

TECHNICAL SPECIFICATIONS

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1.0 PREAMBLE:-

1.1 The Technical Specifications contained herein shall be read in conjunction with the other Bidding Documents as specified in this Volume.

1.2 Site Information:-

1.2.1 The information given here under provided elsewhere is given in good faith by the Employer but the Contractor shall satisfy himself regarding all aspects of site conditions and no claim will be entertained on the plea that the information supplied by the Employer is erroneous or insufficient.

2.0 GENERAL REQUIREMENTS:-

The technical specifications in accordance with which the entire work described herein after shall be constructed and completed by the Contractor shall comprise of the "SPECIFICATION"

2.1 Though "SPECIFICATION" for each item are attached with tender they are based on following.

(1) "SPECIFICATION FOR ROAD AND BRIDGE WORKS" (Fourth REVISION printed in year 2001) issued by the Ministry of Road Transport & Highways (MORT & H), Government of India and Published by the Indian Roads Congress, hereinafter to as MORT & H Specifications.

(2) The General Technical Specifications for Road works.

(3) The General Technical Specifications for Bridge works.

Note:- (2) To (3) are Conventional Specifications Booklets usually attached for (R&B) Works.

2.2 If, a particular clause (which is incorporated in "SPECIFICATION") of specification booklets (1) to (3) above is Amended / Modified/ Added upon then the Amendment/ Modification/Addition shall supersede the relevant clause incorporated in "SPECIFICATION"

2.3 In, so far as Amended / Modified / Added Clause may come in conflict or be inconsistent with any of the provisions of the MORT & H Specifications under reference, the Amended/Modified/ Added Clause and the additional specifications shall always prevail.

2.4 In the absence of any definite provisions on any particular issue in the aforesaid Specifications, reference may be made to the latest codes and specification, of IRC and BIS in that order. Where even these are silent, the construction and completion of the works shall conform to sound engineering practice as approved by the 'Engineer' and , in case of any dispute arising out of the interpretation of the above, the decision of the 'Engineer' shall be final and binding on the Contractor.

**Name of Work: - Construction of New Anganwadi Building In Dhaman.
Tal.Navsari, Dist. Navsari**

Technical Specification

Item No.21 Providing and laying Machine cut, Free edges, Machine polished Granite stone slab 18 mm thick Single Piece For doors and Windows Cill and Jambs Cladding as per design including Full moulded Round front edge and 1 cm nosing and laid on 20 mm thick cement mortar 1:6 (1 cement : 6 coarse sand) and jointed with gray cement slurry including rubbing and polishing etc. complete.

- Polished or honed Granite tiles are calibrated & gauged with a tolerance of +/- 0.5mm. The sides are sawn to perfect right angle and top edges are micro beveled
- Granite being natural stone, variation to shade & pigmentation within a batch is a natural occurrence and accepted by the industry as normal. This variation adds unique beauty to the finished surface
- It is recommended to consider 5% to 10% additional material to the coverage area depending on the style of installation to allow for wastage due to cutting of tiles to fill corners and defects in natural stone tile
- Granite tiles can be but joined or grout joined to suit installation style. It is recommended to make a dry run to match flow of pattern to avoid cross setting.
- Please review typical installation photos to get a better understanding of the finished floor.
- Polished or Honed Granite tiles are not recommended for outdoor flooring. Moist/wet flooring can be highly slippery. Flamed or bush hammered finish is recommended for outdoor flooring.
- Water based penetrating sealer is recommended to protect from staining. Please follow manufacturer's instruction for application.
- Water based penetrating sealer/enhancer is recommended for deeper & vibrant coloration of the finished floor. It is recommended to do a test on a small hidden area or some waste tiles before applying to entire floor.

Mode of Payment :The measurement shall be in Sqmt of Marbo granite tiles supplied and fixed in position

Item No.23 Providing and fixing standard extruded aluminium section of size 63mm x 38.10mm x 1.2mm (Jindal Section :2434, @ Wt. 0.643 Kg/mt) with colour Powder Coated aluminium frame for ventilation with 5 mm thick frosted glass as details etc complete for Ventilation.

