



Uhde India Limited

**PART – II  
SECTION-19  
TECHNICAL SPECIFICATIONS  
CAVITY FLOORING & FALSE CEILING**

DOC NO.:  
CI-UCH-016-019

Rev. :R0

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**SCOPE**

- 19.1 Providing, fabricating and erecting etc. of Cavity floor and false ceiling of all jobs herein enumerated including providing all labour, tools and plant, all materials, consumables, galvanising, all of approved quality. The work shall be executed according to the drawings, specifications, in an expeditious and workmanlike manner as detailed in the specifications and the relevant Indian Standard Codes and standard practices and to the complete satisfaction of the Engineer.

**NOTE**

The Contractor has to co-ordinate with the work of the Civil, Electrical, Instrumentation and other connected Agencies or any other agency working concurrently, without causing damage to the installation done by others. Any such damage shall be recoverable from Contractor's bill.

- 19.2 **CODES**

The following codes, standards and specifications are made a part of this specification. All specifications, standards, codes of practices referred to herein shall be the latest edition including all applicable official amendments and revisions. In case of discrepancy between this specification and those referred to herein, this specification shall govern:

- IS:2062 - Standard Quality Structural Steel
- IS:814 - Welding Electrodes
- IS:1367 - Bolts & Nuts for structural use

- 19.3 **General Specifications**

**Materials**

- 19.3.1 **Structural Steel**

The following grades of steel shall be used for steel structures.



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Structural Steel shall generally be of standard quality conforming to IS:2062 Grade A. Whenever welded construction is specified, plates of more than 20 mm thk. shall conform to IS:2062 Grade B.

19.3.2 Welding Materials

Welding electrodes shall conform to IS:814.  
Approval of welding procedures shall be as per IS:9595/823.

19.3.3 Bolts, Nuts and Washers

Bolts and nuts shall be as per IS:1367 Class 4.6 (UNO) and tested as per IS:1608. It shall have a minimum tensile strength of 44 kg/mm<sup>2</sup> and minimum elongation of 23% on a gauge length of 5.65 x A (A = original cross sectional area). Washers shall be as per IS:2016.

All materials shall conform to their respective specifications. The use of equivalent or higher grade or alternate materials will be considered only in very special cases subject to the approval of the Engineer in writing.

Aluminium section shall conform to IS:733, IS:1948, IS:1949 as applicable. Contractor shall produce necessary quality assurance certificates for the material to be used for Engineers approval.

19.3.4 Fabrication Drawings

The Contractor shall prepare all fabrication and erection drawings on the basis of general layout drawings, drawings supplied to him and submit the same in triplicate to the Engineer for review. The Engineer shall review and comment, if any, on the same. Such review, if any, by the Engineer does not relieve the Contractor of any of his required guarantee/responsibilities. **CONTRACTOR SHALL TAKE ACTUAL MEASUREMENTS AT SITE BEFORE THE PREPARATION OF FABRICATION DRAWINGS.**

Fabrication drawings shall include the following but not limited to:

- Member sizes and details.
- Types and dimensions of welds and bolts.
- Shapes and sizes of edge preparation for welding.



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- Details of shop and field joints included in assemblies.
- Bill of Materials.
- Quality of structural steels, welding electrodes, bolts, nuts and washers, any other material used.
- Erection assemblies, identifying all transportable parts and sub-assemblies associated with special erection instrumentation if required.
- Calculations where asked for, for approval.
- Connections, splices and other details not specifically detailed in design drawings shall be suitably given on fabrication drawings considering normal detailing practices and developing full member strengths, where asked for and calculations for the same shall also be submitted for approval.

ANY ALTERNATE DESIGN OR CHANGE IN SECTION IS ALLOWED ONLY WHEN APPROVED IN WRITING BY THE ENGINEER.

However, if any variation in the scheme is found necessary later, the Contractor will be supplied with revised drawings. The Contractor shall incorporate these changes in his shop drawings at no extra cost and resubmit for review.

The Engineer's review shall not absolve the Contractor of his responsibility for the correctness, adequacy of details and connections.

The Contractor shall supply five/more prints each of the final reviewed drawings to the Engineer and one copy to the OWNER within a week of final review at no extra cost for reference and records.

If any modification is made in the design drawing during the course of execution of the job, revised design drawings will be issued to the Contractor. Further changes arising out of these shall be incorporated by the Contractor in the fabrication drawings already prepared at no extra cost and the revised fabrication drawings shall be duly got revised as per the above clauses.

19.3.5

Fabrication

Fabrication of structural steel shall be in accordance with IS:800 in addition to the following:

Fabrication shall be done as per approved fabrication drawings adhering strictly to work points and work lines on the same. The connections shall be welded as per design drawings.

Any faulty fabrication pointed out at any stage of work shall be made good by the Contractor at his cost.

Any other material used which is not covered above shall conform to relevant IS Codes.

19.3.6      Galvanising

Galvanising of material shall be carried out as per IS:2629 - Recommended Practices for Hot Dip Galvanising of Iron & Steel, which guarantees a minimum coating of zinc of 85 microns.

19.3.7      Erection

The erection work shall be permitted only after the structures over which the work is to be erected, is accepted and is ready for erection.

Any faulty erection done by the Contractor shall be made good at his cost.

Approval of the Engineer at any stage of work does not relieve the Contractor of any of his required guarantees of the Contract.

