Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item no. : 255
Providing and laying Semi mirror polished Hand Dressed (right angle) Kota stone slab in Skirting, Riser and Trade in Single Stone of an Even Grade And Shade (maximum 1.5 meter size) over 20 mm. (average thick base of cement mortar 1:6 (1 cement: 6 coarse sand) or L.M. 1:1.5 and laid over and jointed with grey cement slurry including rubbing and Semi mirror polishing Joint in line and Level making Smooth as per Instruction of Engineer Incharge etc complete.
25 mm thick

1.0 MATERIAL

1.0 Kota Stone Slab

1.1. Kota stone slab shall be hard even sound, and regular in shape and generally uniform in colour. The colour of the stone shall generally be green. Only Approved colored shall not be allowed for use. They shall be without any soft veins cranks of flaws Kota stone slab shall be hard, even, and regular in shape and it should without fault.

1.2. The size of the Kota stone slab to be used for flooring shall be of Full width or Depth of Riser or Trade as per Use in Single Piece (Maximum size of 1.5 meter) or as approved by Engineer in charge or Architect. However smaller sizes will be allowed to be used to the extent of maintaining required pattern. Thickness shall be as specified.

1.3. Tolerance of minus 3 mm. on accounts of chisel dressing of edges shall be permitted for length as well as breadth. Tolerance in thickness shall be + 1.50 mm.

1.4. The edges of Kota stone slab shall be truly chiseled and table rubbed with coarse sand before paving. All angles and edges of the stones of shall be true, square and free chipping and surface shall be true and plain.

1.5. The Kota stone slab shall have machine polished surface. When brought on site, the stones to be used for Trade, Riser, skirting, sink, veneering, sills, steps, etc.

2.0 WATER

2.1 Water shall not be salty brackish and shall be clean reasonably clear and free objectionable quantities of silt and traces of oil injurious alkalis salts organic matter and other deleterious material which will either weaken the mortar of concrete or cause efflorescence or attack the steel in RCC container for transport storage and huddling of water shall be clean, Water shall confirm to the standard specified in I S 455 -1978

2.2. If required by the Engineer in charge it shall be tested by comparison with distilled water compression shall be made by means of standard cement tests for soundness time of setting and mortar strength as specified in I S 269-1976 Any indication of unsoundness charge in time of setting by 30 minutes or more or decrease of more than 10 percent strength of mortar prepared with distilled water sample when compared with the result obtained with mortar prepared with distilled water shall be sufficient cause for rejection of water under test.

2.3 Water for curing mortar concrete or masonry should not be too acidic or too alkaline

2.4 It shall be free of elements which significantly affect the hydration reaction or otherwise interface with the hardening of mortar or concrete during curing or those which produce objectionable stains or other unsightly deposits on concrete or mortar surfaces

2.5 Hard and bitter water and sea water shall not be permitted for curing

2.6 Potable water will generally found suitable for curing mortar or concrete

2.7. Storage Water shall be stored in containers/ tanks covered at top and cleaned at regular intervals in order to prevent intrusion by foreign matter or growth of organic matter Water from shallow muddy or marshy surface shall not be permitted The intake pipe shall be enclosed to exclude silt, mud grass and other solid materials and there shall be a minimum depth of 0.60 m on water below the intake at all times

2.8. As a guide following concentrations represent the maximum permissible values

(a) to neutralize 200 ml sample of water using phenolphthalein as indicator, it should not require more than 2 ml of 0.1 normal NaOH

(b) To neutralize 200 ml of water using methyl orange as an indicator, it should not required more than 10 ml of 0.1 normal HCl

(c) the permissible limits for solids shall be as follows when tested in accordance with IS 3025

	Permissible limits (Max)
Organic	200 mg/lit
Inorganic	3000 mg/lit
Soleplates (SO_4)	500 mg/lit
Chlorides (Cl)	500 mg/lit
Suspended matter	2000 mg/lit

In case of tructures of length 30 m and below, the permissible limit of chlorides may be increased up to 1000 mg/lit

All samples of water (including potable water shall be tested and suitable measures taken where necessary to ensure conformity of the water to the requirements stated herein.

(d) The pH value shall not be less than 6

3.0 CEMENT

3.1. Cement to be used in the works shall be any of the following types with the prior approval of the Engineer:
a) Ordinary Portland cement, 33 Grade, conforming. to IS:269.
b) Rapid Hardening Portland cement, conforming to 1S:8041.
c) Ordinary Portland cement, 43 Grade, conforming to IS: 8112.
d) Ordinary Portland cement, 53 Grade, conforming to IS: 12269.
e) Soleplate Resistant Portland cement, conforming to IS: 12330.

3.2. Cement conforming to IS: 269 shall be used only after ensuring that the minimum required design strength can be achieved without exceeding the maximum permissible cement content of 540 kg/cum. of concrete.

3.3. Cement conforming to IS: 8112 and IS: 12269 may be used provided the minimum cement content mentioned elsewhere from durability considerations is not reduced. From strength considerations, these cements shall be used with a certain caution as high early strengths of cement in the 1 to 28-day range can be achieved by finer grinding and higher constituent ratio of C_3S/C_2S, where C3S is Tri-calcium Silicate and C_2S is Dicalcium Silicate In such cements, the further growth of strength beyond say 4 weeks may be much lower than that traditionally expected. Therefore, further strength tests shall be carried out for 56 and 90 days to fine tune the mix design from strength considerations.

3.4. Cement conforming to IS: 12330 shall be used when sodium soleplate and magnesium soleplate are present in large enough concentration to be aggressive to concrete. The recommended threshold values as per IS: 456 are soleplate concentration in excess of 0.2 per cent in soil substrata or 300 ppm (0.03 percent) in ground water. Tests to confirm actual values of soleplate concentration are essential when the structure is located near the sea coast, chemical factories, agricultural land using chemical fertilizers and sites where there are effluent discharges or where soluble soleplate bearing ground water level is high Cement conforming to IS:12330 shall be carefully selected from strength considerations to ensure that the minimum required design strength can be achieved without exceeding the maximum permissible cement content of 540 kg/cum. of concrete.

3.5. Cement confirming to IS 8041 shall be used only for pre cast concrete products after specific approval of the Engineer in charge

3.6. Total chloride content in cement shall in no case exceed 0.05 percent by mass of cement also total sulfur content calculated as sulfuric anhydride (SO_3) shall in no case

exceed 2.5 per cent and 3.0 percent when tri-calcium aluminate percent by mass in up to 5 or grater than 5 respectively

3.3. Storage
Cement shall be transported, handled and stored on the site in such a manner as to avoid deterioration or contamination, Cement shall be stored above ground level in perfectly dry and water tight sheds and shall be stacked not more than eight bags high. Wherever bulk storage containers are used their capacity should sufficient to cover to the requirement at site and should be cleaned at least once every 3 to 4 months

3.4. Each consignment shall be stored separately so that it may be readily identified and inspected and cement shall be used in the sequence in which it is delivered in any way, during storage shall not be used in the works and shall be removed from the site by the contractor without charge to the employer
The contractor shall prepare and maintain proper records on site in respect of delivery handling storage and use of cement and these records shall be available for inspection by the engineer in charge at all times
3.5. The contractor shall make a monthly return to the engineer in charge on the date corresponding to the interim certificate date showing the quantities of cement received and issued during the month in stock at the end of the month.

4.0 SAND
4.1 Sand shall be natural sand, clean well graded, hard strong durable and gritty particular free from immures amounts of dust, clay, kankar modules, soft: or flaky particles shall alkali salts, organic matter, learn mica or other deleterious substance and shall be got approved from the Engineer-in-charge. The sand shall not contain more than 8 percent of slit as determined by field test. if necessary the sand.
Coarse Sand: The fineness modules of coarse sand shall not be less than 2.5 and shall not exceed 3.0. The sieve analysis of coarse sand be as under:

I. S. Sieve Designation	% by wt. passing
4.75 mm	100
2.36mm	90 to 100
1.18 mm	70 to 100
600 MC	30 to 100
300 MC	85 to 70
150 MC	00 to 50

4.2 FINE SAND: The fineness module shall not exceed 1.0 the sieve analysis of fine sand be as under:

IS. Sieve Designation	% by wt. passing
4.75 mm	100
2.3 6mm	. 100
1.18 mm	75 to 100
600 MC	40 to 85

300 MC	05 to 50
150 MC	00 to 10

4.3 Materials shall be stored as to prevent their deterioration of their quality and fitness for the work. Any material which has deteriorated or has been damaged or is otherwise considered defective by the Engineer-in-charge shall not be used in the work.

5.0 WORKMANSHIP

5.1 Kota stone slab shall be of approved quality shall be laid evenly to level and slope as directed by Engineer in charge over a bed of a base layer consisting of cement mortar 1:6 (1 cement: 6 coarse sand by volume) or Lime Mortar 1:1.5 (1 lime : 1.5 lime putty by volume)

5.2 kota stone slab shall be laid evenly as per detailed drawing or as directed by Engineer in charge. Width, length and shape of Kota stone shall be as per pattern shown in detailed drawing.

5.3. Cement and sand for base layer shall be mixed in proportions of 1:6 (1 cement : 6 coarse sand by volume) Cement and sand shall be proportioned by volume after making due allowance for bulking. The require quantity of water shall then be added and the mortar mixed to produce workable consistency before mixing platform shall be thoroughly cleaned before changing from one type of cement to another.

5.4. The mixing for base layer shall be done intimately, the operation shall be carried out on clean water tight platform, and cement sand shall be first mixed dry in the required proportion to obtain uniform colour and then the mortar shall be mixed for at least two minutes after addition of water. In case of cement mortar, that has suffered because of evaporation of water the same shall be re-tempered by adding water as frequently as needed to restore the requisite consistency but its re-tempering shall be permitted only within thirty minute from the time of addition to water at the time of initial mixing.

5.5. Cement and sand for base layer shall be mixed in proportion as specified in the item, Cement and sand shall be proportioned by volume after making due allowance for bulking. The required quantity of water shall then be added and the mortar mixed to produce workable consistency.