1.0 Materials:-

1.1 Aluminum standard section:-

1.1.1 Main outer frame of rectangular tube

Aluminum extruded channel section shall be as per M-31/P.17 of relevant specifications of General Technical specifications for Building works Booklet as directed.

Aluminum alloy used in the manufacture of extruded Ventilation section shall confirm to IS designation HEA – WP – of IS 733 – 1975 and also Designation WVG – WP of IS 1285 – 1975 section shall be as specified in the drawing and design.

Size of Outer frame shall confirm 63mm x 38.10mm x 1.2mm (Jindal Section : 2434, @ Wt. 0.643 kg per mt With colour powder coated aluminium frame

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.

1.1.2 Frame for ventilation portion

Aluminum alloy used in the manufacture of extruded ventilation section shall confirm to IS designation HEA – WP – of IS 733 – 1975 and also Designation WVG – WP of IS 1285 – 1975 section shall be as specified in the drawing and design.

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.

1.1.4 PVC rubber top and bottom

Top and bottom channel of rubber shall be approved make and quality and shall be free from any scratches or holes or any damages on surface. All channels shall have finished luster surface on all sides.

1.3 Glass

The frosted glass shall be of approved make having thickness of 5 mm. The glass shall be clear and free from scratches and cracks. The glass shall be provided on top.

1.5 Rubber gasket

Rubber gasket shall be of approved make and shall be free from any scratches or holes or any damages on surface. And shall have finished luster surface on all sides.

1.1.4 Bolts

All bolts shall be of approved make and shall be free from any scratches or holes or any damages on surface. And shall have finished luster surface on all sides.

2.0 WORKMANSHIP

The work of aluminium ventilation shall be done with extreme finishing. The glass shall be fitted as directed by Engineer in charge using glazing clips and rubber gaskets as required. All the fixtures and fastenings shall be fitted at right place and as directed by Engineer in charge. Floor spring shall be fitted properly so as to align the ventilation properly and shall be given trial of opening and closing properly. The aluminum section shall be anodizing with 20 microns silver / colour anodizing or 55 microns powder coating shall be done as directed by the Engineer in charge.

3.0 Mode of measurement & Payment:

3.1 The unit rate of aluminum ventilation shall include the cost of all materials, cost of anodizing, cost of all necessary fixtures and fastenings, labour charges for fixing frames, ventilations and fixing the ventilation in wall at the place shown in drawing and as instructed by the 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 ventilation frame and louvers of specified size to complete the ventilation 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 colouretc as required.

3.2 The ventilation shall be measured for its improvising and fixing extruded aluminum ventilators having standard extruded aluminum outer frame size hollow section frame of size 63mm x 38.10mm x 1.2mm (Jindal Section : 2434, @ Wt. 0.643 kg per mt including providing 5 mm thick frosted glass with rubber gasket including all labour and equipments etc. complete with ventilator above and height, limiting dimensions to those specified on plan or as directed.

3.3 The rate shall be for unit of one square meter of competed item.

Item No.24 Providing and fixing M.S. Grills/Doors to Granite frames of windows of required pattern M.S. Box frame with 16mm dia polished bars M.S. bars inserted & welded in it @ 12 Cm C/C and M.S. Flats size 40 x 6 mm at for frame and intermediate supports at required spacing as per design or fixed in wooden frame of window / brick masonry with necessary M.S. angle, Flat, & other structural steel at required spacing & frame around square or round bars with round headed bolt & nuts or by screws included cutting welding & fabrication etc. comp. including one coat of primer and two coats of matt finished oil painting etc complete {Fixing Outside}. as per Architect' Direction. (A) Plain grill

The item shall be executed as per the relevant specifications of General Technical specifications for Building works Booklet It. No.10.100[A]/P.75 + 11.4[A]/P.80 except para No. 3.2, 2.2 respectively. Item includes providing & fixing M.S. grill / M.S. door of required pattern to frames of windows/ brick masonry with necessary M.S. angle, M.S. pipe, M.S. flats and other structural steel at required spacing and frame around square or round bars with round headed bolts and nuts or by screws (Plain Grills) etc. complete as directed.

