

Item No.7 Removing dry or oil bound distemper by a washing and scraping and sand papering the wall surface smooth including necessary repairs to scratches complete.

The Scraping of the existing plaster in lime or cement mortar as per the existing building wall. The scrapping should be done of any thickness from wall / RCC members in a manner that it may not effect or damage the existing structure or any part of the wall during course of the execution. Necessary, scaffolding shall be done as per the instruction of Engineer-in-charge.

The scrapping material should be stacked at one place and it should be disposed off as directed by the Engineer-in-charge.

On completion of the scarpping work, the existing wall should be cleared of all dirt, dust and old lime by brooming the surface.

The measurement shall be taken as per the existing visible area of the wall.

The rate shall be for a unit of One Sqmt.

Item No.8 Applying two coats of putty & two coats of primer of approved brand and manufacture on new wall surface to give an even shade including thoroughly brushing the surface free from mortar dropping and other foreign matter and sand papered smooth.

1.0. Materials

Water shall be conform to M-1

The plastic emulsion shall conform to I.S. 5411-1969 (Part – I) & primer coating of Birla or Asian lappy (Putty)

2.0. Workmanship

2.1 The surface shall be cleaned of all rust, scale dirt and other foreign matter stick to it with wire brushes, scrapes, sand papers etc.

Priming coat :

2.2. A priming coat of Brila putty or Asian acrylic lappy (Putty) of approved brand shall be got approved before use.

2.3. Application of priming coat shall be done as under:

The primer shall be applied with a brush on the clean dry and smooth surface horizontal strokes shall be given first and vertical strokes shall be applied immediately afterwards. This entire operation will constitute two coats on ceiling & wall with necessary scaffolding as per the instruction of Engineer in charge

The surface shall be finished uniformly leaving no brush marks. It shall be allowed to dry for at least 48 hours before paint is applied.

2.4. The specification of std. booklet item no. 18.57 & 18.60 / P.136 & P 137 followed for plastic emulsion painting necessary scaffolding for auditorium ceiling / wall painting is required to prevent scratches on existing structure as per the instruction of Engineer in charge

3.0. Mode of measurements and payment

3.1. Priming two coats of wall paint primer and two coats of wall painting with plastic emulsion paint includes scraping of surface spoiled by smoke soot, removal of oil and grease spots, treatment

for infraction of efflorescences, mould moss, fungi, algae and lichens and patch repairs to plaster shall be included in this item for which nothing extra shall be paid.

3.2. All the work shall be measured net in the decimal system as in places subject to the following limits unless otherwise stated hereinafter:

- (a) Dimensions shall be measured to the nearest 0.01 m.
- (b) Area in individual items shall be worked out to the nearest 0.01 sq. m. All work shall be measured in sq. meter. No deductions shall be made for ends of joints, beams, posts, etc. of these openings, nor for finish around the ends of joints, beams, posts etc.

3.3. Deductions of openings exceeding 0.5 sq.m. But not exceeding 3 sq. m. each shall be made as follows and no addition shall be made for reveal, jambs, soffits etc. of these openings:

- (a) When both the faces of walls are provided with the same finish deductions shall be made for one face only.
- (b) When each face of wall is provided with different finish, deduction shall be made for that of frame for door, windows etc. on which width of reveal is less than that of the other side but no deductions shall be made on the other side. Where the width of reveals on the both the faces of wall are equal, deduction of 50% of area of opening on each face shall be made from area of finish.
- (c) When only one face of wall is treated and the other face is not treated, full deductions shall be made if the width of the reveal on treated side is less than that on untreated side but if the width of the reveals is equal or more than that of untreated side neither deductions nor additions to be made for reveals, jambs, sills and soffits shall be measured

- 3.4.** In case of openings of area exceeding 3 sq.m. Each, deduction shall be made for openings, but jambs, sills and soffits shall be measured.
- 3.5.** No deductions shall be made for attachments such as casing, conduits, pipes, electric wiring and the like.
- 3.6.** Item includes removing nails, making good holes, cracks, patches with materials similar in composition to the weather proof wall paint
- 3.7.** The rate includes cost of all materials, labour, scaffolding, protective measures etc. involved in all the operations described above this shall also include conveyance, delivery, bundling, unloading storing etc.
- 3.8.** The rate shall be for a unit of one sq. meter.

Item No.11 Finishing wall with weather proof exterior emulsion paint on wall surface (two coats) to give an required shape even shade after thoroughly brushing the surface to remove all dirt, and remains of loose powdered materials.etc complete

1.0 Material :

Water shall be conform to M-1. The weather proof exterior emulsion paint shall conform to IS 5411-1060 (Part-1)

2.0 Workmanship :

2.1 Scaffolding :

Wherever scaffolding is necessary it shall be erected in such a way that as far as possible on part of scaffolding shall rest against the surface to be white or colour washed.

A properly secured strong and well tied suspended platform (Zoola) may be used for white washing. Where ladders are used, pieces of old gunny bag shall be tied at top and bottom to prevent scratches to the floors and walls. For white washing of ceilings proper stage scaffolding shall be erected where necessary.

2.2 Preparation of surface:

The undecorated surface shall be thoroughly brushed off from dust, dirt, grease, mortar dropping and other foreign matter and sand papered smooth. New plaster surface shall be allowed to dry for atleast 2 months before applications of weather proof exterior emulsion paint.

All unnecessary nails shall be removed. putting in plaster shall be made good with plaster of Paris mixed with appropriate of colour to be used. The surface shall then be rubbed down again with a fine grade sand paper and made smooth.

A coat of weather proof exterior emulsion paint shall be applied over the patches. The surface shall be allowed to dry thoroughly before the regular coat of weather proof exterior emulsion paint is allowed. The surface affected by moulds, moss, fungi algae lichens, efflorescence etc, shall be treated in accordance with I.S. 2395 (Part-I) 1966. Before applying weather proof

emulsion paint any unevenness shall be made good by applying putty made of plaster of Paris mixed with water on entire surface including filling up the undulation and then sand papering the same after it is dry.

2.3 Preparation of Mix

This shall be done as per manufacturers instructions. The thinning of emulsion is to be done with water and not with turpentine. The quantity of thinner to be added shall be as per manufacturer instructions.

2.4 Applications:

Before pouring into small containers for use, the paints shall be stirred thoroughly in its container. When applying also, the paint shall be continuously stirred in the smaller container, so that its consistency is kept uniform. The paints shall be laid on evenly and smoothly by means of crossing and laying off. The crossing and laying off consist of covering the area over with paint, brushing the surface hard for the first time over and then brushing alternately in opposite direction two or three times and then finally brushing lightly in a direction at right angles to the same. In this process, no brush marks shall be left after the laying off is finished. No hair marks from the brush or clogging of paint puddles in the corners of panels, angles of moldings, etc. shall be left on the work. The full process of crossing and laying off will constitute one coat.

