Technical Specification

13.15 Kota Stone Flooring

13.15.1 Stone Slabs
The slab shall be of selected quality, hard, sound, dense and homogeneous in texture, free from cracks, decay, weathering and flaws. They shall be hand or machine cut to the requisite thickness as indicated and they shall be of uniform colour. The slabs shall have the top (exposed) face polished before being brought to site. Before starting the work, Contractor shall get the sample of slabs approved by the Engineer-in-Charge.

13.15.2 Dressing of Slabs
Every slab shall be cut to the required size and shape and fine chisel dressed on the sides to the full depth so that a straight edge laid along the side of the stone shall be in full contact with it. The sides (edges) shall be table rubbed with coarse sand or machine rubbed before paving. All angles and edges of the slabs shall be true, square and free from chippings and the surface shall be true and plane. For staircase treads, single piece slab to full length and width of treads shall be provided. The nosing shall be rounded off and three parallel grooves ten by ten (10mm x 10mm) immediately behind the nosing edge shall be provided to avoid skidding. Square or circular holes shall be made carefully to accommodate M.S. Baluster in position.

13.15.3 Preparation of Surface and Laying

13.15.3.1 Sub-grade concrete or the RCC slab on which the slabs are to be laid shall be cleaned, wetted and mopped. The bedding for the slabs shall be with cement mortar and the thickness as indicated.

13.15.3.2 The slabs shall be laid in the following manner:-
Mortar of the specified mix shall be spread under the area of each slab, roughly to the average thickness as indicated. The slab shall be washed and cleaned before laying. It shall be laid on top, pressed, tapped with wooden mallet and brought to level with the adjoining slabs. It shall be lifted and laid aside. The top surface of the mortar shall then be corrected by adding fresh mortar at hollows. The mortar is allowed to harden a bit and cement slurry of honey like consistency shall be spread over the same at the rate of 4 kg of cement per square metre. The slab to be paved shall be lowered gently back in position bedded in level. Subsequent slabs shall be laid in the same manner and joints between adjacent slabs shall be as thin as possible and run in straight line. After each slab has been laid, surplus cement grout coming out of the joints of the slabs shall be cleaned off. The surface of the flooring as laid shall be true to levels, lines and shapes as instructed by the Engineer-in-Charge.

13.15.3.3 Slabs which are fixed in the floor adjoining the wall shall enter not less than twelve (12) mm under the plaster skirting or dado. The junction between wall plaster and the floor shall be finished neatly and without waviness.
13.15.4 Curing, Polishing and Finishing

13.15.4.1 The floor shall be kept wet for a minimum period of seven (7) days. The surface shall thereafter be ground evenly with machine fitted with fine grade blocks (No. 120). The final grinding with machine fitted with the finest grade grit blocks (No. 320) shall be carried out the day after the first grinding described above or before handing over the floor, as ordered by the Engineer-in-Charge.

13.15.4.2 For small areas or where circumstances so require, hand polishing may be permitted in lieu of machine polishing after laying. For hand polishing the following Carborundum stones shall be used.

1st grinding           -       Medium Grade Stone (No.8)
Final Grinding        -      Fine Grade (No. 120)

13.15.4.3 In all other respects, the process shall be similar as for machine polishing.

13.15.4.4 After the final polish, oxalic acid shall be dusted over the surface at the rates of thirty three (33) gms. per square metre sprinkled with water and rubbed hard with pad of wooden rags. The following day the floor shall be wiped with a moist rag and dried with a soft cloth and finished clean.

13.15.4.5 If any slab is disturbed or damaged, it shall be refitted or replaced, properly jointed and polished. The finished floor shall not sound hollow when tapped with wooden mallet.

13.19 Ceramic Glazed tiles flooring / Ceramic Glazed wall tiles in dado and Skirting

13.19.1 Bedding
The screed bed for laying Ceramic Glazed floor tiles shall be of cement and sand mortar 1:4. Bedding over which the tile shall be laid shall not be less than 10mm at any place. Tiles shall be soaked in water before laying.