Mode of measurement and payment:

The rate includes cost of all labour, materials etc. required for satisfactory completion of this item as described above.

The contract rate is for a unit of one K.G. of completed work.

Item No 25 - Providing 15mm thick cement plaster in single coat on Rough (Similar) side of single or half brick walls for interior plastering upto floor two level and finished even and smooth in (ii) Cement mortar 1:4 (1-cement :4-sand) and Extra add for finishing with a floating coat of neat cement slurry with all lead and lift.

This work shall consist of providing **15 mm thick cement plaster (Mala troweled finish) in single coat on brick/concrete wall for interior plastering** of the shape and dimensions shown on the drawings and conforming to these Specifications or as approved by the Engineer in charge

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.18.17. / P.No.127 except that using for two coats of Birla (White cement based) or Asian (acrylic lumpy-putty) or equivalent & two coats of primer of approved brand and manufacture on new wall surface instead of color washing of undecorative wall .

Material

CEMENT

Cement shall conform Specification No M-3,

SAND

Sand shall confirm specification no M-6,

WATER

Water shall confirm specification no M-1

WORKMANSHIP

specification no 17.61 (II) and 17.95 shall be applied for this item

The surface shall be Mala troweled finish

The plaster shall then be finished off with a trowel The straight edge shall be worked on screeds with a small upward and side way motion 50mm or 75mm at a time. Finally, the surface shall be finished off with a plaster's wooden float.

Mode of Measurement & Payment :

The Item 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.

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

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

Item No 27 - Constructing Sandwich Platform of 18 mm thick Polished Black Granite at top and 25 mm thick Kota stone slab using cement mortar 1:3 for sandwich and fitting at Bottom and edges with water proof rigid adhesives including making necessary grooves in wall with Vertical Kota stone 30 mm x 2 No. sandwich thick every 60 cm center to center including all labour material of approved quality including full moulded round front edge fixed in wall for partition and jointed with grey cement slurry including rubbing and polishing etc. complete.

Material

Water shall confirm to M-1 P.No.9.

Cement shall confirm to M-3 P.No.9.

Sand shall confirm to M-6, P.No.9.

Bricks shall confirm to M-15 P.No.12.

Kota stone shall confirm to M-49 P.No.23.

Granite shall confirm to M-52, P.No.23.

Workmanship

Vertical sandwich two kota stone 25 mm th.support every 60 cm centre to centre or as required. 25mm thick Kota stone slab one side polished at bottom with cementing Materials / adhsvies including makeing necessary grooves in walls between two slab. 18 mm thick Polished Z Black Granite at top shall be fitted by using adhsvies including cutting square or round hole for sink. 18 mm thick Polished Z Black Granite stone slab strips on front edge as border shall be fitted by using approved adhsvies including rubbing and polishing.

Mode of Measurement

The consolidated item shall be measured and paid on its breadth and height limiting dimensions to those specified in estimate/plan or as directed.

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

The rate shall be for a unit of one **square meter**

Item No 28 - P & L 24" x 24" vitrified 8 mm thick tile flooring over 20 mm (average) base of cement mortar 1:6 (1 cement: 6 coarse sand) on new surface or fixing on existing flooring by adhesive material including dismantling of existing flooring and jointed with color cement slurry including finised with flush pointing & cleaning the surface etc. complete for DARK shade and antiskit.

The Item shall be executed as per the relevant specifications of general technical specification for building work booklet Item No.14.43(A)/ page No. 98 except that **DARK shade and antiskit vitrified Tiles** finished vitrified tiles 24 x 24 cm size & 8 mm thick of required quality, colour, design and size as approved by the Engineer in charge shall be used instead of kotah stone and 12mm thick base of cement mortar shall be applied instead of 10mm thick. Including finised with flush pointing & cleaning the surface etc. complete for GVT as approved by engineer in charge.