The paint shall be applied with brush or rollers. For undecorated surfaces, the surface shall be treated with minimum two coats of weather proof exterior emulsion paints. The second or subsequent coat shall not be started until the previous coat has become sufficiently hard to resist marking by brush being used.

The surface on finishing shall present a flat very smooth finish. It shall be even and uniform in shade without patches, brush marks paint drops etc.

2.5 Precautions :

Old brushes if they are to be used with emulsion paints, shall be completely dried of turpentine oil paints by washing in warm soap water. Brushes shall be quickly washed in water immediately after use and kept

immersed in water during break periods of prevent the paint from hardening on the brush.

In the preparation of wall for weather proof emulsion, painting, no oil base putties shall be used infilling cracks, holes etc.

Splashes on floors etc. shall be cleaned out without delay as they will be difficult to remove after hardening.

Washing of the surface treated with emulsion paint shall not be done within 3 to 4 weeks of application.

2.6 Protective measure:

The surface of doors, windows, floors, articles of furniture etc, and such other parts of the building not to be white washed shall be protected from being splashed upon. Such surfaces shall be cleaned of emulsion paint splashed if any.

3.0 Mode of measurements & payment :

3.1 All the work shall be measured in the decimal system as under :

(a) Dimensions shall be measured to the nearest 0.01 M.

(b) Area in individual items shall be worked out to the nearest 0.01 Sq. M.

All the work shall be measured in Sq.Mt. Deductions for jambs, soffits, sills etc, for opening not exceeding 0.5 Sq.Mt. each in area for ends of joints, posts, beams, girders, steps etc. not exceeding 0.5 Sq.Mt. each in area and for opening exceeding 0.3 Sq.Mt. and not exceeding 3.0 Sq.Mt. each in area deductions and additions shall be made as under :

3.2 No deductions shall be made for ends of joints beams, posts etc. and openings not exceeding 0.5 Sq.Mt. each. No addition shall be made for reveals, jambs, soffits, sills etc. of these openings nor for finish arounds ends of joints, beams, posts etc.

3.3 Deductions for openings exceeding 0.5 Sq.Mt. but not exceeding 3 Sq.Mt. each shall be made as follows and no addition shall be made for reveals, jambs, soffits etc. of these openings:

- (a) When both the faces or walls are provided with finish, deduction shall be made for one face only.
 - (b) When each face of wall is provided with different finish deduction shall be made for that side of frame for door, window etc. on which width of reveals is less than that of the other side, where width of reveals on both faces of wall are equal, deduction of 50% of area of opening on each face shall be made from total area of finish.
 - (c) When only one face of wall is treated and the other face is not treated, full deduction shall be made if the width of reveal on the treated side is less than that on the untreated side, but if the width of the reveal is equal or more than on the untreated side neither deductions nor additions be made for reveals, jambs, soffits, sills etc.
- 3.4 In case of area of opening exceeding 3 Sq.Mt. each, deduction shall be made for openings but jambs, soffits, shall be measured.
- 3.5 No deduction shall be made for attachment such as casing, conduits, pipe, electric wiring and the like.
- 3.6 Corrugated surfaces shall be measured flat as fixed and not girth. The quantities so measured shall be increased by the following percentage and the resultant shall be included with the general areas.
- (a) Corrugated steel sheets 14%
 - (b) Corrugated A. C. Sheets 20%
 - (c) Semi corrugated A. C. Sheets 10%
 - (d) Nainital pattern roof (Plain sheeting with rolls) 10%
 - (e) Nainital pattern roof (with corrugated sheets) 25%
- 3.7 Cornices and other wall features, when they are not picked out in a different finish/colour shall be girthed and included in the general area.
- 3.8 The rate shall include the cost of all materials, labour, scaffolding, protective measures etc. involved in all the operations described above.
- 3.9 The rate shall be for a unit of one Sq.Mt.

Item No.15 Providing and laying broken china mosaic flooring for terrace using 12 mm to 20 mm broken pieces of glazed tiles to be laid over cement mortar 1:3 to plain or slope and to be tempered to bring mortar cream out up to surface using white cement including rounding off junctions and extending them up to 15 cm along the wall, clearing with water and oxalic acid etc. as directed.

1.0 GENERAL:

The work shall be carried out as per general technical specification volume and as per National Building Code as amended from time to time.

2.0 MATERIALS:

The water shall conform to M-1.

The cement shall conform to M-3.

The cement Mortar shall conform to M-11.

The sand shall conform to M-6.

The china mosaic tiles (glazed tiles) be of approved quality as per M-55.

3.0 WORKMANSHIP:

3.1 PREPARATION OF SURFACE:

First the existing RCC surface of slab shall be clean thoroughly then the surface where this china mosaic water proofing – work is to be carried out shall be roughened manually thereafter first coat of cement slurry at a rate of 2.75 Kg/10Sqmt with water – proofing compound will be admixed and shall be applied on the cleaned surface.

3.2 PREPARATION OF BASE:

The work so completed shall be for a period minimum two days either by preparing ponds or by manual method. After completion of the curing the second layer of cement slurry 1:3 with admixing of water proofing materials shall be laid in proportion of 2.75 Kg/Sqmt. Required slope shall be maintained and tempered to bring mortar cement out up to surface using white cement including rounding off junctions and extending them up to 15.00 cm along with walls and slabs clearing with water and oxalic acid etc. as directed.

On completion of sub base work the china mosaic tiling work shall be carried out with pieces of glazed tiles . The china mosaic tiles shall be in form of pieces of new glazed tiles of required size be trowelled with white cement slurry.

3.4 FINAL FINISHING:

On completion of the entire work the terrace where work has been carried out shall be flooded sufficient quantity of water for a period of atleast two weeks of curing and for final test. All above operation to be done in order and as directed and specified by the Engineer-in-charge.

4.0 MODE OF MEASUREMENT AND PAYMENT

The rate shall include the cost of all materials and labour involved in all operation described above, no deduction shall be made nor extra payment shall be made for any opening upto 0.1 Sqmt in area in the floor, nothing extra shall be paid for laying the floor at different levels in the same room on the court yard.

5.0 Additional Performance Guarantee for china mosaic item (Item no.

9) The whole slab area in ceiling or wall above which china mosaic water proofing item is done shall not be leaked or shall not show any dampness for the period of three years the date of completion of work.

Minimum three year gurantee bond should be submitted to the Executive Engineer, City (R&B) Division, Rajkot by the contractor and 10% (Ten percent) of total amount for this item shall be with held for three years from bills.