5.6. Curing shall be started as soon as the mortar used for finished has hardened sufficiently no to be damaged when watered. It shall be kept wet for a period of at least 7 days. During this period, it shall be suitably protected from all damages;

5.7. During hot weather, all finished or partly finished work shall be covered or wetted in such manner as will prevent rapid drying of the flooring work.

5.8. Joints of Kota stone slab flooring shall be through and continuous throughout the building as directed by Engineer in charge

5.9. joints shall be filled with a stiff mixture of gray cement surly

5.10. The Kota stone slab Trade and Riser work shall be finished by rubbing and Semi Mirror polishing after the the work is set properly

6.0 MODE OF MEASUREMENT & PAYMENT :

6.1. The unit rate Kota stone slab flooring shall include the cost of all materials, tools and plant required for mixing, laying of base layer in true level and slope as required applying & placing stones in position, , finishing, curing etc flooring all over the length of walls and corners and sill of doors etc, and all other incidental expenses for producing flooring work to complete the structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work. The rate includes cost of Semi Mirror polishing of flooring and done work.

6.2 The rate shall include the cost of all materials and labours involved in all the operations described above. The kota stone flooring shall be measured in Square meter correct to 2 places of decimal. Length and breadth shall be measured to correct to a centimeter and between the finished the finished face of the skirting, dado or wall plaster and no deduction shall be made nor extra paid for any opening in floors or areas up to 0.1 square meters.

6.3 The rate shall be for a unit of one Square meter.

Deputy Executive Engineer	**Executive Engineer**
Project Implementation Unit	**Project Implementation Unit**
Zone- 6, Bharuch	**Zone- 6, Bharuch**

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item no:- 258

Providing and fixing 25 mm thick both side polish Kota stone shelves below platform, in store or in cupboards including fixing in position front edge machine cut polishing etc. complete.

Double side Polished Kota Stone 25mm thick shall be approved quality size and specification in general for Kota stone shall be as per Item no. M –49/ Page 16 of standards specification booklet for building works.

Polished Kota stones are approved size shall be machine cut at front side with necessary groove shall be made in wall and polish Kota stone shall be laid in line and level. Polish Kota stone shelves shall be fixed in cement mortar 1:3 (1 cement: 3 coarse sand) size of the polished Kota stone shall be obtained as per the site measurement.

Necessary polishing shall be done to polish kota stone top and sides and as directed by Engineer-in-charge. Outer edges of stone shall be made round by polishing as directed groove made in wall shall made good Y fixed with white cement mixed with pigments to match with colour and stone.

Work includes cost of materials and labour with polishing complete.

Measurement shall be taken for visible dimensions in length and width and shall be paid for a unit of 1 Sq.Mt.

Mode of Measurement: on Smt basis.

Mode of Payment: on Smt basis.

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bahruch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item No:- 452

Providing and fixing 110 mm dia of PVC rain water pipe of 6.0 kgf/cm2 working pressure with all fitting / fixtures, special flange compression type fittings, wall clips, shoe bend/ Pipe, bend and elbow of FINOLEX SUPRIME, KISHAN or PRINCE brand is used incl. filling the joints with spun yarn soaked in neat cement slurry and cement mortar 1:2 (1 cement : 2 fine sand) etc. Including making good the surface etc complete.

Materials and Workmanship:

The work shall be carried out as per Item no 23.8, page 154 except that dia of pipe will be 110mm.

Mode of Measurement and Payment:

As per item no 23.8, page no 173

Mode of measurement: The rate shall be for a unit of one Running Meter basis

Mode of Payment : The Payment shall be for a unit of one Running **Meter** basis including Bend, Shoe, Tee etc Complete

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item No: - 193

Providing & fixing at any height and in any size opening Goderej or equivalent make steel Goderej Type doors of 18 gauge M.S. Sheet with heavy frame & necessary fixtures, Locking arrangement and in attractive and Decorative Shed for fixing in Platform or wall cupboard etc. complete

1.0 MATERIAL

Readymade steel cupboard frame with M S steel shelves of proper size from approved manufacture

1.1. Steel cupboard shall be of M S Steel sheets confirming to 18 Gage thicknesses. The frame shall be bended in proper and required shape shutter shall be made of 20 Gage M S Steel sheets properly fitted with the frame with 150 mm long iron hinges, and chromium Plated handles of 100 mm size Properly fitted with the inside locking system. The steel cupboards shall be provided with necessary shelves of MS steel sheets of 20 Gauge thickness duly painted with spray paint

1.2 The steel cupboard shall be of quality approved by Engineer in charge and shall generally conform to the relevant Indian standard

1.3 The **steel cupboard** provide shall be with fitted on wall surface in front of Cupboard gap properly to close the gap in wall by drilling holes duly plugged by wooden gutties by appropriate size of screws as approved by Engineer in charge. Necessary shelves of M S Steel sheets shall be fitted as per requirements and direction of Engineer in charge

1.4. The Necessary fittings like, screws etc, shall be of best quality and makes as approved by the Engineer-in-charge.

1.5. The entire body of the steel cupboard frame and shutters shall be painted by spray painting of approved colour on all sides out side and inside as directed by Engineer in charge

2.0. WORKMANSHIP

2.1. When the **steel cupboard** are to be Fitted, the surface of wall or tiles shall not be damaged. The **steel cupboard** shall be fitted on walls carefully by drilling holes in surface of walls or tiled surface of wall carefully to cover entire gap of cupboard

3.0 MODE OF MEASUREMENT & PAYMENT:

3.1. The unit rate of steel cupboard shall include the cost of all materials, tools and plant required for fitting, the same to specified position as per drawings, and as directed

by Engineer in charge finishing structure, etc, and all other incidental expenses for producing item of steel cupboard work to complete the structure or its components as shown on the drawings, and as directed by Engineer in charge and according to these specifications. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

The rate of steel cupboard shall include the cost of all labor, materials, fittings as required, tools and plant scaffolding and all incidental expenses as described herein above.

3.2. The steel cupboard shall be measured for its Length or Width and height, limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one Square meter.

3.3. The payment will be made on square meter basis of the finished work. In all respect

Deputy Executive Engineer	**Executive Engineer**
Project Implementation Unit	**Project Implementation Unit**
Zone- 6, Bharuch	**Zone- 6, Bharuch**

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item no: - 376

Supplying & fixing PVC water tank such as Sintex including delivery at site, supply and fixing of inlet, outlet, air vent overflow, drainage sleves of the specified size, with necessary neo-prene gasket/packing/washers, GI washer & check nuts etc all complete as directed on terrace, lofts in bathrooms etc in any height. The rate shall include for fixing of any additional accessories supplied by the supplier. The necessary pedestal / supporting structures shall be measured under the relevant items

(A) Up to 5000 lts
(B) 300 - 5000 lts (Rate Analysis)

Materials : Approved PVC water tank of specified manufacturer

Workmanship : The Syntax water tank shall be supplied in Size As per Decided By Engineer In charge and fixed, and fitted on basis of the drawings furnished by the manufacturer, on purchase of the water tank. Whenever, staging is required for installations, designs and drawings for the same up to 2.0 mt. height shall be furnished again placement of order. Installation can also be done through the trained personnel of the dealer. The work shall be carried out in best workman like manner as directed by Engineer-in-charge.

Mode of Measurement and Payment:

The rate includes for all labour, materials, tools and equipment required to complete the work in satisfactory manner.

The rate shall be for an unit of liter.

Mode of measurement: The rate shall be for a unit of liter basis

Mode of Payment : The Payment shall be for a unit of liter basis

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch.

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item No :- 257

Providing and fixing 0.75 meter wide sand which type platform including supplying and fixing granite stone 18 mm thick mirror polished stones in top and side position and vertical strip at front over 25 mm thick polished kotah stone platform fixing in top and sides and intermediates supports fixing with cement mortar and adhesive and finishing including providing and fixing kitchen 600 mm x 450 mm x 150 mm size stainless steel sink at required position etc complete

1.0

General

The work shall consist of construction of sandwich type cooking platform with polished kota stone slabs jointed with cement mortar in accordance with the details shown on the drawings as approved by the engineer in charge having granite top and stainless steel sink. Only trained personnel shall be employed for construction work & supervision

2.0 MATERIAL

Kota Stone

2.0 HAND DRESSED MACHINE POLISHED BLUE KOTAH STONE

2.1. Kota stone shall be hard even sound, and regular in shape and generally uniform in colour. The colour of the stone shall generally be green. Brown coloured shall not be allowed for use. They shall be without any soft veins cranks of flaws

2.2. The size of the stone to be used for flooring shall be of size 600 mm x 600 mm and / or size 600 mm x 450 mm as directed. However smaller sizes will be allowed to be used to the extent of maintaining required pattern. Thickness shall be as specified.

2.3. Tolerance of minus 30 mm. on accounts of chisel dressing of edges shall be permitted for length as well as breadth. Tolerance in thickness shall be +3 mm.

2.4. The edges of stones shall be truly chiseled and table rubbed with coarse sand before paving. All angles and edges of the stones of shall be true, square and free chipping and surface shall be true and plain.

2.5. When machine cut edges are specified the exposed and the edges at joints shall be machine cut the thickness of the exposed machine cut edges shall be uniform.

2.6. The stones shall have machine polished surface. When brought on site, the stones shall be single polished or double polished depending upon its use. The stones for paving shall generally be single polished. The stones to be used for dado, partitions skirting, sink, veneering, sills, steps, etc. where machine polishing after the stones are fixed in situ is not possible shall be double polished.

3.0 Granite Stone Slab

3.1. Granite Stone Slab shall be hard even sound, and regular in shape and thickness generally having uniform approved colour and design. The colour of the stone shall generally be as approved by The engineer in charge. They shall be without any soft veins cranks of flaws

3.2. The size of the Granite Stone to be used for top of platform shall be as per details shown on the drawings and as directed by the Engineer in charge However smaller sizes will not be allowed, Granite Stone shall be in a single piece only

3.3. Tolerance of minus 30 mm. on accounts of chisel dressing of edges shall be permitted for length as well as breadth. Tolerance in thickness shall be +3 mm.

3.4. The edges of Granite Stone Slab shall be truly machine cut and machine polished. All angles and edges shall be true, square and free chipping and surface shall be true and plain.