For Dismantling of existing flooring use the Item shall be executed as per the relevant specifications of general technical specification for building work booklet Item No. **20.23./** page No. 148

The Item shall be measured as finished work in Sqm.

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

Item No.31 Providing and laying water proofing treatment with broken china mosaic flooring by conventional method including cleaning the slab surface by wire brush as directed including providing first layer of C.M. 1 :4 of 40 mm thickness mixed with water proofing compound at rate prescribed by manufacturer, including putting of brick bats of average thickness 40 mm Well immersed in water laid uniformly on first layer of mortar including applying cement slurry @ rate of 0.08 bag/sqm. on fixed layer of brick bats including maintaining necessary slope, in second layer 40 mm thick C.M 1 :4 mixed with water proofing compound as directed, including finishing smooth with cement slurry as directed complete. and using 12 mm to 20 mm broken pieces of Glazed tiles to be laid over cement mortar 1:3 to plain or slope and to be tamped to bring mortar cream out up to surface using white cement including rounding off junctions and extending them up to 15 cm along the wall, clearing with water and oxalic acid etc. as directed.

1.0 Material

Water Shall confirm Material Specification no M- 1

Cement Shall confirm Material Specification no M- 3

Sand Shall confirm Material Specification no M- 6

Crushed stone aggregates Shall confirm Material Specification no M- 12

Brick aggregates Shall confirm Material Specification no M- 14

White Cement Shall confirm Material Specification no M- 4

Water proofing compound shall be done as per Specification no 17.70 Page No. 121

Chemicals and compounds of approved shall be of approved quality and make . The proportion of the compound shall be of specified proportion as specified by the manufacturer

2.0 Workmanship

cleaning the slab surface by mechanical means or wire brush to remove old paint, dust, dirt and all loose material

(a) providing first layer of C.M. 1 :4 of 40 mm thickness mixed with water proofing compound at rate prescribed by manufacturer, including putting of brick bats of average thickness 40 mm Well immersed in water laid uniformly on first layer of mortar including applying cement slurry @ rate of 0.08 bag /sqm. on fixed layer of brick bats including maintaining necessary slope

(B) providing second layer 40 mm thick C.M 1 :4 mixed with water proofing compound as directed, including finishing smooth with cement slurry as directed complete.

(C)using 12 mm to 20 mm broken pieces of Glazed tiles to be laid over cement mortar 1 3 to plain or slope and to be tempered to bring mortar creme out up to surface using white cement including rounding off junctions and extending them up to 15 cm along the wall,clearing with water and oxalic acid etc.as directed.

(D) after finishing the whole terrace shall be flooded with water for a period of two weeks as directed

The waterproofing material of approved quality shall be mixed with the cement slurry as per specified proportion as directed by the manufacturer of the compound and as directed by The engineer in charge the mixture shall be applied uniformly to the surface in required coats as directed by the engineer in charge

A guarantee bond on appropriately stamped paper shall be given by the contractor to the department in the manner and form prescribed below

FORM OF GUATANTEE BOND

I We (Contractor) hereby guarantee that water proofing work will remain leakage proof for period of 5 years after completion of the work of water proofing treatment as per the terms and conditions of the contract and leakage that might be caused in building where the water proofing treatment is done we hereby Guarantees to make good any loss of damages suffered by the Government of Gujarat and further gurantee to redo effective work without claiming any extra cost

2.1 This gurarantee shall remain in force for the period of 5 years from the completion of the work under the contract and it shall remain binding to the contractor for period of 5 Years.

2.2 The deposit at the rate of 50% of the cost of this item the running and final bills shall be recovered and retained for the first one years after completion of the guarantee period balance of gurantee period and shall be refunded only after the completion of the gurantee period.

3.0 MODE OF MEASUREMENT and PAYMENT

3.1 The unit rate of water proofing treatment shall include the cost of all materials, tools and plant chemicals and compounds required for water proofing, Applying the same to specified surface as per drawings, finishing, painting with three coats, etc, and all other incidental expenses for producing water proofing 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 chemicals and compounds tools and plant scaffolding and all incidental expenses as described herein above.