The said with held amount shall be refunded only after satisfactory completion of the three year gaurentee period. For any bad performance a notice will be given by concerned Deputy Executive and contractor has to rectify the defect within 15 days. In case of non-responsive to department's notice, necessary action will be taken by the deptt. At the

risk and cost of contractor. A sample performance bond is shown on next pag.

6.0 The Rate shall be paid per Sqmt basis.

Item No.22 Providing and fixing plastic seat and cover for wash down water closer with C.P. brass hinges and rubber buffers. (B) Black plastic seal and cover.

1.0 Material

The plastic seat cover shall be 1st quality make as approved by the Engineer-in-charge.

2.0 WORKMANSHIP:-

The plastic seat cover shall be fixed on the European type W.C. as and where directed. The plastic sheet cover shall be supported and fixed in both sides covers of European type W.C. pan with but bolts.

3.0 MODE OF MEASUREMENT AND PAYMENT:-

The payment shall be made as per No. of basis.

Item No.24 Providing and fixing approved brand and quality P.V.C. Flush tank for W.C. etc complete as directed.

1.0 Material

PVC flush tank shall be of IS1 mark and approved brand and good quality.

2.0 WORKMANSHIP:-

- The work shall be carried out as directed by Engineer-in-charge. .
- PVC Flush tank shall be of any type or equivalent company made having IS1 mark.
- The PVC flush tank shall be fixed as directed by Engineer – in – Charge.

3.0 MODEOF MEASUREMENT AND PAYMENT:-

- 3.1 The rate includes cost of all material, all labour tools taxes etc. required for satisfactory completion of this item.
- 3.2 The rate shall be for a unit of One No.

Item No.25 Providing laying and jointing in true line and level 15mm dia. U.P.V.C. Pipe (SCH- 40) for cold water including fittings as approved by Engineer In Charge. Pipe shall be fixed on the wall with the help of clamp at every two metre C/C or shall be concealed as directed including necessary fittings etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials.

1.0 MATERIALS

1.1 The pipe of specified diameter with UPVC (SCH-40) working pressure shall conform to I.S. 3076-1968. The specials and fittings required Shall be of best quality. The pipe shall be of Prince, Supreme, Astral or Finolex or equivalent company as directed by Engineer-in-charge.

2.0. WORKMANSHIP

2.1. The U.P.V.C. of specified diameter shall be fixed as directed. Due to thermal expansion of rigid U.P.V.C. due allowance shall be made particularly over around pipe lines for any change in length of pipe line which may occur during, installation or when pipe line is in service.

2.2. Above ground installation of rigid U.P.V.C. pipe should be undertaken after precautions are observed for protection against dirt sun ray and mechanical damage.

2.3. The rigid U.P.V.C. pipe lines should not be kept exposed above ground when it passes through public place. railway lines, roads, road side and footpaths.

2.4. U.P.V.C. pipes shall be supported at the followings intervals

- 20 mm. dia. 500 mm. - 25 mm. dia. 750 mm. - 32 mm. dia. 900 mm.
- 40 mm. dia. 1200 mm. - 50 mm. dia. 1500 mm.

2.5. Closet support spacings shall be provided, if recommended by the manufacturer.

2.6. The guide line indicated by the manufacturer regarding handling, transportation, storing, laying and jointing of pipes shall be kept in view during execution.

2.7. U.P.V.C. pipes shall be fixed on wall with wooden plugs and suitable clamps.

2.8. Jointing the pipes

- 2.8.1.** The pipes and sockets shall be accurately cut. The ends of the pipes and fitting should be absolutely free from dirt and dust. The outside surface of the pipes and the inside of the fittings shall then be roughened with emery paper, and then solvent cement shall be applied to the matching surface and pushed home and joint. Since solvent cement is aggressive to U.P.V.C. care must be taken to avoid applying excessive cement to the inside of pipe sockets as any surplus cement cannot be wiped off after jointing. Empty solvent cement tins, brushes, rags, or paper unpregnated with cement should not be buried in the trenches. They should be gathered, not left scattered about, as they can prove to be a hazard to animals which may chew them.
- 2.8.2.** If any manufacturer recommends its own methods of jointing the, same shall be adopted after necessary approval from the Engineer-in-charge.

2.9. Laying pipes in trenches

- 2.9.1.** The pipes shall be laid over uniform relatively soft fine grained soil found to be free of presence of hard objects such as large flints, rocky projections, large tree roots etc. The width of the trenches shall be minimum width required for working.
- 2.9.2.** The pipes laid underground shall not be less than one metre from the ground level. The pipe shall be positioned in the trenches so as to avoid any induced stresses due to reflection. Any deviation required shall be obtained by using proper type of rubber ring joints.

3.0. Mode of measurements & payment:

- 3.1.** The description of this item shall unless otherwise stated be held to include where necessary conveyance and delivery, handling, unloading, storing, fabrication, hoisting it, labour for finishing to required shape and size, testing, fitting in position, straight, cutting and waste, return of packing rig etc. complete.
- 3.2** The length shall be measured on running meter basis of finished work. The length shall be taken along the centre line of the pipe and

fitting. The pipes fixed to walls, ceiling, floors etc. shall be measured and paid under this item.

- 3.3.** All the work shall be measured in decimal system as fixed in its place, subject to tolerance given in below unless otherwise stated ::
 - [i] Dimension shall be measured to the nearest 0.01 meter.
 - [ii] Area shall be worked out to the nearest 0.01 Sq. meter.
- 3.4** All measurements of cutting shall unless otherwise stated be held to include the consequent waste.
- 3.5** In case of fitting of unequal bore the largest bore shall be measured for the test.
- 3.6** Testing of pipe lines, fittings and joints includes, or providing all plant and appliances necessary for obtaining access to the work to be tested and carrying out the tests.
- 3.7** The rate includes U.P.V.C. tubing with special type flange compressions, screwed joints, together with all fittings (such as bends, sockets, springs, elbows, toes, crosses, short pieces, clamps and unions etc.) and fixing complete with clamping wall hooks, wooden plugs etc. and also cutting, screwing and waste and for making forges (or hand made) bends on piping as required connector shall be inserted. Mule required or directed. The rate also includes cutting through floors etc. and their making good and painting exposed threads with anti-corrosive paint it above and testing. Where tubes are to be fixed to wall, ceiling and flooring, the rate shall not include painting of pipes, sleeves and sand filling under floor for which seprate payment shall be made.
- 3.8** The rate shall be for a unit of one running metre.

Item No.26 Providing laying and jointing in true line and level 25mm dia. U.P.V.C. Pipe (SCH- 40) for cold water including fittings as approved by Engineer In Charge. Pipe shall be fixed on the wall with the help of clamp at every two metre C/C or shall be concealed as directed including necessary fittings etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials.