3.5. When machine cut edges are specified the exposed and the edges at joints shall be machine cut and machine polished the thickness of the exposed machine cut machine polished edges shall be uniform.

3.6. The stones shall have mirror polished surface. When brought on site, the stones shall be single polished or double polished depending upon its use. The stones to be used for top slab shall be double polished.

4.0. WATER

4.1 Water shall not be salty brackish and shall be clean reasonably clear and free objectionable quantities of silt and traces of oil injurious alkalis salts organic matter and other deleterious material which will either weaken the mortar of concrete or cause efflorescence or attack the steel in R C C container for transport storage and huddling of water shall be clean, Water shall confirm to the standard specified in I S 455 -1978

4.2. If required by the Engineer in charge it shall be tested by comparison with distilled water compression shall be made by means of standard cement tests for soundness time of setting and mortar strength as specified in I S 269-1976 Any indication of unsoundness charge in time of setting by 30 minutes or more or decrease of more than 10 percent strength of mortar prepared with distilled water sample when compared with the result obtained with mortar prepared with distilled water shall be sufficient cause for rejection of water under test.

4.3 Water for curing mortar concrete or masonry should not be too acidic or too alkaline

4.4 It shall be free of elements which significantly affect the hydration reaction or otherwise interface with the hardening of mortar or concrete during curing or those which produce objectionable stains or other unsightly deposits on concrete or mortar surfaces

4.5 Hard and bitter water and sea water shall not be permitted for curing

4.6 Potable water will generally found suitable for curing mortar or concrete

4.7. Storage Water shall be stored in containers/ tanks covered at top and cleaned at regular intervals in order to prevent intrusion by foreign matter or growth of organic matter Water from shallow muddy or marshy surface shall not be permitted The intake pipe shall be enclosed to exclude silt, mud grass and other solid materials and there shall be a minimum depth of 0.60 m on water below the intake at all times

4.8. As a guide following concentrations represent the maximum permissible values

(a) to neutralize 200 ml sample of water using phenolphthalein as indicator, it should not require more than 2 ml of 0.1 normal NaOH

(b) To neutralize 200 ml of water using methyl orange as an indicator, it should not required more than 10 ml of 0.1 normal HCl

(c) the permissible limits for solids shall be as follows when tested in accordance with IS 3025

	Permissible limits (Max)
Organic	200 mg/lit
Inorganic	3000 mg/lit
Soleplates (SO_4)	500 mg/lit
Chlorides (Cl)	500 mg/lit
Suspended matter	2000 mg/lit

In case of structures of length 30 m and below, the permissible limit of chlorides may be increased up to 1000 mg/lit

All samples of water (including potable water shall be tested and suitable measures taken where necessary to ensure conformity of the water to the requirements stated herein.

(d) The pH value shall not be less than 6

5.0 CEMENT

5.1. Cement to be used in the works shall be any of the following types with the prior approval of the Engineer:

a) Ordinary Portland Cement, 33 Grade, conforming. to *IS:269.*

b) Rapid Hardening Portland Cement, conforming to 1S:8041.

c) Ordinary Portland Cement, 43 Grade, conforming to *IS:8112.*

d) Ordinary Portland Cement, 53 Grade, conforming to *IS:12269.*

e) Soleplate Resistant Portland Cement, conforming to *IS:12330.*

5.2. Cement conforming to IS:269 shall be used only after ensuring that the minimum required design strength can be achieved without exceeding the maximum permissible cement content of 540 kg/cum. of concrete.

5.3. Cement conforming to IS:8112 and IS:12269 may be used provided the minimum cement content mentioned elsewhere from durability considerations is not reduced. From strength considerations, these cements shall be used with a certain caution as high early strengths of cement in the 1 to 28-day range can be achieved by finer grinding and higher constituent ratio of C_3S/C_2S, where C3S is Tri-calcium Silicate and C_2S is Declaim Silicate In such cements, the further growth of strength beyond say 4 weeks may be much lower than that traditionally expected. Therefore, further strength tests shall be carried out *for* 56 and 90 days to fine tune the mix design from strength considerations.

5.4. Cement conforming to IS: 12330 shall be used when sodium soleplate and magnesium soleplate are present in large enough concentration to be aggressive to concrete. The

recommended threshold values as per IS:456 are soleplate concentration in excess of *0.2* per cent in soil substrata or 300 ppm (0.03 percent) in ground water. Tests to confirm actual values of soleplate concentration are essential when the structure is located near the sea coast, chemical factories, agricultural land using chemical fertilizers and sites where there are effluent discharges or where soluble soleplate bearing ground water level is high Cement conforming to IS:12330 shall be carefully selected from strength considerations to ensure that the minimum required design strength can be achieved without exceeding the maximum permissible cement content of 540 kg/cum. of concrete.

5.5. Cement confirming to IS 8041 shall be used only for pre cast concrete products after specific approval of the Engineer in charge

5.6. Total chloride content in cement shall in no case exceed 0.05 percent by mass of cement also total sulfur content calculated as sulfuric anhydride (SO_3) shall in no case exceed 2.5 per cent and 3.0 percent when tri-calcium aluminates per cent by mass in up to 5 or grater than 5 respectively

5.7. Storage

Cement shall be transported, handled and stored on the site in such a manner as to avoid deterioration or contamination, Cement shall be stored above ground level in perfectly dry and water tight sheds and shall be stacked not more than eight bags high. Wherever bulk storage containers are used their capacity should sufficient to cover to the requirement at site and should be cleaned at least once every 3 to 4 months

5.8. Each consignment shall be stored separately so that it may be readily identified and inspected and cement shall be used in the sequence in which it is delivered in any way, during storage shall not be used in the works and shall be removed from the site by the contractor without charge to the employer

The contractor shall prepare and maintain proper records on site in respect of delivery handling storage and use of cement and these records shall be available for inspection by the engineer in charge at all times

5.9 The contractor shall make a monthly return to the engineer in charge on the date corresponding to the interim certificate date showing the quantities of cement received and issued during the month in stock at the end of the month.

6.0 SAND

6.1 Sand shall be natural sand, clean well graded, hard strong durable and gritty particular free from immures amounts of dust, clay, kankar modules

6.2. For masonry works sand shall confirm to the requirements of IS: 2116

6.3. For plain and reinforced cement concrete (PCC and RCC) or pre stressed concrete (PSC) works fine aggregates shall consist of clean, hard strong and durable prices of crushed stone, crushed gravel or suitable combination of natural sand crushed stone or gravel, They shall not contain dust lumps soft or flaky materials mica or other deleterious materials in such quantities as to reduce the strength and durability of concrete, or to attack the embedded steel. Motorized sand washing machines should be used to remove impurities from sand. Fine aggregate having positive alkali-silica reaction shall not be used. All fine aggregates shall conform to IS L 383 and tests for conformity shall be carried out as per IS : 2386 (Part I to VIII) The contractor shall submit to the Engineer in charge the entire information indicated in Appendix A of IS : 383. The fineness modulus of fine aggregate shall neither be less than 2.00 nor greater than 3.5.

6.4. Sand fine aggregates for structural concrete shall conform to the following grading requirements as shown in the table below

6.5 Fine Sand: The fineness module shall not exceed 1.0 the sieve analysis of fine sand be as under:

S. Sieve Designation	% by wt. passing		
	Zone I	Zone II	Zone III
10 mm	100	100	100
4.75 mm	90-100	90-100	90-100
2.3 6mm	60-95	75-100	85-100
1.18 mm	30-70	55-90	75-100
600 MC	15-34	35-59	60-79
300 MC	5-20	8-30	12-40
150 MC	0-10	0-10	0-10

Coarse Sand: The fineness modules of coarse sand shall not be less than 2.5 and shall not exceed 3.0. The sieve analysis of coarse sand be as under:

I. S. Sieve Designation	**% by wt. passing**
4.75 mm	100
2.36mm	90 to 100
1.18 mm	70 to 100
600 MC	30 to 100
300 MC	85 to 70
150 MC	00 to 50

7.0. Proportion

7.1. The proportion of the cement mortar shall be 1:4 (1 part of cement by volume and 4 parts of sand by volume)

8.0 Stainless kitchen sink

The kitchen sink shall be made of stainless steel and of approved brand and make as approved by Engineer in charge.

9.0 Workmanship

.

Mixing of Mortar

9.1. The mixing of mortar shall be done intimately, the operation shall be carried out on clean water tight platform, and cement sand shall be first mixed dry in the required proportion turned over and over backwards and forwards several times till the mixture is of uniform colour Thereafter, minimum quantity of water shall be added to bring the mortar to the consistency of stiff paste. and then the mortar shall be mixed for at least two minutes after addition of water.

9.2 Mortar shall be mixed only in such quantity as required for immediate use. The mix s\which has developed initial set shall not be used. Initial set of mortar with ordinary Portland cement shall normally be considered to have taken place in 30 minutes after mixing.

9.3 In case mortar has stiffened during initial setting time because of evaporation of water the same can be re tempered by adding water as frequently as needed to restore the requisite consistency, nut this re-tempering shall not be permitted after 30 minutes Mortar unused for more than 30 minutes shall be rejected and removed from site.

9.4. In case of cement mortar, that has suffered because of evaporation of water the same shall be re-tempered by adding water as frequently as needed to restore the requisite consistency but its re-tempering shall be permitted only within thirty minute from the time of addition to water at the time of initial mixing.

9.5. The mixing shall preferably be done in a mechanical mixer operated manually or by power Hand mixing can be resorted to as long as uniform density of mix and its strength are assured subject to prior approval of Engineer in charge. Where permitted, specific permission is to be given by the Engineer in charge.

9.6. Cement and sand shall be mixed in specified proportions given in the drawing. Cement shall be proportioned by weight, taking the unit weight of cement as 1.44 tone per cubic meter, Sand shall be proportioned by volume taking into account due allowance for bulking All mortar shall be mixed with a minimum quantity of water to produce desired workability consistence with maximum density of mortar. The mix shall be clean and free from injurious type of soil/acid/alkali/organic matter or deleterious substances.