3.2 The water proofing 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 sq.meter

3.3 The payment will be made on **sq. meter** basis of the finished work.

Item No 32 Providing & laying and jointing in true line and level 40 mm dia UPVC pipe (SCH-40) line including fitting make or equivalent as approved by engineer in charge the pipe shall be fixed on wall with the help of clamp at every two meter center to center or shall be concerned as directed including necessary fitting etc including testing of pipe and joints and fix in the same with adhesive solvent including cost of material (A) 40 mm OD pipe

The relevant specifications of Building Booklet It. No.23.8.(D) Page No.162 shall be followed expect use level 40mm dia. U.P.V.C. Pipe (SCH- 40) for cold water including fittings make PRINCE SUPREME ASTRAL FINOLEX or equivalent and Pipe shall be fixed on the wall with the help of clamp at every two metre C C or shall be concerned as directed as approved by Engineer In Charge and instead of 6 kgs sq.cm. working pressure polythene pipes of 40mm dia.

Item No 33 Providing & laying and jointing in true line and level 25 mm dia UPVC pipe (SCH-40) line including fitting make or equivalent as approved by engineer in charge the pipe shall be fixed on wall with the help of clamp at every two meter center to center or shall be concerned as directed including necessary fitting etc including testing of pipe and joints and fix in the same with adhesive solvent including cost of material (A) 25 mm OD pipe

The relevant specifications of Building Booklet It. No.23.8.(B) Page No.162 shall be followed expect use level 25mm dia. U.P.V.C. Pipe (SCH- 40) for cold water including fittings make PRINCE SUPREME ASTRAL FINOLEX or equivalent and Pipe shall be fixed on the wall with the help of clamp at every two metre C C or shall be concerned as directed as approved by Engineer In Charge and instead of 6 kgs sq.cm. working pressure polythene pipes of 25mm dia.

- Item No 34 Providing & laying and jointing in true line and level 15 mm dia UPVC pipe (SCH-40) line including fitting make or equivalent as approved by engineer in charge the pipe shall be fixed on wall with the help of clamp at every two meter center to center or shall be concealed as directed including necessary fitting etc including testing of pipe and joints and fix in the same with adhesive solvent including cost of material (A) 15 mm OD pipe**

The relevant specifications of Building Booklet It. No.23.8.(A) Page No.162 shall be followed expect use level 15mm dia. U.P.V.C. Pipe (SCH-40) for cold water including fittings make PRINCE SUPREME ASTRAL FINOLEX or equivalent and Pipe shall be fixed on the wall with the help of clamp at every two metre C C or shall be concerned as directed as approved by Engineer In Charge and instead of 6 kgs sq.cm. working pressure polythene pipes of 20mm dia.

- Item No 42 Providing and fixing to wall ceiling and floor 10.0 Kg. F/Cm² working pressure polythene pipes of the following outside Dia. Low density, complete with special flange compression type fittings, wall clipsetc. including making good the wall ceiling and floor.(B) 110mm**

The relevant specifications of Building Booklet It. No.23.8./ Page No.162 shall be followed expect use 110 mm Rain water pipe 10.00Kg F/CM² and other end socketed with rubber ring, & fittings conforming to ISI 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed shall be concealed instead of 50mm dia&6 kgs/sq.cm. working pressure polythene pipes

- Item No 43 Providing and fixing to wall ceiling and floor 10.0 Kg. F/Cm² working pressure polythene pipes of the following outside Dia. Low density, complete with special flange compression type fittings, wall clipsetc. including making good the wall ceiling and floor.(A) 75mm**

The relevant specifications of Building Booklet It. No.23.8./ Page No.162 shall be followed expect use 75 mm Rain water pipe 10.00Kg F/CM² and other end socketed with rubber ring, & fittings conforming to ISI 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed shall be concealed instead of 50mm dia&6 kgs/sq.cm. working pressure polythene pipes.