1.0 MATERIALS

1.1 The pipe of specified diameter with UPVC (SCH-40) working pressure shall conform to I.S. 3076-1968. The specials and fittings required Shall be of best quality. The pipe shall be of Prince, Supreme, Astral or Finolex or equivalent company as directed by Engineer-in-charge.

2.0. WORKMANSHIP

2.1. The U.P.V.C. of specified diameter shall be fixed as directed. Due to thermal expansion of rigid U.P.V.C. due allowance shall be made particularly over around pipe lines for any change in length of pipe line which may occur during, installation or when pipe line is in service.

2.2. Above ground installation of rigid U.P.V.C. pipe should be undertaken after precautions are observed for protection against dirt sun ray and mechanical damage.

2.3. The rigid U.P.V.C. pipe lines should not be kept exposed above ground when it passes through public place. railway lines, roads, road side and footpaths.

2.4. U.P.V.C. pipes shall be supported at the followings intervals

- 20 mm. dia. 500 mm. - 25 mm. dia. 750 mm. - 32 mm. dia. 900 mm.
- 40 mm. dia. 1200 mm. - 50 mm. dia. 1500 mm.

2.5. Closet support spacings shall be provided, if recommended by the manufacturer.

2.6. The guide line indicated by the manufacturer regarding handling, transportation, storing, laying and jointing of pipes shall be kept in view during execution.

2.7. U.P.V.C. pipes shall be fixed on wall with wooden plugs and suitable clamps.

2.8. Jointing the pipes

- 2.8.1.** The pipes and sockets shall be accurately cut. The ends of the pipes and fitting should be absolutely free from dirt and dust. The outside surface of the pipes and the inside of the fittings shall then be roughened with emery paper, and then solvent cement shall be applied to the matching surface and pushed home and joint. Since solvent cement is aggressive to U.P.V.C. care must be taken to avoid applying excessive cement to the inside of pipe sockets as any surplus cement cannot be wiped off after jointing. Empty solvent cement tins, brushes, rags, or paper unpregnated with cement should not be buried in the trenches. They should be gathered, not left scattered about, as they can prove to be a hazard to animals which may chew them.
- 2.8.2.** If any manufacturer recommends its own methods of jointing the, same shall be adopted after necessary approval from the Engineer-in-charge.

2.9. Laying pipes in trenches

- 2.9.1.** The pipes shall be laid over uniform relatively soft fine grained soil found to be free of presence of hard objects such as large flints, rocky projections, large tree roots etc. The width of the trenches shall be minimum width required for working.
- 2.9.2.** The pipes laid underground shall not be less than one metre from the ground level. The pipe shall be positioned in the trenches so as to avoid any induced stresses due to reflection. Any deviation required shall be obtained by using proper type of rubber ring joints.

3.0. Mode of measurements & payment:

- 3.1.** The description of this item shall unless otherwise stated be held to include where necessary conveyance and delivery, handling, unloading, storing, fabrication, hoisting it, labour for finishing to required shape and size, testing, fitting in position, straight, cutting and waste, return of packing rig etc. complete.
- 3.2** The length shall be measured on running meter basis of finished work. The length shall be taken along the centre line of the pipe and

fitting. The pipes fixed to walls, ceiling, floors etc. shall be measured and paid under this item.

- 3.3.** All the work shall be measured in decimal system as fixed in its place, subject to tolerance given in below unless otherwise stated ::
 - [i] Dimension shall be measured to the nearest 0.01 meter.
 - [ii] Area shall be worked out to the nearest 0.01 Sq. meter.
- 3.4** All measurements of cutting shall unless otherwise stated be held to include the consequent waste.
- 3.5** In case of fitting of unequal bore the largest bore shall be measured for the test.
- 3.6** Testing of pipe lines, fittings and joints includes, or providing all plant and appliances necessary for obtaining access to the work to be tested and carrying out the tests.
- 3.7** The rate includes U.P.V.C. tubing with special type flange compressions, screwed joints, together with all fittings (such as bends, sockets, springs, elbows, toes, crosses, short pieces, clamps and unions etc.) and fixing complete with clamping wall hooks, wooden plugs etc. and also cutting, screwing and waste and for making forges (or hand made) bends on piping as required connector shall be inserted. Mule required or directed. The rate also includes cutting through floors etc. and their making good and painting exposed threads with anti-corrosive paint it above and testing. Where tubes are to be fixed to wall, ceiling and flooring, the rate shall not include painting of pipes, sleeves and sand filling under floor for which seprate payment shall be made.
- 3.8** The rate shall be for a unit of one running metre.

Item No.27 Providing laying and jointing in true line and level 40mm dia. U.P.V.C. Pipe (SCH- 40) for cold water including fittings as approved by Engineer In Charge. Pipe shall be fixed on the wall with the help of clamp at every two metre C/C or shall be concealed as directed including necessary fittings etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials.

1.0 MATERIALS

1.1 The pipe of specified diameter with UPVC (SCH-40) working pressure shall conform to I.S. 3076-1968. The specials and fittings required Shall be of best quality. The pipe shall be of Prince, Supreme, Astral or Finolex or equivalent company as directed by Engineer-in-charge.

2.0. WORKMANSHIP

2.1. The U.P.V.C. of specified diameter shall be fixed as directed. Due to thermal expansion of rigid U.P.V.C. due allowance shall be made particularly over around pipe lines for any change in length of pipe line which may occur during, installation or when pipe line is in service.

2.2. Above ground installation of rigid U.P.V.C. pipe should be undertaken after precautions are observed for protection against dirt sun ray and mechanical damage.

2.3. The rigid U.P.V.C. pipe lines should not be kept exposed above ground when it passes through public place. railway lines, roads, road side and footpaths.

2.4. U.P.V.C. pipes shall be supported at the followings intervals

- 20 mm. dia. 500 mm. - 25 mm. dia. 750 mm. - 32 mm. dia. 900 mm.
- 40 mm. dia. 1200 mm. - 50 mm. dia. 1500 mm.

2.5. Closet support spacings shall be provided, if recommended by the manufacturer.

2.6. The guide line indicated by the manufacturer regarding handling, transportation, storing, laying and jointing of pipes shall be kept in view during execution.

2.7. U.P.V.C. pipes shall be fixed on wall with wooden plugs and suitable clamps.

2.8. Jointing the pipes

- 2.8.1.** The pipes and sockets shall be accurately cut. The ends of the pipes and fitting should be absolutely free from dirt and dust. The outside surface of the pipes and the inside of the fittings shall then be roughened with emery paper, and then solvent cement shall be applied to the matching surface and pushed home and joint. Since solvent cement is aggressive to U.P.V.C. care must be taken to avoid applying excessive cement to the inside of pipe sockets as any surplus cement cannot be wiped off after jointing. Empty solvent cement tins, brushes, rags, or paper unpregnated with cement should not be buried in the trenches. They should be gathered, not left scattered about, as they can prove to be a hazard to animals which may chew them.
- 2.8.2.** If any manufacturer recommends its own methods of jointing the, same shall be adopted after necessary approval from the Engineer-in-charge.