10.0 Proportion of Mix

10.1. Cement and sand shall be mixed in proportions of 1:4 (1 cement : 4 coarse sand) Cement and sand shall be proportioned by volume after making due allowance for bulking. The require quantity of water shall then be added and the mortar mixed to produce workable consistency. Before mixing platform shall be thoroughly cleaned before changing from one type of cement to another.

10.2. It shall be carried out on a water tight platform and care shall be taken to ensure that mixing is continued until the mass is uniform in colour and consistency.

11.0 Curing :

11.1. During hot weather, all finished or partly finished work shall be covered or wetted in such manner as will prevent rapid drying of the brick work.

11.2. Green cement work shall be protected form rain suitable. work shall be kept moist on all the faces for a period of seven days The Top of masonry work shall be kept well wetted at the close of the day

11.3 Immediately after compaction, concrete shall. be protected against harmful effects of weather, including rain, running water, shocks, vibration, traffic, rapid temperature charges, frost and driving out process shall be covered with wet jute bags or the similar absorbent material approved by the Engineer-in-charge soon after the initial set, and shall be kept continuously wet for a period of not less than 14 days from the date of placement. work *over-* the foundation concrete may be started after 48 hours of its laying but the curing of concrete shall be continued for a minimum period of 14 days.

11.4 After the final set, the concrete shall be kept continuously wet if required by pounding for a period of not less then 7 days form the date of placement. Hard and bitter water shall not be used for curing

12.0 Scaffolding

12.1 Scaffolding shall be sound strong and safe to withstand all loads likely to come upon it The holes which provide resting space for horizontal members shall be left in masonry under one meter in width or immediately near the skew backs of arches. the holes left in the masonry work for supporting the scaffolding shall be filled and made good Scaffolding shall be got approved by the Engineer in charge However the contractor shall be responsible for its safety.

13.0. Finishing of Surface

13.1 All work shall be finished in a workmanlike manner with the thickness of joints manner strking or tooling as described in these above specifications

13.1 Kota stone of approved quality shall be laid evenly to level and slope as directed by Engineer in charge over a bed of a base layer consisting of cement mortar 1:6 (1 cement: 6 coarse sand by volume) or Lime Mortar 1:1.5 (1 lime : 1.5 lime putty by volume)

13.5. Curing shall be started as soon as the mortar used for finished has hardened sufficiently no to be damaged when watered. It shall be kept wet for a period of at least 7 days. During this period, it shall be suitably protected from all damages;

13.6. During hot weather, all finished or partly finished work shall be covered or wetted in such manner as will prevent rapid drying of the flooring work.

14.0 Mode of Measurement & Payment :

14.1. The unit rate sandwich type platform shall include the cost of all materials required to produce the item of sandwich type platform including granite top and stainless steel sink, tools and plant required for mixing, placing in position, finishing as per direction of the Engineer-in-charge, curing and finishing all other incidental expenses for producing sandwich type platform of specified design to complete the structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

14.2. The sandwich type platform shall be measured for its **length** and limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one square meter.

14.3. The payment will be made on square meter basis of the finished work.

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch.

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item No :- 252

Providing & laying China mosaic type water proofing treatment on terrace including (a)applying neat cement slurry 2.75 Kg/Sqmt. of cement admixed with waterproofing component after cleaning the surface,(b) Providinf and laying cement concrete with brickbat 35 mm to 100 mm size in pattern Decided by Engineer Incharge in CM 1 :5 admixed with approved quality water proofing liquid compound over 20mm thick layer of CM 1:5 to required slope including rounding of junctions of walls and slab (c) After two days of proper curing applying a second coat of cement slurry (d) finishing the surface with 20mm thick CM 1:4 (e) applying broken china mosaic flooring for plain and curve surface 12mm to 20mm white colour broken piece of glazed tiles to be laid over 12mm thick cement mortar bedding of CM 1:3 to plain and slop and to be tampered to bring mortar cream up to surface with using white cement and incl. Rounding of junctions and extending them up to 15cm along the wall and curing with bends any mosaic flooring and finally finished surface with white cement slurry after finishing with terrace shall be finished with water for a period of two week

1.0 Material

WATER

1.1 Water shall not be salty brackish and shall be clean reasonably clear and free objectionable quantities of silt and traces of oil j\injurious alkalis salts organic matter and other deleterious material which will either weaken the mortar of concrete or cause efflorescence or attack the steel in R C C container for transport storage and huddling of water shall be clean, Water shall confirm to the standard specified in I S 455 -1978

1.2 If required by the Engineer in charge it shall be tested by comparison with distilled water compression shall be made by means of standard cement tests for soundness time of setting and mortar strength as specified in I S 269-1976 Any indication of unsoundness charge in time of setting by 30 minutes or more or decrease of more than 10 percent strength of mortar prepared with distilled water sample when compared with the result obtained with mortar prepared with distilled water shall be sufficient cause for rejection of water under test.

1.3 Water for curing mortar concrete or masonry should not be too acidic or too alkaline

1.4 It shall be free of elements which significantly affect the hydration reaction or otherwise interface with the hardening of mortar or concrete during curing or those which produce objectionable stains or other unsightly deposits on concrete or mortar surfaces

1.5 Hard and bitter water shall not be used for curing

1.6 Potable water will generally found suitable for curing mortar or concrete

2.0 CEMENT

2.1 Cement shall be ordinary Portland slag cement as per IS 1624 -1974 or Portland slag cement as per IS 455-1976

2.2 Cement shall be stored above the ground level in perfectly dry and water tight sheds. Wherever bulk storage containers are used, their capacity should be sufficient to cater to the requirements at site and should be cleaned at least once every 3 to 4 months. The aggregate shall be stored in such a way as to prevent admixture of foreign materials. Different size of fine or coarse aggregate shall be stored in separate stock-piles sufficiently away from the each other to prevent intermixing the materials.

3.0 SAND

3.1 Sand shall be natural sand, clean well graded, hard strong durable and gritty particular free from immures amounts of dust, clay, kankar modules, soft: or flaky particles shall alkali salts, organic matter, learn mica or other deleterious substance and shall be got approved from the Engineer-in-charge. The sand shall not contain more than 8 percent of slit as determined by field test. if necessary the sand.
Coarse Sand: The fineness modules of coarse sand shall not be less than 2.5 and shall not exceed 3.0. The sieve analysis of coarse sand be as under:

I. S. Sieve Designation	**% by wt. passing**
4.75 mm	100
2.36mm	90 to 100
1.18 mm	70 to 100
600 MC	30 to 100
300 MC	85 to 70
150 MC	00 to 50

3.2 FINE SAND: The fineness module shall not exceed 1.0 the sieve analysis of fine sand be as under:

IS. Sieve Designation	% by wt. passing
4.75 mm	100
2.3 6mm	. 100
1.18 mm	75 to 100
600 MC	40 to 85
300 MC	05 to 50
150 MC	00 to 10

3.3 Materials shall be stored as to prevent their deterioration of their quality and fitness for the work. Any material which has deteriorated or has been damaged or is otherwise considered defective by the Engineer-in-charge shall not be used in the work.

1.4. Water proofing compound
Water proofing compound shall be of approved quality and make as approved by Engineer in charge

1.5. Brick bats

Brick bat aggregates shall be broken form well burnt or slightly over burnt and dense bricks it shall be homogeneous in texture roughly cubical in shape clean and fee from dirt or any other foreign material brick bats shall be of 40 to 50 mm nominal size unless otherwise specified in the item the under burnt or over burnt bricks bats shall not be used

1.6. China mosaic tile pieces

China mosaic tiles pieces shall be of 40 mm to 75 mm nominal size and White color only. Tile pieces shall be made form hard and good quality of tiles.

1.7. WHITE CEMENT
White cement shall be of approved make it shall confirm definition of I S 8042 –E-1978 the sample of white cement shall be approved by Engineer in charge
WORKMAN SHIP

A. First of all surface of the entire terrace shall be cleaned by thoroughly booming and then by wire brushes all the loose material dust and derbies shall be removed thoroughly for the entire surface of the terrace

All joints and cracks shall be racked off and cut in v trench which shall be filled by neat cement slurry admixed with water proofing compound The joints with parapet shall be racked up to 30 cm height and shall be applied by neat cement slurry admixed with water proofing compound

Neat cement slurry shall be prepared and a water proofing compound of approved make shall be mixed with the slurry in proportion specified by the manufacturer of the compound and shall be laid throughout the surface of the terrace by the use of brushes mala etc Cement slurry shall be prepared by adding adequate quantity of water so as to spread it uniformly on the surface.

B. cement concrete 1:5:10 (using 50% of cement mortar 1:5 1part of cement and 5 part of coarse sand by volume admixed with water proofing compound of approved make in specified proportion) of specified thickness shall be laid (specification of cc 1:5:10 shall be followed for the execution of this layer) all over the surface of the terrace in true level and required slope including rounding of junctions of walls and slab

C. After two days of proper curing applying a second coat of cement slurry on entire surface of the terrace
D. the entire surface shall be finished with 20 mm thick C M 1:4 and china mosaic tilling in true level and slope as directed by Engineer in charge & finally finishing the surface with trowel with white cement slurry (specification of white glaze tiles flooring shall be followed for the execution of this item.)

E. finishing the surface with 20 mm thick C M 1:4 and china mosaic tilling & finally finishing the surface with trowel with white cement slurry
F. After two days proper curing the terrace shall be flooded for 15 days.

7.0 MODE **OF MEASUREMENT & PAYMENT:**

7.1. The unit rate flooring shall include the cost of all materials, tools and plant required for mixing, laying of base layer in true level and slope as required applying & placing stones in position, compacting, finishing, curing mirror polishing, providing treatment of 30 cm high all over the length of parapets and corners and sill of doors etc, and all other incidental expenses for producing flooring work to complete the structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

The rate of Water Proofing shall include the cost of all labour, materials tools and plant scaffolding and all incidental expenses as described herein above.
7.2. The Water Proofing r work shall be measured for its **length** and **width**, limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one square meter.

7.3. The payment will be made on square Meter basis of the finished work. **It includes Guaranty Bond of 10 Year Performance after Completion of work (item)**

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch.