13.19.2 Laying
Base concrete or RCC slab shall be cleaned and wetted. The bedding shall then be laid evenly over the surface, tamped and corrected to desired levels and allowed to harden enough to offer a rigid cushion to tiles. Before laying the tiles, cement slurry of honey like consistency at 3 kg/ sq m shall be applied over the bedding. At a time area to accommodate about twenty tiles shall be applied with cement slurry. Tiles shall then be washed clean and fixed in the grout one after the other, each tile being gently tapped in its position till it is properly bedded and in level and line with adjoining tiles. The joints shall be as thin as possible but not exceeding 1.5mm wide. The ceramic tiles shall be set, jointed with cement slurry and pointed in neat coloured cement to match the colour of tiles. The surface shall be cured for seven days and then washed clean.

In the cases of skirting and dado, the wall surface shall be covered with about 10mm thick plaster of cement and sand mortar as indicated and allowed to harden. The plaster shall be roughened with wire brushes or by scratching diagonal lines. The back of tiles shall be buttered with cement paste and set on bedding mortar. The tiles shall be gently tapped in position one after the other. Top of skirting or dado shall be truly horizontal and the joints vertical or as per required pattern. Joints shall be flush pointed with white cement with pigment to match the colour of tiles.
13.20 Vitrified Porcelain Tiles

13.20.1 Vitrified polished porcelain floor tiles shall be of 1st quality. These vitrified tiles are classified under group B1a of the International Standard for ceramic tiles ISO: 13006. Tiles shall be hard, dense, impervious and frost resistant. Water absorption of tiles shall be less than 0.5% and flexural strength (Modulus of Rupture) shall be more than 35 N/Sqmm. Vitrified polished porcelain floor tiles shall be provided of sizes, colour, shades, texture and designs as indicated and if size not indicated it shall be 600mm x 600 mm/ 605 x 605 mm. The thickness shall be as specified by the manufacturer but not less than 8mm.

13.20.2 Heavy duty vitrified unpolished porcelain floor tiles for exterior use shall be of 1st quality. Heavy duty vitrified tiles shall be acid and alkali resistant, weather proof, anti skid and abrasion resistant as per International Standard for ceramic tiles ISO :13006 and EN 176 requirement. These tiles shall comply with the following requirements:
   (a) Water absorption<2%
   (b) Flexural Strength>35 N/Sqmm
   (c) Moh's Hardness>6
   (d) Abrasion resistance<204mm.
   Heavy duty vitrified tiles shall be of sizes, colour, texture and designs as indicated but size if not indicated it shall be of 300mm x 300 mm . The thickness shall be as specified by the manufacturer.

13.20a Vitrified Porcelain Tiles flooring

13.20a.1 Bedding
   The screed bed for laying Vitrified Porcelain Tiles shall be of cement and sand mortar as indicated. Bedding over which the tiles shall be laid shall not be less than 10mm at any place.

13.20a.2 Laying

   Base concrete or RCC slab shall be cleaned and wetted. The bedding shall then be laid evenly over the surface, tamped and corrected to desired levels and allowed to harden enough to offer a rigid cushion to tiles. Before laying the tiles, tiles shall be washed and then applied fine cement slurry on the back of the tile to ensure full and proper bedding. Tiles shall then be placed on bedding, each tile being gently tapped with rubber hammer in its position till it is properly bedded and in level and line with adjoining tiles. Use of spacers is recommended for uniformity in joints and better finish. Remove the residual cement or jointing material immediately by a wet sponge. After 24 hours when the tiles are properly set and cured, fill the joint gaps with joint filler as per recommendation of manufacturer. The joint gap shall be filled by spreading joint filler paste in the spaces between the tiles with the help of rubber trowel. Clean the tiles surface immediately with the help of wet sponge.

   Vitrified Porcelain Tiles can be laid in flooring over Base concrete or RCC slab directly by using suitable chemical adhesive as per manufacturer’s instructions if so indicated.