2.9. Laying pipes in trenches

- 2.9.1.** The pipes shall be laid over uniform relatively soft fine grained soil found to be free of presence of hard objects such as large flints, rocky projections, large tree roots etc. The width of the trenches shall be minimum width required for working.
- 2.9.2.** The pipes laid underground shall not be less than one metre from the ground level. The pipe shall be positioned in the trenches so as to avoid any induced stresses due to reflection. Any deviation required shall be obtained by using proper type of rubber ring joints.

3.0. Mode of measurements & payment:

- 3.1.** The description of this item shall unless otherwise stated be held to include where necessary conveyance and delivery, handling, unloading, storing, fabrication, hoisting it, labour for finishing to required shape and size, testing, fitting in position, straight, cutting and waste, return of packing rig etc. complete.
- 3.2** The length shall be measured on running meter basis of finished work. The length shall be taken along the centre line of the pipe and

fitting. The pipes fixed to walls, ceiling, floors etc. shall be measured and paid under this item.

- 3.3.** All the work shall be measured in decimal system as fixed in its place, subject to tolerance given in below unless otherwise stated ::
 - [i] Dimension shall be measured to the nearest 0.01 meter.
 - [ii] Area shall be worked out to the nearest 0.01 Sq. meter.
- 3.4** All measurements of cutting shall unless otherwise stated be held to include the consequent waste.
- 3.5** In case of fitting of unequal bore the largest bore shall be measured for the test.
- 3.6** Testing of pipe lines, fittings and joints includes, or providing all plant and appliances necessary for obtaining access to the work to be tested and carrying out the tests.
- 3.7** The rate includes U.P.V.C. tubing with special type flange compressions, screwed joints, together with all fittings (such as bends, sockets, springs, elbows, toes, crosses, short pieces, clamps and unions etc.) and fixing complete with clamping wall hooks, wooden plugs etc. and also cutting, screwing and waste and for making forges (or hand made) bends on piping as required connector shall be inserted. Mule required or directed. The rate also includes cutting through floors etc. and their making good and painting exposed threads with anti-corrosive paint it above and testing. Where tubes are to be fixed to wall, ceiling and flooring, the rate shall not include painting of pipes, sleeves and sand filling under floor for which seprate payment shall be made.
- 3.8** The rate shall be for a unit of one running metre.

Item No.31 Providing and fixing Powder Coated Curtain road of standard quality as directed by engineer in charge including all materials and labours etc complete.

1.0 MATERIAL

The Powder Coated Curtain road shall be standard stainless steel as per the instruction of Engineer-in-charge.

2.0 WORKMANSHIP

The Powder Coated Curtain road shall be fixed in proper line and level with necessary with framing and dual tone material design approved by Engineer-in-charge

3.0 MODE OF MEASUREMENT AND PAYMENT

The payment shall be made on Sqmt basis.

Item No.32 Providing and fixing powder coated knob for curtain rod including all labour and material etc. complete.

4.0 MATERIAL

The powder coated knob for curtain rod shall be standard stainless steel as per the instruction of Engineer-in-charge.

5.0 WORKMANSHIP

The powder coated knob for curtain rod shall be fixed in proper line and level with necessary with framing and dual tone material design approved by Engineer-in-charge

6.0 MODE OF MEASUREMENT AND PAYMENT

The payment shall be made on Sqmt basis.

Item No.33 Providing, Supplying and Fixing in Position Roller Blind as per instruction of Engineer-in-Charge. The Fabric shall be Woven using either Polyester or Fibre Glass Materials. The selection of Fabric Category i.e. Privacy / Black Out or Sheer Shade shall be done by EIC.

7.0 MATERIAL

The roller blind curtain shall be standard stainless steel as per the instruction of Engineer-in-charge.

8.0 WORKMANSHIP

The roller blind curtain shall be fixed in proper line and level with necessary with framing and dual tone material design approved by Engineer-in-charge

9.0 MODE OF MEASUREMENT AND PAYMENT

The payment shall be made on Sqmt basis.

Item No.34 Repairs to doors, shutters of any size by providing necessary non teak wood members hardware fitting including oil paint, touching, labour charges etc. complete

1) MATERIALS

Non Teak wood shall confirm to M-29 fixture and fastenings shall confirm M-43 and material shall approved by Engineer-in-charge before provided / oil paint / primer shall confirm to 1959B and 19.71 general specification page no. 124&125.

2) WORKMANSHIP

- 2.1 Work shall be carried out as per requirement damage material shall be removed and refixing by newone materials
- 2.2 Primer and oil paint work shall be carried out for replaced members and also remaining parts of windows also.
- 2.3 Fixtures and fastening shall be provided as per instruction given by Engineer-in-charge before carried out the work.
- 2.4 Patch plaster and colour touching shall be carried out by contractor if occure during repairing.

3) Mode of measurement and payment

The rate includes cost of all labour and materials. The rates shall be for unit of Sqmt.

Item No.37 Providing and fixing any std. Company cruse model European W.C. Having size 710 x 370 x 810 mm snow white colour Trap as directed by Engineer in Charge.

1.0 MATERIALS

The European W.C. shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

Cruse model European W.C. Having size 710 x 370 x 810 mm snow white colour & model No.S1021113 S trap or s1021114 P Trap as directed by Engineer in Charge

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.38 Providing and fixing any std. Company cruse model Cistern snow white colour as directed by Engineer in charge

1.0 MATERIALS

The Cistern snow white colour shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

Cruse model Cistern snow white colour model No.S1060106 as directed by Engineer in Charge

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.39 Providing and fixing any std. Company cruse model soft close seat cover snow white colour as directed by Engineer in Charge.

1.0 MATERIALS

The soft close seat cover snow white colour shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

Cruse model soft close seat cover snow white colour model No.B1520118 as directed by Engineer in Charge

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.40 Providing and fixing any std. Company cruse model Twin flush fitting as directed by engineer in charge..

1.0 MATERIALS

The Twin flush. shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

Cruse model Twin flush fitting model no.B1810112 as directed by engineer in charge.

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.41 Providing and fixing any std. Company wall hung wash basin with half pedestal of snow white colour having size 510 X 400mm, Half pedestal

1.0 MATERIALS

The wall hung wash basin with half pedestal shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

The wall hung wash basin with half pedestal of snow white colour having size 510 x 400 mm, model no.S 2040101 wash basin & S2090102 Half pedestals

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.42 Providing and fixing any std. Company spactula single lever basin mixture as per the instruction of engineer in charge

1.0 MATERIALS

The spactula single lever basin shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

The spactula single lever basin mixture model no.F9030451 as per the instruction of engineer in charge.