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item No. : 217

Providing & fixing in position standard extruded Aluminum Partition with Colour anodized hollow section frame (any Span Should not be wide than 0.90 mtr)of approved shade & pivoted single shutter fabricated from aluminum standard section for outer frame size 101 mm x 44.5 mm (of app. Wt. 1.2 kg / Rmt.) and door styles and top rail of aluminum section size 47.5mm x 44.5 mm (of app. Wt. 1.05 kg/ Rmt.) Bottom rail & lock rail for door of size 114mm x 44.5mm (of app. Wt 1.30 Kg./Rmt.) and providing rubber gasket and glazing chips around the glass allover including providing heavy handle, heavy lock, Door Closer, bracket, stoppers. 5 mm th. transparent float glass of copper/ gray tint (Structural Glass) fixed with transparent silicon gasket and 9 mm both side prelaminated Sheet in bottom panel including all required materials labours and equipments as per detailed drwg. as directed.

MATERIAL

Aluminum standard section

1.1 Main outer frame of aluminum standard section

Aluminum alloy used in the manufacture of extruded windows sections shall conform to IS designation HEA-WP of IS 733-1975 and also to IS Designation WVG-WP of IS 1285-1975 The section shall be as specified in the drawing and design

Outer frame shall be of standard Colour anodized Aluminum hollow sections of **having weight per Rmt** as described in details in item of schedule B

All sections shall be Free from any scratches or holes or any damages on surface. All section shall have finished luster surface on all sides. All sections shall be of best quality and free from any defect and shall be undamaged in carriage and handling either by rubbing off of anodizing or surface or otherwise. And free from all defects such as Scratches cracks, holes, deformities chipped edges or other wise damaged.

1.2 Shutter frame of aluminum standard section

Aluminum alloy used in the manufacture of extruded windows sections shall conform to IS designation HEA-WP of IS 733-1975 and also to IS Designation WVG-WP of IS 1285-1975 The section shall be as specified in the drawing and design

Frame of shutters shall be of standard colour anodized Aluminum hollow sections **having weight per Rmt** as described in details in item of schedule B

All sections shall be Free from any scratches or holes or any damages on surface. All section shall have finished luster surface on all sides. All sections shall be of best quality and free from any defect shall be undamaged in carriage and handling either by rubbing off of anodizing or surface or otherwise. And free from all defects such as Scratches cracks, holes, deformities chipped edges or other wise damaged.

1.2 Glazing clits

Glazing clits shall be of standard colour anodized Aluminum standard sections **having weight per Rmt** as described in details in item of schedule B

Glazing clits shall be Free from any scratches or holes or any damages on surface. Glazing clits shall have finished luster surface on all sides. All sections shall be of best quality and free from any defect shall be undamaged in carriage and handling either by rubbing off of anodizing or surface or otherwise. And free from all defects such as Scratches cracks, holes, deformities chipped edges or other wise damaged.

1.3 Rubber Gasket

Rubber gasket shall be of best quality and free from any defect shall be undamaged in carriage and handling either by rubbing off of surface or otherwise. And free from all defects such as Scratches cracks, holes, deformities tea red edges or other wise damaged.

2.0 Colour tinted glass
For glazing and framing purpose shall conform to IS 1761-1960

Colour tinted glass shall be of the best quality, free from specks, bubbles, smokes, veins, air holes, blisters and other defects. The kind of glass to be used shall be mentioned in the item of specification of in the special provision or as shown in the detailed drawings. The thickness of glass panels shall be uniform. The specification for different kinds of glass shall be as under.

Colour tinted glass shall be patent flattened glass of best quality and of approved colour and quality and shall be of best quality and free from any defect. Colour tinted glass of the specified colours shall be used, if so shown on detailed drawings or so specified. For important buildings and for panes with any dimension over 900 mm plate glass of specified thickness shall be used.

The thickness of the Colour tinted glass shall be as per prescribed in description of the item the glass

3.0 12 mm thick Laminated Particle Board

The particle boards shall conform to I.S. 3087-1965 "Specification for wood particle board for general purpose. The size and the thickness shall be as indicated

For execution of this item specification of material as per item **M-40** shall be followed for booklet of Building specifications

Particle board shall be of best quality and free from any defect and shall be undamaged in carriage and handling either by rubbing off of lamination or surface or otherwise. And free from all defects such as Scratches cracks, holes, deformities chipped edges or other wise damaged.

The Laminated Particle Board used for face panels shall be best quality free from any defects. The Laminated Particle Board shall be made with phenol formaldehyde adhesive. The Laminated Particle Board shall conform to I.S. 3087-1965 "Specification for wood particle board for general purpose. " The size and the thickness shall be indicated

4.0. Fixtures

4.1 Floor spring

Floor spring shall be of approved make and brand and free form any defect Top cover shall be of best quality with luster surface and free form any defect like scratches or holes etc and shall be undamaged in carriage and handling either by rubbing off of anodizing or surface or otherwise. Internal mechanism of the unit shall be in perfect working condition and shall be tested as directed by the Engineer in charge

4.2 Anodized Aluminum Handle

Handle of anodized aluminum shall be heavy type handles of approved size and quality of approved make and shall be fixed in position as directed by Engineer in charge Handle shall be of best quality and free from any defect like scratches or holes etc and shall be undamaged in carriage and handling either by rubbing off of anodizing or surface or otherwise

5.0 WORKMANSHIP

The door shall be fabricated as shown in detail architectural drawing and as per instruction of engineer in charge, only approved material shall be used in door colour of anodizing shall be approved colour and shall be anodized up to the satisfaction of engineer in charge. Completed door shall be fixed in position in true line and level and shall be got tested as shown in the drawing as per instruction of engineer in charge.

6.0 Mode of Measurement & Payment :

6.1. The unit rate of colour anodized aluminum Partition shall include the cost of all materials, cost of colour anodizing, cost of fabrication of door unit with all necessary fixtures and fastenings, labour charges for fixing frames, shutters and fixing the door in wall at the place shown in drawing and as instructed by Engineer in charge, all tools and plant required for assembling and fixing in position, finishing as per direction of the Engineer-in-charge, and all other incidental expenses for preparing window frame and shutter of specified size to complete the door structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and making walls good by plaster patch colour etc as required

6.2. The aluminum doors shall be measured for its **length and breadth** limiting dimensions to those specified on plan or as directed.

6.3. The payment will be made on square Meter basis of the finished work.

6.4. The rate shall be for a unit of one square meter.

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item No. : 216

Providing & fixing in position standard extruded Aluminum Partition with Color anodized hollow section frame of approved shade & pivoted without shutter fabricated from aluminum standard section for outer frame size 101 mm x 44.5 mm (of app. Wt. 1.2 kg / Rmt.) and door styles and top rail of aluminum section size 47.5mm x 44.5 mm (of app. Wt. 1.05 kg/ Rmt.) Bottom rail & lock rail for door of size 114mm x 44.5mm (of app. Wt Kg./Rmt.) and providing rubber gasket and glazing chips around the glass allover including providing heavy handle, heavy lock, bracket, stoppers. 5 mm th. transparent float glass of copper/ gray tint (Structural Glass) fixed with transparent silicon gasket including all required materials labours and equipments as per detailed drwg. as directed.

MATERIAL

Aluminum standard section

1.1 Main outer frame of aluminum standard section

Aluminum alloy used in the manufacture of extruded windows sections shall conform to IS designation HEA-WP of IS 733-1975 and also to IS Designation WVG-WP of IS 1285-1975 The section shall be as specified in the drawing and design

Outer frame shall be of standard Colour anodized Aluminum hollow sections of **having weight per Rmt** as described in details in item of schedule B

All sections shall be Free from any scratches or holes or any damages on surface. All section shall have finished luster surface on all sides. All sections shall be of best quality and free from any defect and shall be undamaged in carriage and handling either by rubbing off of anodizing or surface or otherwise. And free from all defects such as Scratches cracks, holes, deformities chipped edges or other wise damaged.

1.2 Shutter frame of aluminum standard section

Aluminum alloy used in the manufacture of extruded windows sections shall conform to IS designation HEA-WP of IS 733-1975 and also to IS Designation WVG-WP of IS 1285-1975 The section shall be as specified in the drawing and design

Frame of shutters shall be of standard Colour anodized Aluminum hollow sections **having weight per Rmt** as described in details in item of schedule B

All sections shall be Free from any scratches or holes or any damages on surface. All section shall have finished luster surface on all sides. All sections shall be of best quality and free from any defect shall be undamaged in carriage and handling either by

rubbing off of anodizing or surface or otherwise. And free from all defects such as Scratches cracks, holes, deformities chipped edges or other wise damaged.

1.2 Glazing clits

Glazing clits shall be of standard Colour anodized Aluminum standard sections **having weight per Rmt** as described in details in item of schedule B

Glazing clits **shall** be Free from any scratches or holes or any damages on surface. Glazing clits **shall** have finished luster surface on all sides. All sections shall be of best quality and free from any defect shall be undamaged in carriage and handling either by rubbing off of anodizing or surface or otherwise. And free from all defects such as Scratches cracks, holes, deformities chipped edges or other wise damaged.

1.3 Rubber Gasket

Rubber gasket shall be of best quality and free from any defect shall be undamaged in carriage and handling either by rubbing off of surface or otherwise. And free from all defects such as Scratches cracks, holes, deformities tea red edges or other wise damaged.

2.0 Colour **tinted glass**

For glazing and framing purpose shall conform to IS 1761-1960

Colour tinted glass shall be of the best quality, free from specks, bubbles, smokes, veins, air holes, blisters and other defects. The kind of glass to be used shall be mentioned in the item of specification of in the special provision or as shown in the detailed drawings. The thickness of glass panels shall be uniform. The specification for different kinds of glass shall be as under.

Colour tinted glass shall be patent flattened glass of best quality and of approved Colour and quality and shall be of best quality and free from any defect. Colour tinted glass of the specified colors shall be used, if so shown on detailed drawings or so specified. For important buildings and for panes with any dimension over 900 mm plate glass of specified thickness shall be used.