- Item No 46 providing and fixing in position cowl vent to pipe (II) 100mm**

Cowl vent shall be of cast iron and shall be sound and free from porosity or other defects which affect serviceability The thickness of the base metal shall not be less than 6.5 mm The surface shall be smooth and free from craze, chips and other flaws or any other kind of defects which affect serviceability The size of Cowl vent shall be of Cast Iron.

Cowl vent shall be of-quality approved by the Engineer-in-charge and shall generally conform to the relevant Indian Standards.

The cover shall be cast iron perforated cover shall be provided on the trap of appropriate size.

Mode of Measurement & Payment :

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

The payment will be made on **Number** basis of the finished work.

The rate shall be for a unit of **one number**

Item No 53 Providing erecting and fixing double coated Syntex PVC. (ISI) water tank of required capacity each with all necessary fittings and connection etc. complete on terrace.

General

This work shall consist of **Providing and fixing P V C water tank of specified capacity with necessary G I fittings including 25 mm dia G.I. over flow pipe, ball valve**, of the shape and dimensions shown on the drawings and conforming to these Specifications or as approved by the Engineer in charge.

PVC Water tank

PVC Water tank of specified capacity and of I.S.I. mark of approved in litters of approved make and quality equivalent to syntax product

Net capacity shall be net volume of water stored between the lowest level of overflow and lowest specified level.

Nipple

Galvanize pipe nipple shall be of approved make and of best quality Relevant specification given in Booklet of Building specification shall be applied for the execution of this item

Ball valve

Ball valve shall confirm specification no 23.00.5 (A) on page 172 of specification booklet for building works

Ball valve shall be of approved make and of best quality. Relevant specification given in Booklet of Building specification shall be applied for the execution of this item

Connections

Connections shall be of approved make and of best quality. Relevant specification given in Booklet of Building specification shall be applied for the execution of this item

WORKMAN SHIP

Tank shall be approved quality and as per IS standard make. Material used in manufacturing tank shall be confirmed to relevant IS code. The material of tank and lead and fittings which may come in contact of water should be such that it does not impart any taste, colour or odor. It does not have any toxic effect and it does not contaminate the water. Thereby making it unpotable.

The tank shall be fixed properly in a level position and making all required necessary correction like inlet outlet flushing overflow and air vent. Tank shall be satisfying the standards of public health.

Mode of Measurement & Payment:

The payment will be made on **capacity in litter's** basis of the finished work.

All necessary labour materials Equipment tools and plant, conveyance including loading and unloading etc shall be provided by the Contractor as directed by the Engineer in charge

The item shall be measured for its **capacity in litters** limiting dimensions to those specified on plan or as directed.

The rate shall be for a unit of **one Litter**.

Item No 56 Providing and fixing S.S. railing 90 cm height fixed on side of stair with necessary hold fast with 12 x 12 mm S.S. square vertical balustrade 2 no each per tread with 2 nos of 40 mm x 4 mm S S flats tie at 30 cm and 60 cm height from the tread with 40 mm dia S S hand rail on the top including cutting welding fabricating including polishing etc. complete.

General

This work shall consist of furnishing and placing **Providing and fixing Stainless Steel railing having 75 mm dia hollow stainless steel pipe as hand rail and 32 mm dia hollow stainless steel pipe with combination of 10 cm long 20 mm dia pipe as vertical supports 16 mm dia hollow stainless steel pipes** of the shape and dimensions shown on the drawings and conforming to these Specifications or as approved by the Engineer in charge.

MATERIAL

50 mm diameter round hollow Stainless Steel pipe for railing

Round Hollow S. S. Pipe for railing shall be confirming general Indian standards. Round Hollow pipe shall be free from the defects and shall have smooth finish.

The Material shall be free from loose miles scale rust pits or other affective

The Strength and durability

Workmanship

vertical supports of to get 90 cm height of railing shall be fixed as directed and round hollow pipe shall be fixed by welding in true line and level and slope the railing shall be powder coated finish as per standards

Mode of Measurement & Payment:

The Item 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.

The payment will be made on **running Meter** basis of the finished work.

The rate shall be for a unit of **one running meter**.