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.43 Providing and fixing any std. Company wall mounte grab bar 600mm long as per instruction of engineer in charge.

1.0 MATERIALS

The wall mounted grab bar shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

The wall mounted grab bar 600mm long model no.B2210106 as per the instruction of engineer in charge.

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.44 Providing and fixing any std. Company wall mounted hinged rail 750 X 100 mm as per the instruction of engineer in charge

1.0 MATERIALS

The wall mounted hinged rail shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

The wall mounted hinged rail 750 x 100 mm model no.B2210108 as per the instruction of engineer in charge.

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.45 Providing and fixing any std. Company 228 mm long Bottle Trap as per instuction of engineer in charge.

1.0 MATERIALS

The Bottle Trap shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

The 228 mm long Bottle Trap Model No.F8060301 as per the instruction of engineer in charge.

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.46 Providing and fixing any std. Toilet Paper holder as per the instruction of engineer in charge

1.0 MATERIALS

The Toilet Paper holder shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

Toilet Paper holder Model No.5001109 as per the instruction of engineer in charge.

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.47 Providing and fixing any std. company health faucet ABC Body with wall hook & 1 mtr. PVC hose pipe as per the instruction of engineer in charge.

1.0 MATERIALS

The health faucet ABC Body with wall hook shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

The health faucet ABC Body with wall hook & 1 mtr. PVC hose pipe Model No.8030101 as per the instruction of engineer in charge.

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.48 Providing and fixing any std. company liquid soap dispenser as per the instruction of engineer in charge.

1.0 MATERIALS

The liquid soap dispenser shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

The liquid soap dispenser model No.F5002111 as per the instruction of engineer in charge

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.49 Providing and fixing any std. Company mirror size 700 X 500 mm, 5 mm thick glass mirror with double coat for protection and longevitibg grounded edge for safety and silver plating on the back for better reflection

1.0 MATERIALS

The mirror shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

Mirror size 700 x 500 mm, 5 mm thick glass mirror with double coat for protection and longevitibg grounded edge for safety and silver plating on the back for better reflection as directed by Engineer in Charge

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.50 Providing and fixing any company towel rail 450 mm long as per instruction of engineer in charge.

1.0 MATERIALS

The towel rail shall be 1st quality make as approved by the Engineer-in-charge.

2.0 Workmanship

The towel rail 450 nm long model no.F5003104 as per the instruction of engineer in charge.

3.0 MEASUREMENT AND PAYMENTS

The payment shall be made as per No. of basis.

Item No.51 Providing and fixing 50MM dia stainless steel railing having 304 Grade 1-MM thickness pipe hand rail with 16MM dia S.S. 304-grade support to wall and bend etc. complete.

1.0 MATERIAL

Stainless steel having 304 grade 1-mm thickness pipe hand rail of good quality (SS 304)

2.0 WORKMANSHIP

The stainless steel having 304 grade 1-mm thickness pipe hand rail with 16mm dia s.s. 304 grade support to wall and bend shall be good quality. The rail pipe shall be prepared from SS 304 stainless steel pipe shall be fixed on wall by clamping embedding wall / floor or other devices suggested by Engineer-in-charge. Buffing shall be made on pipe after three to four days of fixing in wall pipe shall be fixing in horizontal position and in line and level as suggested by Engineer-in-charge.

3.0 MODE OF MEASUREMENT

The rate shall be for a unit of One No.

Item No.59 Providing TMT Bar FE 500D reinforcement for R.C.C. work including bending, binding and placing in position complete upto floor two level.

1.0. GENERAL

This work shall consist of furnishing and placing **TMT Fe 500D Conforming to IS 1786 2008** reinforcement, bars (intentioned) of the shape and dimensions shown on the drawings and conforming to these Specifications or as approved by the Engineer in charge.

2.0. MATERIAL

2.1. TMT Bars

Reinforcements shall be **TMT Fe 500D** steel bars. They may be uncoated or coated 'with epoxy or with approved protective coatings.

2.2. TMT bars reinforcement for RCC work shall conform to IS 1786 FE-500D and shall be of tested quality. It shall also comply with relevant part of IS 456-1966

2.3. All reinforcement shall be clean and free from dirt, paint, grease or oil, oil scale or loose or thick rust at the time of placing

2.4. All steel shall be procured from original producers no re-rolled steel shall be incorporated in the work

2.5. Only new steel shall be delivered to the site every bar shall be inspected before placing to its position and defective brittle or burnt bar shall be discarded cracked ends of bars shall be discarded

3.0. Pitch

3.1. Distance between bars shall be as specified in drawings and as directed by the Engineer in Charge. all bars shall be placed at an accurate distance from each other and shall be bind tightly to maintain the desired pitch Suitable means shall be provided for holding bars securely in position

4.0. Binding wire

4.1. Mild steel binding wire shall be of 1.63 mm or 1.22 mm (16 to 18 gauge diameter and shall conform IS 280-1972

4.2. The use of black wire will be permitted for binding reinforcement bars. It shall be free from dirt, paint, grease or oil, oil scale or loose or thick rust and any other undesirable coating which may prevent adhesion of cement mortar at the time of binding

4.3. Only new binding wire shall be delivered to the site all binding wire shall be inspected before binding to its position and defective brittle, rusted, used wire, shall be discarded

5.0. PROTECTION OF REINFORCEMENT

5.1. Uncoated reinforcing steel shall be protected from rusting or chloride contamination. Reinforcements shall be free from rust, mortar, loose mill scale, grease, oil or paints. This may be ensured either by using reinforcement fresh from the factory or thoroughly cleaning all reinforcement to remove rust using any suitable method such as sand blasting, mechanical wire brushing, etc. as directed by the Engineer. Reinforcements shall be stored on bricks, racks or platforms and above the ground in a clean and dry condition and shall be suitably marked to facilitate inspection and identification.

5.2. Portions of uncoated reinforcing steel and dowels projecting from concrete shall be protected within one week after initial placing of concrete with a brush coat of neat cement mixed with water to a consistency, of thick paint. This coating shall be removed by lightly tapping with a hammer or other tool not more than one week before placing of the adjacent pour of concrete. Coated reinforcing steel shall be protected against damage to the coating. If the coating on the bars is damaged during transportation or handling and cannot be repaired, the same shall be rejected.

6.0. Workmanship

6.1. The work shall consist of furnishing and placing reinforcement to the shape and dimensions shown as on the drawings or as directed by The Engineer in charge.

