of hygiene
- Non-porous surface will not absorb moisture, the doors cannot swell, warp or harbor bacteria
- Light for easy operation, yet strong and durable
- Built-in colour requires no maintenance and is aesthetically pleasing
- Size and specification to be customized as per your requirements
- Quality checked at all stages of manufacture to ensure accuracy and reliability
- Electric or pneumatic automation including interlock facilities for greater efficiency and safety
- Available with microbial and antibacterial protection

Includes hardware like SS Ball bearing, butt hinges, Door closure, Panic latch, Push plate & lock. PVC door seal and Rubber automatic door bottom.


SS Ball bearing


Butt hinges


Door closer


Panic latch


Push plate


Lock

SINGLE DOOR (SIZE)	DOUBLE DOOR (SIZE)
750 x 2100 mm	*1200 x 2100 mm*
900 x 2100 mm	*1500 x 2100 mm*
1000 x 2100 mm	*1800 x 2100 mm*
1200 x 2100 mm	*2000 x 2100 mm*