Erection in general shall be carried out as required and approved by the Engineer.

The following checks and inspection shall be carried out before, during and after erection:

- damages during transportation
- accuracy of alignment of structures
- erection according to drawings and specifications
- progress and workmanship

The various parts of the said structure shall be so erected as to ensure stability against inherent weight, wind and erection stresses.

19.3.8

Final Acceptance and Handing Over of Structure

At the time of acceptance of the work, the Contractor shall submit the following documents:

- Fabrication drawings - either in tracings or reproducibles.
- Quality certificates for the materials used.

Approval by the Engineer at any stage of work does not relieve the Contractor of any of his required guarantee of the Contract.

19.4

SPECIFICATIONS FOR CAVITY FLOORING

Providing, erecting and installing cavity floor of module 610 mm x 610 mm including ramps and steps as required in Control Room as specified below as per drawings.

- a. Support system consisting of suitable structural steel with adjustable vertical supports on base plates and grid beams of Tee section or any other suitable section resting over the vertical supports, including necessary welding, bolting, providing screw jacks, with or anti-corrosive base coat and finished with paint after surface preparation by mechanical brushing. The support system shall be secured to the concrete base floor to be provided by others with adhesive agent like Araldite.
- b. The false floor system shall consist of 35 mm thick Novateak super particle board or equivalent in panels of 600 mm x 600 mm fire, termite and moisture resistant quality. The edges and bottom of the panels shall be covered with suitable anti-corrosive, anti-termite sealant and the top shall be finished with PVC laminate of approved make and colour. The panels shall be set in the saddles provided in support system (a) above in perfect level free from any undulations.
- c. The entire floor system shall be designed to carry a uniformly distributed load of 500 kg at the centre of the panel, the permissible deflection being 2 mm (i.e. SPAN/300).

- d. Blockouts should be left in the support system and the flooring for Control panels and other installations resting on the floor as per drawing.
- e. The floor panel should be easily removable by a vacuum pick up made of rubber bell mouth and handle.
- f. The entire flooring should be designed to give noiseless system under movement of personnel and equipment by providing suitable rubber packings on all sides and in bearings of the panels, and should be fire proof.
- g. Contractor may offer his standard flooring system with all details, dimensions and material specifications, principally conforming to the above incidental expenses.
- h. Contractor shall furnish guarantee for the performance of the floor system for the minimum operative of one year after date of completion certificate. Any damages, failures or unsatisfactory performance of the floor shall be rectified by the supplier at his own cost.
- i. Payment shall be made on M<sup>2</sup> of finished area basis allowing deduction for cutouts.

**19.5****SPECIFICATIONS FOR FALSE CEILING (ALT.1)**

Providing and installing Jolly Insulex (compressed particle board) or equivalent approved False Ceiling System for horizontal, inclined or vertical surfaces comprising of Jolly Insulex or equivalent fire, termite, moisture resistant quality boards/tiles supported on 600 mm grid aluminium framing with 40 x 25 mm aluminium tees with all necessary G.I. suspenders of 3 mm dia. including all other accessories such as clips, hooks etc. Cutouts, supports for air diffusers, light fittings etc. wherever required shall be provided with appropriate additional framing. The rate shall be inclusive of material, labour, fixing and all works complete in all respect including preparation and detailed drawings.

Concealed side of ceiling boards to be painted with one coat of approved fire retardant paint.



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Measurement of completed work shall be made on sq.m. of finished area basis, allowing deductions for cutouts / openings.

19.6 SPECIFICATIONS FOR ALUMINIUM FALSE CEILING (ALT.II)

19.6.1 Providing and installing false ceiling system for horizontal, inclined or vertical surfaces comprising of square edged plain panels, 84 mm wide x 15 mm deep with 25 mm recessed flanges, formed out of 0.5 mm thk. aluminium alloy electrically powder coated in standard colour shades as per drawings as approved by the Engineer.

19.6.2 The panels shall be fixed on formed carriers 15 mm wide at top x 43 mm deep made out of 0.91 mm thk. aluminium alloy electrically powder coated in stain black with protruding ears to hold panels in a module of 100 mm (16 mm gap between the panels) at a maximum spacing of 1.3 Mtrs. c/c carriers suspended from the slab/roof by 4mm dia. galvanised steel wire/rod hangers with height adjustment suspension springs made out of galvanised spring steel hangers shall be fixed to roof/slab by J-hooks and nylon inserts. Edges of the ceiling shall be neatly trimmed with suitable matching edges profiles to cover the gap between the false ceiling and the walls.

19.6.3 Insulation

The acoustical and thermal insulation blanket, 25 mm thk. of resin bonded mineral wool covered in a polythene bag shall be laid over the aluminium panel ceiling.

19.6.4 However, the bidder may offer his own standard system of aluminium false ceiling, keeping in mind the basic requirement as above. The details of such system shall be submitted with the offer.

19.7 MODE OF MEASUREMENT & RATES

The mode of measurement shall be on Sq.m. basis less the area for cutouts. The rate shall include materials, labour, wastage, supervision, taxes and duties, transport and all other incidental charges, preparation of detailed drawings and by works, taxes, duties etc. to complete the work in all respects. No additional payment shall be made to complete the work.





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Rates to be all inclusive of above and also shall include all necessary taxes, duties and any other incidental expenses required to complete the entire work in scope.

**END**