6.2. Reinforcing steel shall conform accurate to the dimensions given in the bar bending schedules shown on relevant drawing

7.0. BENDING OF REINFORCEMENT

7.1. Bar bend g schedule shall be furnished by the Contractor and got approved by the Engineer before start of work.

7.2. Reinforcing steel shall conform to the dimensions and shapes given in the approved Bar bending Schedules.

7.3. Bars shall be bent cold to the specified shape and dimensions or directed by the Engineer using a proper bar bender operated by hand power to obtain the correct radius of bends and shape. Bars, shall not be bent or straightened in a manner that will damage parent material or the coating bars bent during transport or handling shall, be straightened before being used on work and shall not be heated to facilitate straightening.

8.0. PLACING OF REINFORCEMENT

8.1. The reinforcement cage should generally be fabricated in the yard at ground level, and then shifted and placed in position. The reinforcement shall be placed strictly, in accordance with the drawings and shall be assembled in position, only when structure is otherwise ready for placing of concrete. Prolonged time gap, between assembling of reinforcements and casting of concrete, which may result in rust formation on the surface, shall not be permitted.

8.2. Reinforcement bars shall be placed accurately in position as shown on the drawings. The bars, crossing one another shall be tied together at every intersection with binding wire (annealed), conforming to IS:280 to make the skeleton of the reinforcement rigid such that the reinforcement does not get

displaced during placing of concrete, or any other operation. The diameter of binding wire shall not be less than 1 mm.

8.3. Bars shall be kept in position usually by the following methods:

In case of beam and slab construction, industrially produced polymer cover blocks of thickness equal to the specified cover shall be placed between the bars and formwork subject to satisfactory evidence that the polymer composition is not harmful to concrete and reinforcement. Cover blocks made of concrete may be permitted by the Engineer, provided they have the same strength and specification as those of the member.

8.4. In case of dowels for Columns and walls the vertical reinforcement shall be kept in position by means of timber templates with slots in them accurately, or with cover blocks tied to the Reinforcement Timber templates shall be removed after the concreting has progressed up to a level just below their location.

8.5. Layers of reinforcements shall be separated by spacer bars at approximately One meter intervals. The minimum diameter of spacer bars shall be 12 mm or: equal to maximum size of main reinforcement or maximum size of coarse aggregate, whichever is greater. Horizontal reinforcement shall not be, allowed to sag between supports.

8.6. Necessary stays, blocks, metal chairs, spacers, metal hangers, supporting wires etc, or other subsidiary, reinforcement shall be provided to fix the reinforcements firmly in its correct position.

8.7. Use of pebbles, broken stone, metal pipe, brick, mortar or wooden blocks etc as devices for positioning reinforcement shall not be permitted.

8.8. Bars coated with epoxy or any other approved protective coating shall be placed on supports that do not damage the coating. Supports shall be installed in a manner such that planes of weakness are not created in hardened concrete. The coated reinforcing steel shall be held in place by use of plastic or plastic coated binding wires especially manufactured for the purpose.

8.9. Placing and fixing of reinforcement shall be inspected and approved by the Engineer before concrete is deposited.

9.0. Lapping

9.1. All reinforcement shall be furnished in full lengths as indicated on the drawing. No splicing of bars, except where shown on the drawing; will be permitted without approval of the Engineer. The lengths of the splice shall be as indicated on drawing or as approved by the Engineer. Where practicable, overlapping bars shall not touch each other, and shall be kept apart by 25 mm or 1 1/4 times the maximum size of coarse aggregate, whichever is greater. If this is not feasible, overlapping bars shall be bound with annealed steel binding wire, not less than 1 mm diameter and twisted tight in such a manner as to maintain minimum clear cover to the reinforcement from the concrete surface. Lapped splices shall be staggered or located at points, along the span where stresses are low.

10.0 Welding

10.1 Splicing by welding of reinforcement will be permitted only if detailed on the drawing or approved by the Engineer. Weld shall develop an ultimate strength equal to or greater than that of the bars connected.

10.2. While welding may be permitted for TMT reinforcing bars conforming to IS: 432, welding of deformed bars conforming to IS: 1786 shall in general be prohibited. Welding may be permitted in case of bars of other than S 240 grade including special. Welding grade of S 500D grade bars conforming to IS: 1786, for which necessary chemical analysis has been secured and the carbon equivalent (CE) calculated from the chemical composition using the formula:

$$CE = \frac{C + Mn + Cr + Mg + V + Ni + Cu}{6515}$$
 is 0.4 or less.

10.3. The method of welding shall conform to IS: 2751 and IS: 9417 and to any supplemental specifications to the satisfaction of the Engineer

10.4. Bars shall be bent cold to the specified shape and dimensions or as directed by Engineer in charge using the proper bender tool, operated by hand

or power to attain proper radius of bends. Bars shall not be bent or straightened in a manner that will injure the material. Bars bent during transport or handling shall be straightened before being used in the work. Bars shall not be heated to facilitate bending.

10.5. Unless otherwise specified a 'U' type hook at the end of each bar shall invariably be provided to main reinforcement. The radius of the bend shall not be less than twice the diameter of the round bar and the length of the straight part of the bar beyond the end of the curve shall be at least four times of the diameter of the round bar. In case of bars which are not round and in case of deformed bars, the diameter shall be taken as the diameter of circle having an equivalent effective area the hooks shall be suitably encased to prevent any spitting of the concrete.

10.6. All reinforcement bars shall be accurately placed in exact position shown on the drawings and shall be securely held in position during placing of concrete by annealed binding wire not less than 1 mm in size and by using say blocks or metal chairs spacers, metal hangers, supporting wires or other approved devices at sufficiently close intervals, Bars shall not be allowed to sag between supports not displaced during concreting or any other operations of the work All devices used for positioning shall be of not corrodible material wooden and metal supports shall not extend to the surface of the concrete, except where shown in drawings. Placing bars on layers of freshly laid concrete as the work progresses for adjusting bar spacing shall not be allowed. Pieces of broken stone or brick and wooden blocks shall not be used Layers of bars shall be separated by spacer bars pre-cast mortar blocks or other approved devices. Reinforcement after bending placed in position shall be maintained in a clean condition until completely embedded in concrete, Special care shall be exercised to prevent any displacement of reinforcement in concrete already placed. To prevent reinforcement from corrosion, concrete cover shall be provided as indicated on drawings. All bars protruding from concrete and to which other bars are to be laced and which are likely to be exposed for a

period exceeding 10 days shall be protected by a thick coat of neat cement grout

10.7. Bars crossing each other where required shall be secured by binding wire (annealed) of size not less than 1 mm in such a manner that they do not slip over at the time of fixing and concreting.

