

Clean Rooms Specifications

General Requirements

The scope of work should contain supply, installation, testing & commissioning of the following items

- Powder coated sandwich clean rooms partitions
- Aluminum coving
- LED Lighting system
- HVAC system
- Self levelling epoxy
- Sandwich panel powder coated doors

Other details

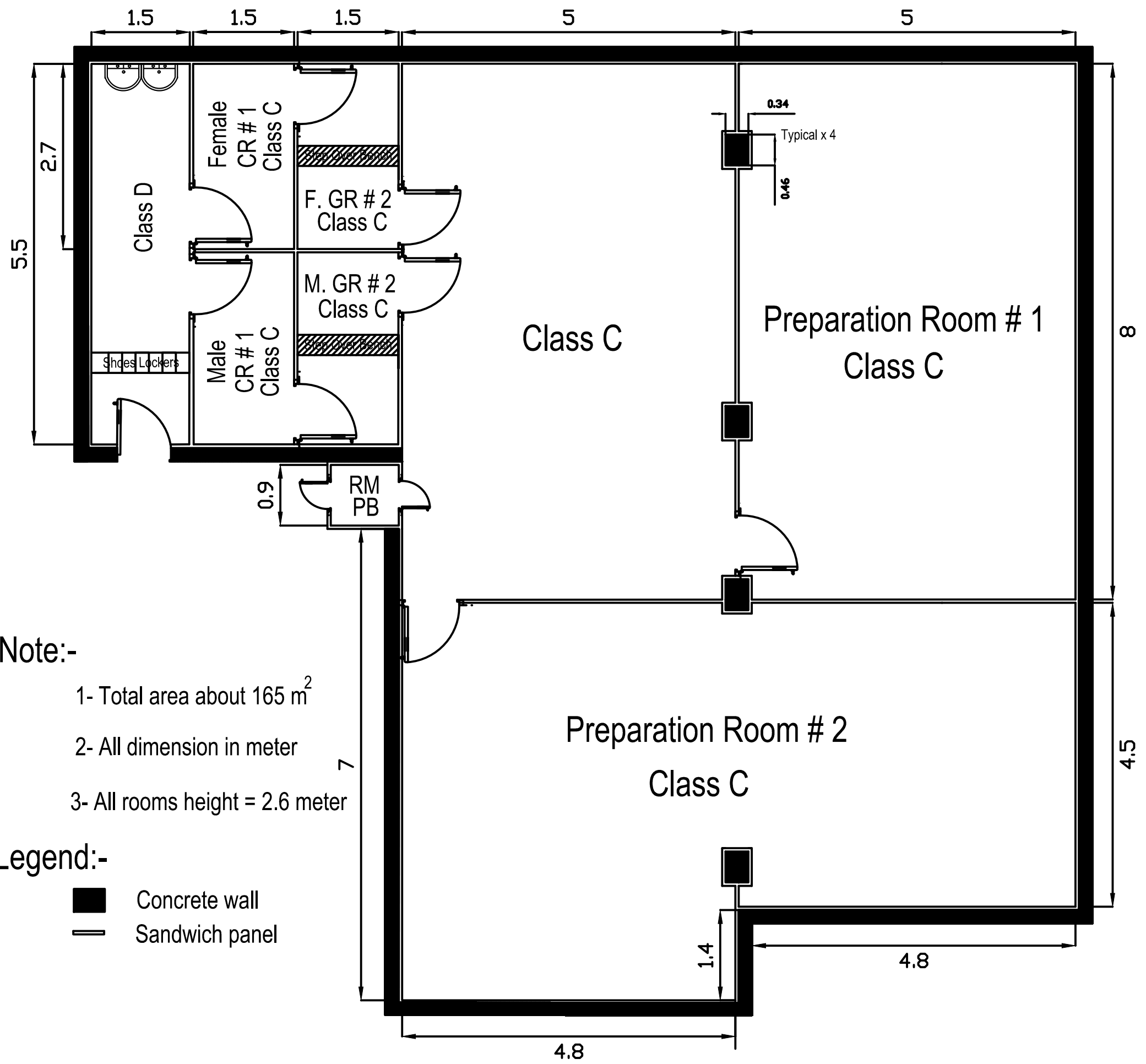
1. The clean rooms partitions should be made of sandwich panel powder coated with 100 mm thickness
2. Area of the clean rooms is about 165 m² (Please see the attached layout)
3. The quantities as per the attached layout
4. All concrete columns should be clad with sandwich panel
5. PUFF insulation
6. S/steel 304 rail should be provided to protect the sandwich panel all around
7. Non walkable sandwich panel false ceiling with PUFF insulation material and 100 mm thickness
8. Single doors size (900 x 2100 mm) with stainless 304 hinges and door presser (QTY: 15 Nos.)
9. Aluminum coving for panel
10. Stainless steel dynamic pass box with UV lamp 0.9 x 0.9 meter
11. Air handling units for preparation room # 1, 2 and for changing room area (QTY: 3Nos.)
12. Each AHU should include pre filter and bag filter with 95% efficiency
13. The capacity of each AHU should achieve the required number of air change per hour for the concerned class
14. Magnahelic gauges 0-50 Pascal should be provided between all bags and HEPA filters
15. Magnahelic gauges 0-50 Pascal also should be installed to read the differential pressure between the rooms.
16. Double glass view (meter x meter) should be involved (QTY: 6 Pcs)