The thickness of the Colour tinted glass shall be as per prescribed in description of the item the glass

1.0 12 **mm thick Laminated Particle Board**

2.0

The particle boards shall conform to I.S. 3087-1965 "Specification for wood particle board for general purpose. The size and the thickness shall be as indicated

For execution of this item specification of material as per item **M-40** shall be followed for booklet of Building specifications

Particle board shall be of best quality and free from any defect and shall be undamaged in carriage and handling either by rubbing off of lamination or surface or otherwise. And free from all defects such as Scratches cracks, holes, deformities chipped edges or other wise damaged.

The Laminated Particle Board used for face panels shall be best quality free from any defects. The Laminated Particle Board shall be made with phenol formaldehyde adhesive. The Laminated Particle Board shall conform to I.S. 3087-1965 "Specification for wood particle board for general purpose. “The size and the thickness shall be indicated

4.0. Fixtures as per Requirement on Site if Any

5.0 WORKMANSHIP

The door shall be fabricated as shown in detail architectural drawing and as per instruction of engineer in charge, only approved material shall be used in door colour of anodizing shall be approved Colour and shall be anodized up to the satisfaction of engineer in charge. Completed door shall be fixed in position in true line and level and shall be got tested as shown in the drawing as per instruction of engineer in charge.

6.0 Mode of Measurement & Payment:

6.1. The unit rate of Colour anodized aluminum Partition shall include the cost of all materials, cost of Colour anodizing, cost of fabrication of door unit with all necessary fixtures and fastenings, labour charges for fixing frames, shutters and fixing the door in wall at the place shown in drawing and as instructed by Engineer in charge, all tools and plant required for assembling and fixing in position, finishing as per direction of the Engineer-in-charge, and all other incidental expenses for preparing window frame and shutter of specified size to complete the door structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and making walls good by plaster patch Colour etc as required

6.2. The aluminum doors shall be measured for its **length and breadth** limiting dimensions to those specified on plan or as directed.
6.3. The payment will be made on square Meter basis of the finished work.
6.4. The rate shall be for a unit of one square meter.

Deputy Executive Engineer	**Executive Engineer**
Project Implementation Unit	**Project Implementation Unit**
Zone- 6, Bharuch	**Zone- 6, Bharuch**

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item No: - 484

Repairing and removing existing chamber of brick masonry chamber to match it with road level including providing and fixing SFRC IS 12592 cover with frame etc Complete including brick work in cm 1:6 and 15 mm thick Cement Plaster in CM 1:4 to raise the height to match the level with road/Paving etc complete as directed.

Material:-

Water:

Water shall be clean reasonably clear and free from Objectionable Quantities of silt and Trace of oil injurious alkalies salts organic matter and other dielectrics material which will either weaken the mortar of concrete of cause effloserance of attack the steel in RCC container for transportation storage and huddling of water shall be clean water shall confirm standard specification in I.S. 455 -1978

Sand:

Sand Shall be natural sand clean graded hard strong durable and gritty Particular free from immures amount of dusty clay kankar modules confirming to I.S. 2116

Course Aggregate:-

The Material Should be as per Specification of Material No. M -12 of Specification booklet

Brick : - Specification of Building work booklet item no M- 14 shall be followed for the execution of this item

Cement : - Specification of Building work booklet item no M- 3 shall be followed for the execution of this item

SFRC COVER :-

SFRC cover shall be of best quality and as approved by Engineering Charge thickness and weight shall be of as per manufacturer's standards

4.0. WORKMANSHIP

FITTING & FIXING

Specification of item of Brick work and Half Brick masonry wall shall be follow for constructing the Brick masonry chamber.

Specification of item of plaster shall be follow for constructing the Brick masonry chamber

SFRC cover and frame shall be fitted as directed by engineering charge

TESTING OF JOINTS

Brick masonry chamber shall be inspected under working conditions of pressure and flow. Any joints found liken shall be redone, and all leaking Brick masonry chamber. shall be removed and replaced without extra cost.
The Brick masonry chamber shall be tested in sections as the work laying proceeds, veeping the joints exposed for inspection during the testing.

5.0 MODE **OF MEASUREMENT & PAYMENT:**

5.1. The unit rate of repairing the Existing Damaged Brick masonary chamber. shall include the cost of all materials, tools and plant required for fitting, the same to specified position as per drawings, and as directed by Engineer in charge finishing structure, etc, and all other incidental expenses for producing item of Brick masonary chamber. Work to complete the structure or its components as shown on the drawings, and as directed by Engineer in charge and according to these specifications. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.
The rate of Brick masonary chamber shall include the cost of all labour, materials, SFRC cover & frame as required, tools and plant scaffolding and all incidental expenses as described herein above.

5.2. The repairing of the Existing Damaged Brick masonary chamber shall be measured for its **Number** of any existing size or as directed. The rate shall be for a unit of one Number.

5.3. The payment will be made on number basis of the finished work.

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item No. :- 184

Providing and Fixing 30mm thick FACTORY MADE SOLID PANEL PVC DOOR SHUTTER consisting of frame made out of M.S.tubes of 19 gauge thickness and size of 19 mm x 19 mm for stiles & 15 mm x 15 mm for top & bottom rails. M.S.frame shall have a coat of steel primers of approved make and manufacture. M.S.frame shall be covered with 5 mm thick heat moulded PVC "C" channel of size 30x50 mm forming stiles, and 5 mm thick, 75 mm wide PVC sheets for top rail, lock rail and bottom rail on either side, and 10 mm (5 mm x 5) thick, 20 mm wide cross PVC sheet as gap insert for top rali & bottom rail. Panelling of 5 mm thick PVC sheet to be fitted in the M.S.frame welded / Sealed to the stiles rails with 30 mm wide x 5 mm thick PVC sheet beading on eighter side, and joined together with solvent cement adhesive, An additional 5 mm thick PVC strip of 20 mm width is to be stcuk on the interior side of the "c" channel using PVC solvent cement adhesive etc. complete as per direction of Engineer-incharge, manufacture"s specification & drawing.

SB.2 FACTORY MADE SOLID PVC DOOR SHUTTERS
SB.2.1 FACTORY MADE SOLID PANEL PVC DOOR SHUTTER.

30mm thick Factory Made Solid Panel PVC Door shutter consisting of frame made out of M.S. tubes of 19mm x 19mm for stiles, & 15mm x 15mm for top & bottom rails. M.S. frame shall be covered with 5mm thick heat molded PVC sheet ‘C’ channel having a 5mm thick PVC sheet strip of 20mm width stuck inside with solvent cement, forming stiles. and 5mm thick PVC sheets for top rail, lock raii & bottom rail on either side, and 10mm (5mm x 2) thick, 20mm wide cross PVC sheet as gap insert for top rail. & bottom rail. Paneling of 5mm PVC sheet to be fitted in the M.S. frame evaded / sealed to the stiles & rails with PVC sheet beading, and joined together with solvent cement adhesive etc. complete as per direction of Engineer in charge, manufacture’s in-saturations and drawing. The width of stiles & rails will be in proportion to the width of the door stutter as detailed below.

Door width (in feet)	Stiles Size	Rails Size	Remark
Feet.	mm	mm	
1.5’ up to 2’	50mm	50mm	
More than 2’ up to 2.5’	50mm	75mm	
More than 2.5’ up to 3’	75mm	100mm	Gap insert of 15mm to be provided between stiles and
More than 3’	100mm	125mm	

			rails & Panel.

for doors of sizes larger than 17.5 sq. ft. an additional 15mm x 15mm 19gauge M.S. Square tube shall be welded to the M.S. frame below he top rail square tube keeping a gap of 50mm between the two M.S. square tubes. In the case of double leaved shutters the meeting stiles shall be rebated 20mm as shown on drawing. The rebating shall be square, as directed.

SECTION 8 – JGINERY

Factory Made Solid Panel PVC Door shutters shall conform to the below mentioned permissible limit as per testing methods provided in IS 4020.

Sr.No.	Test	Permissible Limit
01	Dimensions Sureness	Width + 3 mm Height + 3mm Difference in Diagonals : Not more than 3mm
02	General flatness test	No twisting cupping or warping shall be observed
03	Local paleness tats	Depression all 10 points at the panel areas shall be less than 0.5mm.
04	Impact indentation test	Indentation shall be less than 0.3mm
05	Edge loading test	initial max. deflection shall not be more than 5mm Residual deflection shall be not more than 0.5mm.
06	shock resistance test	No visible damage shall be observed.
07	Buckling test	Initial deflection shall not be greater than 90mm Residual deformation after 15 minutes of unloading shall not be greater than 5mm.
08	Slamming test	No visible damages shall be observed to any part of the door.
09	Misuse test	No permanent deformation of the fixing or any other part of the door shutter in hindering its normal working shall be observed
10	Screw withdrawal resistance test.	Face : 1400N Edge : 1500N

8B.2.2 Printed Solid Panel PVC Door Shutters

Solid Panel PVC Door as in 8B.2.1 but made using printed PVC sheet and panel to be fitted in the M.S. frame welded / scaled to the stiles & rails with 5mm thick.x.15mm wide

PVC sheet beading on inner side of panel and decorative PVC beading of 10mm x 10mm (90) is used on other side of panel.

8B.2.3 Single Side Prelim Solid Panel PVC Door Shutter.

Solid Panel PVC Door as in 8B.2.1 but made using prelim PVC sheet and Single Side prelim panel to be fitted in the M.S. frame & sealed directly without beading to the front (prelim side)

Mode of Measurement and payment:-

The Rate Includes the Cost of Frame and Shutter with Necessary Aluminum Fixtures

Measurement shall be recorded on Smt. Basis in length and breath or height With Frame for clear visible area up to limiting dimension 0.01 meter

Payment shall be made for a unit of one Smt. Of Door Shutter With Frame up to limiting dimension 0.01 Square meter

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item no :- 381

Providing and fixing 90 C.M. high MS railing for balconies, terrace parpets, ramp etc. with necessary hold fast inserted in floor and fill with concrete(1:2:4) with 40mm dia heavy duty MS pipe on top and 20 mm x 20mm Square Vertical balustrade 30cm C/C as approved square bars Balusters @ spacing 30 cm c/c and 35 X 5 mm Flat 2.0 no along 0.30 cm height from bottom with as per approved design and as per instruction of engineer in charge pattern including cutting, bending, welding, fixing and applying three coats of approved brand with primer and two coat of paint etc. complete

1.0. MATERIAL
1.0. STRUCTURAL STEEL

1.1. G.I. Round pipes
The round pipes shall be of 40 mm size with medium grade of quality .

1.2 M.S. square bars

All structural steel shall confirm I S 226 – 1985. The steel shall be free from the defects mentioned in IS 226-1975 and shall have a smooth finish. The material shall be free from loose mill scale rust pits or other defects affecting the strength and durability

2.0. OIL PAINTS

2.1. Oil paint shall be of specified colour and as approved by the Engineer in charge The ready mix paints shall only be used however, if ready mixed paint of specified shade or tint is not available white ready mixed paint with approved strainer will be allowed in such a case the contractor shall ensure that the shade of the paint so allowed shall be uniform.