10.7. As far possible bars of full length shall be used In case this is not possible, overlapping of bars shall be done as directed by the Engineer in charge When practicable overlapping bars shall not touch each other, but be kept apart by 25 mm Where no feasible overlapping bars shall be bound with annealed wires not less than 1 mm thick twisted tight The overlaps shall be staggered for different bars and located at points along the span where neither shear nor bending moments is maximum.

10.8. Whenever indicated on drawing or desired the Engineer in charge bars shall be jointed by coupling which shall have a cross section sufficient to transmit the full stresses of bars The end of the bars that are jointed by coupling shall be upset for sufficient length so that the effective cross section at the base of threads is not less than the normal cross section of the bar. Threads shall be standard threads Steel for coupling shall conform to IS 226.

10.8. When permitted or specified on the drawings joints of reinforcement bars shall be butt-welded so as to transmit their full stresses Welded joints shall preferably be located at points when steel will not be subject to more than 75 percent of the maximum permissible stresses and welds shall be staggered so that at any one section not more than 20 percent of the rods are welded Only electric arc welding using a process which excludes air from the molten metal and conforms to any or other special provisions for the work shall be accepted Suitable means shall be provided for holding bars securely in position during welding It shall be ensured that no voids are left in welding and when welding is done in two or three stages previous surface shall be cleaned properly Ends of bars shall be cleaned of all loose scale rust scales paint and other foreign matter before welding Only competent welders shall be employed on the work.

The M S electrodes used for welding shall conform IS 814 Welded pieces of reinforcement shall be tested. Specimen shall be taken from the actual site and their number shall frequency to test shall be as directed by the Engineer in charge

11.0 MODE OF MEASUREMENTS & PAYMENT

11.1. For the purpose of payment the bar shall be measured correct up to 10 mm length and weight payable works out at the rate specified below

1.	6 mm.	0.22 Kg./Rmt.	8.	20 mm	2.47 Kg./Rmt.
2.	8 mm	0.39 Kg./Rmt.	9.	22 mm	2.98 Kg./Rmt.
3.	10 mm	0.62 Kg./Rmt.	10.	25 mm	3.85 Kg./Rmt.
4.	12 mm	0.89 Kg./Rmt.	11.	28 mm	4.83 Kg./Rmt.
5.	14 mm	1.21 Kg./Rmt.	12.	32 mm	6.31 Kg./Rmt.
6.	16 mm	1.58 Kg./Rmt.	13.	36 mm	7.99 Kg./Rmt.
7.	18 mm	2.00 Kg./Rmt.	14.	40 mm	9.86 Kg./Rmt.

11.1. Excess consumption over 5% will be charged at penal rate.

11.2. Reinforcement shall be measured in length excluding overlaps, no steel shall be given for lap but work may be carried out as per detailed drawings. Where welding or coupling is resorted to, in place lap joints, such joints shall be measured for payment as equivalent length of overlap as per design requirement. From the length so measured, the weight of reinforcement shall be calculated in tones on the same basis of as per table given above even though steel is supplied to the contractor by the department on actual weight. Length shall include hooks at the ends. Wastage and annealed steel wire for binding shall not be measured and the cost of these items shall be deemed to be included in the rate for reinforcement.

11.3. The rate for reinforcement includes cost of steel binding wires, including Lap, its carting with all leads and lifts, cutting, bending, placing in position, binding and fixing in position as shown on the drawings and as directed. It shall also include all devices for keeping reinforcement in approved position, cost of joining as per approved method and all wastage and spacer bars. bars. In

all RCC work structure design shall be prepared by contractor by Structural designer and cost shall be borne by contractor.

11.4. The rate shall be for a unit of One Kg.

Item No.60 Refixing old damaged paver block surface including taking out whole damaged blocks,correcting depressions by levelling with sand/grit layer &again refixing of old paver blocks using 15% new paver blocks of same pattern filling the joints using fine sand etc.complete.

1.0 Material

- i) Paver block of M-200 grade 60mm thick
- ii) Stone grit 6mm as per M-8, of general technical specification

booklet.

2.0 Workmanship

The work of refixing old damaged paver block shall be carried out in whole depression and damaged area of taking out whole damaged blocks and depressed block from the depressin area and correcting the depressions of leveling with grit layer. Proper ramming and watering shall be done of the entire depressed area.

After perpetration pf base with stone grit, ramming and watering at depressed area refixing of old paver block available from the damaged area shall be fixed using necessary new paver block of same pattern in cement concrete M-200 grade having 60mm thickness in place of old damaged paver block.

After refixing the paver block the joints shall be filling using fine sand.

The entire work shall be carried out as per the instruction of Engineer-in-charge.

The payment of this item shall be on Sqmt basis of the refixing surface area.

Item No.62 Box cutting the road surface to proper slope and camber for making a base for road work including removing the excavated stuff and depositing on the road side slope as directed upto 50Mt.lead.

1. Specification No. 162 and 553 of P.W.D. Hand Book volume II and the following additional specifications shall be here.
2. Cutting shall be done in proper grade & camber as per measurements given. Care must be taken that slopes are evenly and truly dressed. Cutting shall be done to the exact depth required and shall be as per formation level in proper grade and the camber. If extra depth of cutting is done due to negligence of contractor the same shall be refilled with approved quality of materials duly consolidated to the satisfaction of the Engineer-in-charge (without extra cost) Box cutting for soling and metalling in required width the depth shall be done.
3. The stuff received from the cutting shall be utilized for filling cuts and correcting side slopes of bank with all lead and lift directed. Useful Stuff shall be carefully stacked separately as directed,
4. The payment shall be made on Cmt. basis.

Item No.63 Providing and fixing pre-cast Rubber Dye / steel Dye inter locking concrete block 60mm thick with grade of concrete M300 pneumatic compressed / vibrated mechanically and as per approved design Confirming to IS 15658 : 2006 including 35 mm Sand layer for levelling and filling the joint with sand in proper line and level as per guidelines of IRC : SP 63-2018 etc. Complete.

1.0 Material

Pre-cast Rubber Dye/ Steel dye inter locking concrete block 60 mm thick with grade of concrete M30 compressed/ vibrated mechanically and as per approved design confirming to IS 15658: 2006 shall be used. Sand shall conform to general Technical Specifications for building works I. No. M6.

2.0 Workmanship

Work of sand layer shall be carried out as per General Technical specifications for Building works I. No. 4.24. Testing of the block shall be carried out in laboratory as per IS 15658: 2006. The work shall be carried out in true line and level as per guidelines of IRC : SP 63-2018 and as directed by the Engineer-in – charge.

3.0 Mode of Measurement and payment

The rate shall be inclusive of the cost of all materials, tools, plants, labour etc. required for satisfactory completion of item.

The rate shall be for a unit of one Sqmt.