17. Terminal HEPA filters with 99.97 efficiency @ 0.3 μ
18. Stainless steel step over bench for changing rooms
19. Stainless steel lab coats lockers (QTY: 4 Cupboards each contains 4 locker)
20. Stainless steel shoes lockers (QTY: 4 Cupboards each contains 4 locker)
21. LED lamps with single phase electrical sockets (QTY: 4 Sockets for each area)
22. All electrical wires, cables & accessories to be supplied
23. Personnel changing room (1.5 x 2 meter) with electromagnetic interlocking doors for preparation room #1 & room #2
24. Material air lock (1.5 x 2 meter) with electromagnetic interlocking doors for preparation room #1 & room #2
25. Stainless steel wash sink (QTY: 2 Nos.)
26. Package unit
27. The capacity of the AHUs should be 1.2 times of the actual required CFM for the area
28. VFD should be included for AHUs fans
29. Low level return duct is required for HVAC system
30. Load calculation of the package unit should be 1.3 times of actual load of the rooms
31. The HVAC system should be designed for room temperature 22 °C plus or minus 2 °C and relative humidity (RH) between 30 to 50 % knowing that the ambient temperature might reach 50 °C in summer season and relative humidity might reach 85% in raining season
32. Air balance should be achieved to meet rooms classification
33. Automatic volume control damper (VCD) to be installed in air supply duct
34. Clean rooms qualification test should be included such as:
 - No. of air change
 - Differential pressures between the rooms and all filters
 - Integrity test for the HEPA filters
 - Particles count
 - Air visualization test

Acceptance Criteria:-

- 1- All the clean rooms should pass the qualification test as per ISO 14,644
- 2- All the clean rooms should be complied with the European cGMP
- 3- All technical documents such as Design qualification (DQ), Installation Qualification (IQ), operation qualification (OQ) and clean rooms validation to be submitted

- 4- All tests should be passed according to the European cGMP and carried out in the presence of the client representative
- 5- All ducting and piping works should be fabricated and installed in accordance with SMACNA standard
- 6- All supply and return ducts should be isolated
- 7- All ducts should pass the light or smoke test
- 8- The differential pressure between the rooms should be between 15 to 30 Pascal
- 9- The room temperature and relative humidity should be as per mentioned above in the specifications
- 10- The room classification that mentioned in the attached drawing should be met



Note:-

- 1- Total area about 165 m²
- 2- All dimension in meter
- 3- All rooms height = 2.6 meter

Legend:-

- Concrete wall
- Sandwich panel