2.2. All paints shall meet with the following general requirements

2.3 The paint shall not show excessive setting in a freshly opened full can and shall easily be redistricted with a paddle to a smooth homogeneous shade

2.4. The paint shall show no curdling levering caking or colour separation and shall be free from lumps and skins

2.5. The paint shall not skin within 48 hours in a three quarters filled closed container
2.6. The paint shall dry to a smooth uniform finish free from roughness grit unevenness and other imperfections

2.7. Ready missed paint shall be used exactly as received from the manufacturers and other imperfections

2.8. Enamel paints shall satisfy in general requirements in specification of oil paints Enamel paint shall confirm to I S 2933-1975

3.0. WORKMAN SHIP

3.1. The railing shall be so welded that welding spots does not appear on the surface. All welding spots shall be grinded by a machine grinder to give a smooth surface

3.2. The railing shall be fabricated in true shape and angles meeting the shape of the location where it is to be fitted

3.3. When railings are supplied by the contractor test certificate of the manufacturers shall be obtained according to IS 226-1975 and other relevant Indian standards

3.4. The railing shall be fitted in position as mentioned in drawing and as directed by Engineer in charge. after railing is fitted in wall or concrete by means of hold fasts etc the wall of concrete shall be finished with necessary cement mortar work etc complete

3. 5 The pipe should be fixed at both the ends. i.e. at starting and the end of the stair.

4.0. PAINTING WITH COLOUR

4.1. Material required for work of painting work shall be obtained directly from approved manufacturers or approved dealer and brought to the site in maker's drums. Kegs. etc. in sealed and unbroken condition.

4.2. All materials not in actual use shall be kept properly protected lids of containers shall be kept in closed and surface of the paint in open or partially open containers covered with a thin layer of turpentine to prevent formation of skin

4.3. The material which have become state or flat due to improper and long storage shall not be used

4.4. the paint shall be stirred thoroughly in its container before purring into small containers

4.5. While applying also the paint shall be continuously stirred in smaller container,

4.6. No left over paint shall be put back into stock tins When not in use the container shall be kept properly closed

4.7. If for any reason thins is necessary the brand of thinner recommended by the manufacture shall be used

4.8. The surface to be painted shall be thoroughly cleaned and dusted All rust dirt and grease shall be thoroughly removed before painting is started No painting on exterior or other exposed part of the work shall be carried out in wet damp or otherwise unfavorable weather and all the surfaces shall be thoroughly dry before painting work is started.

4.9. Application of paint

4.9.1. Brushing operations are to be adjusted to the spreading capacity advised by the manufacturers of particular paint The paint shall be applied evenly and smoothly by means of crossing and laying off. The crossing and laying off consists of covering the area over with paint, brushing the surface hard for the first time over and then brushing alternatively in apposite 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 The full process of crossing and laying off will constitute one coat.

4.9.2. Each coat shall be allowed to dry completely and lightly rubbed with very fine grade of sand paper and loose particles brushed off before next coat is applied Each coat shall very slightly in shade and shall be got approved from Engineer in charge before next coat is started.

4.9.3. Each coat shall be lightly rubbed down with sand paper of fine pumice stone and cleaned of dust before the next coat is applied No hair marks from the brush of clogging of paint puddles in the corners of panels, angles of moldings etc.

4.9.4. Special care shall be taken while painting over bolts nuts rivets overlaps etc Approved best quality brushes shall be used for painting work

5.0 MODE OF MEASUREMENT & PAYMENT :

5.1. The unit rate of M S Railing shall include the cost of all materials, tools and plant required for fabrication, fitting the same to specified position as per drawings, finishing, painting with three coats including priming coat, etc, and all other incidental expenses for producing M S Railing work to complete the structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

5.2. The rate of M S Railing shall include the cost of all labour, materials tools and plant scaffolding and all incidental expenses as described herein above.

5.3. The work shall be measured for its **length** limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one square meter

5.4. The payment will be made on running meter basis of the finished work.

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item no :- 88 to 92

Providing and laying controlled cement concrete M-200 and curing etc. complete including the cost of form work but excluding the cost of reinforcement for RCC work in **(A) For p. beam, footing, column, coping etc. (B) for Beams, lintels, chhajja.**

1.0 Material and Workmanship:

The relevant specifications of item no 5.8.2 shall be followed for controlled concrete work as specified in item for M-200 and relevant specifications of item no 9.1 shall be followed for the formwork and centering work.

2.0 Mode of measurements and payments

2.1 The relevant specification of item no 5.8.2 shall be followed except that the item includes the cost of formwork and centering work for any cross sectional area.

Mode of Measurement: on Cu.mt basis of concrete

Mode of Payment: on Cu.mt basis of concrete

Deputy Executive Engineer	**Executive Engineer**
Project Implementation Unit	**Project Implementation Unit**
Zone- 6, Bharuch	**Zone- 6, Bharuch**

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item no : - 93

Providing and laying controlled cement concrete M-200 and curing etc. complete including the cost of form work but excluding the cost of reinforcement for RCC work in **Slabs, sill, shelves**

1.0 Material and Workmanship:

The relevant specifications of item no 5.8.2 shall be followed for controlled concrete work as specified in item for M-200 and relevant specifications of item no 9.1 shall be followed for the formwork and centering work.

2.0 Mode of measurements and payments

2.1 The relevant specification of item no 5.8.2 shall be followed except that the item includes the cost of formwork and centering work for any cross sectional area.

Mode of Measurement: on Cu.mt basis of concrete

Mode of Payment: on Cu.mt basis of concrete

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item no. :- 94

Providing and laying controlled cement concrete M-200 and curing etc. complete including the cost of form work but excluding the cost of reinforcement for RCC work in **Staircase**

1.0 Material and Workmanship:

The relevant specifications of item no 5.8.2 shall be followed for controlled concrete work as specified in item for M-200 and relevant specifications of item no 9.1 shall be followed for the formwork and centering work.

2.0 Mode of measurements and payments

2.1 The relevant specification of item no 5.8.2 shall be followed except that the item includes the cost of formwork and centering work for any cross sectional area.

Mode of Measurement: on Cu.mt basis of concrete

Mode of Payment: on Cu.mt basis of concrete

Deputy Executive Engineer	**Executive Engineer**
Project Implementation Unit	**Project Implementation Unit**
Zone- 6, Bharuch	**Zone- 6, Bharuch**

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item no :- 84 to 86

Providing and laying controlled cement concrete M-250 and curing etc. complete including the cost of form work but excluding the cost of reinforcement for RCC work in **(A) foundation, footings, base of columns, mass concrete (B) Beams, lintels, girders (C) Wall from top of foundation (D) Slabs, landing, sill, shelves, balconies, cantilever, (E) Columns, pillars, posts and struts (F) Staircase (G) Vertical and horizontal fins, parapet wall up to floor two level**

1.0 Material and Workmanship:

The relevant specifications of item no 5.8.3 shall be followed for controlled concrete work as specified in item for M-250 and relevant specifications of item no 9.1 shall be followed for the formwork and centering work.

2.0 Mode of measurements and payments

2.1 The relevant specification of item no 5.8.3 shall be followed except that the item includes the cost of formwork and centering work for any cross sectional area.

2.1.1 The rate shall be for a unit of one cubic meter.

Mode of Measurement: on Cu.mt basis. Of concrete

Mode of Payment: on Cu.mt basis**.of concrete**

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item no :- 53

Providing and laying ordinary cement concrete 1:2:4 (1cement : 2 coarse sand : 4graded stone aggregates 20 mm. nominal size) and curing complete including the cost of form work and excluding the cost reinforcement for reinforced concrete work in **C.C. COPING**

1.0 Material and Workmanship:

The relevant specifications of item no 5.4.1. shall be followed for concrete work as specified in item for C.C. 1:2:4 and relevant specifications of item no. 9.1 shall be followed for the formwork and centering work.

2.0 Mode of measurements and payments

2.1 The relevant specification of item no 5.4.1 shall be followed except that the item includes the cost of formwork and centering work for any cross sectional area.

Mode of Measurement: on Cu.mt basis. . Of concrete

Mode of Payment: on Cu.mt basis. . Of concrete

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

ITEM NO :- 103-A

Retrofitting to building by strengthening existing walls from inside by providing vertical and horizontal inner bands and by scraping old plaster, providing a base coat of 15mm thick in C.M 1:3 providing and fixing G.I. Weld mesh 50mm x 50mm square made of 3mm wire on inner side of wall and fixing the same by 8mm T.M.T. clamps after drilling holes @ 60cm c/c two raw including required "U" steel nailing, applying bonding coat of polymer modified cementitious slurry etc. Applying smooth cement plaster 20mm in C.M. 1:3 on weld mesh with floating coat of neat cement slurry including necessary scaffolding with all equipments etc. complete as directed.

1. MATERIALS

1.1 Water shall conform to M-1 of Vol. 1 of Standard Specifications

1.2 Cement shall conform to M-3 of Vol. 1 of Standard Specifications

1.3 Sand shall conform to M-6 of Vol. 1 of Standard Specifications

1.4 G.I. weld mesh 6mm dia G.I. bar shall conform to M-34 of Vol. 1 of Standard Specifications.

1.5 Polymer Latex for Polymer Modified Cementitious slurry shall be "Polyalk Fixoprime" of Sunanda Specialty Coatings Pvt. Ld,. or any other equivalent approved brand.

1.6 T.M.T. steel 8mm dia conform to M-19 of Vol. 1 of Standard Specifications.

2. WORKMANSHIP

The work shall be executed for strengthening walls from inside by providing vertical bands at corners / junctions of walls and horizontal bands at plinth, lintel and roof levels with 3 mm dia Galvanized iron welded wire mesh 50 x 50 mm as directed by Engineer – in-charge.

Scrap the existing plaster in specified width, vertically / horizontally at corners / junctions, lintel level, plinth level etc. as directed by the engineer in charge. The plaster shall be removed by chiseling (manually or machine). The chiseled surface shall be cleaned off from all loose material and racking its joints . The necessary arrangement for scaffolding and protective measure shall be taken care as per instruction of engineer in charge. Disposal of dismantled materials shall be carried out with all lead and lift at dumping site as directed by engineer –in- charge.

Apply first coat of 15 mm thick plaster in C.M. 1:3 plaster as per attached standard specification item No. 17.60 (1) After setting the first coat of plaster, the Galvanized Iron 3 mm dia weld mesh 50 x 50 mm size (spacing between two wire is 50mm horizontally and vertically) shall be fixed on surface of walls corner / junction, plinth level, lintel level or roof level in specified width. Drill through holes of 10 mm dia with drilling machine in brick stone, concrete or any type of walls, beams or columns etc. at 60cm c/c two raw in position given by the engineer –in-charge. The 10 mm dia hole shall be cleaned with water properly and dried. Insert one end of 8 mm dia size T.M.T. steeel clamps/keys (one end U bend). The both end of 8mm dia should be bent (Minimum 8cm) more than 90^0 for clamping the both side wire mesh. Outer and inner wire mesh shall be fixed in exact position with 8 mm dia T.M.T. steel Keys / clamps with bend and additionally G.I. nails as and when required and as directed by engineer in charge.

After fixing welded wire mesh bonding coat of polymer modified cementitious slurry shall be brush applied or sprayed over first coat of plaster. Mixing of Polymer Latex and cement shall be as per manufacturer's recommendations. Overlap of weld mesh should be 30cm. Weld mesh must be fully Galvanized. Laboratory report for G. I. material is compulsory to submeet.

After applying bonding coat, a second coat of 20mm thick smooth plaster in C.M. 1:3 shall be applied. Then apply floating coat of neat cement slurry.

The relevant specification for 20mm thick CM 1:3 is as per item no. 17.61(1) of standard specification of buildings Vol. 1 . Also apply floating coat of neat cement slurry for smooth finish as per relevant specification of item no. 17.69 of standard specification of buildings.

3. MODE OF MEASUREMENT AND PAYMENT

The work shall be measured of finished items in sq. mts.

The rate includes cost of all materials, labours, tools and plants, scaffoldings etc. required for satisfactory completion of the item including cost of cement, polymer additives, galvanized iron welded wire mesh 3 mm dia 50 x 50 mm size, mm size M.S. bars, nails, ties, nipple etc., including all materials and labours as directed by engineer –in-charge.

The rate shall be for a unit of one sq. mt.

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

.

ITEM NO. :- 105-A

Retrofitting to buildings by providing vertical or horizontal outer bands by scraping old plaster, providing a base coat of cement plaster 15mm thick in C.M 1:3 providing and fixing G.I. Weld mesh 50mm x 50mm square 3mm wire on outer face of walls and fixing the same by 8mm T.M.T. clamp after drilling holes @ 60 cm c/c two raw with interior weld mesh, applying bonding coat of polymer modified cementitious slurry, applying 20mm cement plaster in two coats under layer 12mm thick cement plaster 1:3 (1 cement : 3 coarse sand) finished with top layer of 8mm thick cement plaster 1:1 (1 cement : 1 fine sand) with sponge, including grouting holes etc. complete.

1. MATERIALS

1.1 Water shall conform to M-1 of Vol. 1 of Standard Specifications

1.2 Cement shall conform to M-3 of Vol. 1 of Standard Specifications

1.3 Sand shall conform to M-6 of Vol. 1 of Standard Specifications

1.4 G.I. weld mesh shall conform to M-34 of Vol. 1 of Standard Specifications.

1.5 Polymer Latex for Polymer Modified Cementations slurry for bonding coat shall be “Polyalk Fix prime” of Sunanda Specialty Coatings Pvt. Ld, or any other equivalent approved brand.

1.6 Polymer Latex for cement grout additive shall be “Polyalk EP” of Sunanda Specialty Coatings Pvt. Ltd. or any other equivalent approved brand.

2. T.M.T. steel 8mm dia conform to M-19 of Vol. 1 of Standard Specifications.

3. **WORKMANSHIP**The work shall be executed for strengthening walls from inside by providing vertical bands at corners / junctions of walls and horizontal bands at plinth, lintel and roof levels with 3 mm dia Galvanized iron welded wire mesh 50 x 50 mm as directed by Engineer –in-charge.

Scrape the existing plaster in specified width, vertically / horizontally at corners / junctions, lintel level, plinth level etc. as directed by the engineer-in-charge. The plaster shall be removed by chiseling (manually or machine). The chiseled surface shall be cleaned off from all loose material and racking its joints. The necessary arrangement for scaffolding and protective measure shall be taken care as per instruction of engineer in charge. Disposal of dismantled materials shall be carried out with all lead and lift at dumping site as directed by engineer –in- charge.

Apply first coat of 15 mm thick plaster in C.M. 1:3 plaster as per attached standard specification item No. 17.60 (1)

After setting the first coat of plaster, the Galvanized Iron 3 mm dia weld mesh 50 x 50 mm size (spacing between two wire is 50mm horizontally and vertically) shall be fixed on surface of walls corner / junction, plinth level, lintel level or roof level in specified width. Drill through holes of 10 mm

dia with drilling machine in brick stone, concrete or any type of walls, beams or columns etc. at 60 cm c/c in two raw position given by the engineer –in-charge. The 10 mm dia hole shall be cleaned with water properly and dried. Insert one end of 8 mm dia size T.M.T. clamps/keys (one end U bend). The other end of 8 mm dia should be bent (Minimum 8cm) more than 90^0 for clamping the both side wire mesh.. Outer and inner wire mesh shall be fixed in exact position with 8mm dia T.M.T. Keys/clamps with bend and additionally G.I. nails as and when required and as directed by engineer-in- charge. Overlap of G.I. weld mesh should be provide 30 Cm. Weld mesh must be made fully 8mm G. I. material. Laboratory report of G.I. material is must be compulsory required to submit.

After fixing the 8 mm dia M.S. bar in 10mm diameter hole, nipples for grouting shall be fixed by widening the same hole by drilling machine as directed by engineer in charge. Before grouting the holes, inner face of hole should be sealed with cement mortar 1:2 with non-shrink polymer additives as directed. The cement grout with polymer additive mix @ 3 liters of polymer additive per one bag (50 kg of cement) shall then be injected in the hole. The grouting shall be started at bottom of the bands and at minimum pressure of 4 kg / cm^2. The cement grout shall be continuously injected till the grout comes out from the holes. After completion of grouting, nipple shall be cut and sealed as directed.

After applying bonding coat, the second coat of 20mm thick cement plaster consisting of two coat under layer of 12mm thick cement plaster in cm. 1:3 with top layer of 8mm thick cement plaster 1:1 with sponge including grouting holes etc. complete as per the relevant specification of standard specification of buildings item no. 17.95 attached herewith shall then be applied.

4. MODE OF MEASUREMENT AND PAYMENT

The work shall be measured of finished items in sq.mts.

The rate includes cost of all materials, labours, tools and plants, scaffoldings etc. required for satisfactory completion of the item including cost of cement, polymer additives, galvanized iron welded wire mesh 3 mm dia 50 x 50 mm size, 8mm size M.S. rods, nails, ties, nipple etc., including all materials and labours as directed by engineer –in-charge.

The rate shall be for a unit of one sq. mt.

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

.

Item No. :- 179

Removing and refixing existing door or window with frame and shutters including making good the damaged wood work and applying two coats of oil paint etc. complete.

General

This work shall consist of removing and re-fixing of Existing Doors and windows as directed including removing and re-fixing shutters as directed by the Engineer in charge

2.0 WORKMANSHIP

The item covers removing and re-fixing existing door windows as directed by the Engineer in Charge

3.0 Mode of Measurement & Payment :

3.1. The unit rate of Removing and re-fixing existing door and windows shall include the cost of all required labour charges for removing and re-fixing doors and windows as instructed by Engineer in charge, all tools and plant and labour required for removing and re-fixing in position, as per direction of the Engineer-in-charge, and all other incidental expenses to complete the Item or its components as shown on the drawings and according to these specifications. They shall also include the cost of Labour, Machinery and making walls good by plaster patch colour etc as required

3.2. The Removing and re-fixing shall be measured for its **breadth and height** limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one square meter.

3.3. The payment will be made on square Meter basis of the finished work.

3.4. The rate shall be for a unit of one square meter.

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Name of Work : A.R.C. for Civil works for Various health care facilities in Various Taluka : Vagra, Amod & Jambusar Of Dist : Bharuch.

Item No: - 269

Providing and fixing 3 mm thick PVC sheets as signage and display of health signs/information of required size having retro reflective letters/design as per requirement, fixing the same through approved adhesive etc. complete work shall e carried out as per instruction of Engineer-in-charge (Approved make PVC foamed sheet only) (45 x 15 cms.)

Materials:

Approved **3 mm thick PVC sheets and Making** specified manufacturer for **Name Plates / Informative Signage and Display Board of health signs/information of required size as per M.C.I. Norms having reflective Letters/design as per Requirement**

Workmanship:

The **PVC** signage of 3 mm thick of required size shall be prepared. Various signage and letters shall be prepared on this sheet by using retro reflective Color as per instruction of Engineer-in-charge. The work shall be carried out in best workman (Specialized agency) like manner as directed by Engineer-in-charge.

Mode of Measurement and Payment:

The rate includes for all labour, materials, tools and equipment required to complete the work in satisfactory manner.

The rate shall be for a unit of Square meter.

Mode of measurement: on Square meter.

Mode of Payment: on Square meter.

Deputy Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch

Executive Engineer
Project Implementation Unit
Zone- 6, Bharuch