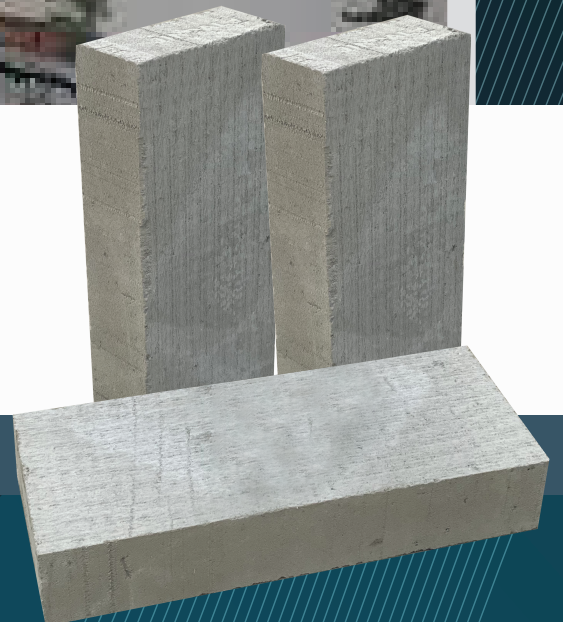


## AAC BLOCKS



## METHOD STATEMENT



# SCOPE

JINDAL Air AAC Block (Autoclaved Aerated Concrete) is lightweight precast foam concrete building material. It is eco-friendly building material and reduces structural weight. AAC Block used for internal and external wall. JINDAL Air block confirming IS: 2185 And AAC Block Masonry confirming IS: 6042-1969.

## 1. 1. PREPARATION BEFORE ACTUAL WORK

1.1 Suggest use AAC Blocks for internal walls Min. size 625\*200\*125mm and external wall min. size 625\*200\*225mm

1.2 Don't tease on block when support door frame.

## 2. STORAGE: STORING JINDAL AIR AAC BLOCK

2.1 Use JINDAL Air AAC Block after 5 days of manufacturing of block for best use.

2.2 Please block stack in dry and plane place. Stack not more than 6 lines.



## 3. MORTARS/ADHESIVE FOR BLOCK MASONRY

3.1 Use JINDAL Air block adhesive for block masonry work.

3.2 Suggest using JINDAL Air block adhesive mixture of sand, cement and high performance polymers for more bonding strength.

3.3 Please Use Site mix 1:6 Minimum and prevent to 1:4 mortar because changes of cracks due to more strength. Use Minimum 10mm site mix mortar.

3.4 JINDAL Air block Adhesive use according to Method statement and use glass fibre mesh in every layers between adhesive and blocks at the time of block masonry.

3.5 (i) As per IS: 6041 -1969

(A) 1 P Cement + 1 P Lime + 6 P Coarse sand + Water

(B) 1 P Cement + 6 P Coarse Sand + water

P = Part

(ii) JINDAL Air block Adhesive (ASTM C 1660-09)

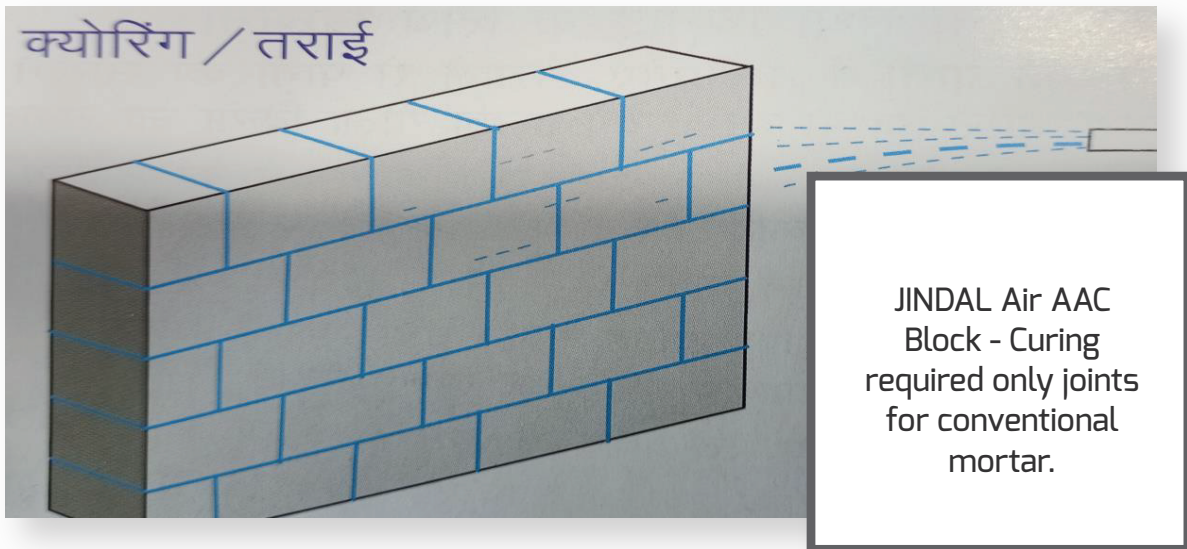
Block Adhesive (1 Bag) + 6-7.5 litre water (Premixed)

#### 4. BLOCKS WETTING

- 4.1 The blocks need not be wetted before or during laying in walls. In case the climate condition so require, the top and the sides of the blocks may only be slightly moistened so as to prevent absorption of the water from the mortar and ensure the development of the required bond with the mortar.
- 4.2 Surface wetting or maximum 1 Minute before laying.
- 4.3 Don't keep blocks in water.
- 4.4 Dip in water And lift immediately.
- 4.5 Don't require complete wet AAC blocks wall

#### 5. CURING

- 5.1 Curing required only joints if use nominal mix mortar and no curing required if use JINDAL Air block adhesive.
- 5.2 Curing of mortar joints only.



#### 6. CUTTING OF BLOCKS:

- 6.1 Use Hand saw And Mechanical Band Saw for JINDAL Air Blocks cutting.



## 7. LAYING OF BLOCKS

7.1 Block masonry must be in proper alignment, Level & plumb.

7.2 Proportion of conventional mortar 1:6 & 1:1:6 Or JINDAL Air block adhesive. Mix Adhesive with drill machine for large qty. and hand mixing for small qty.

7.3 Bond Beam in every 3rd layer or every 1200mm height of wall.

7.4 Use Maximum 10-12mm for conventional mortar and 3-5mm for JINDAL Air block adhesive



7.5 Use 3 inch. Fiber mesh for 100mm blocks and use 6 inch. Fiber mesh for 200mm blocks.

7.6 1st Course: - The 1st course of AAC Blocks shall be laid great care, making sure that it is properly aligned, levelled and plumbed, as this may assist the mason in laying succeeding course to obtain a straight and truly vertical wall.



## 8. TREATMENTS OF JOINTS

8.1 Treatments of joints if use conventional mortar.

8.2 Treatments of joints is not required for JINDAL Air block adhesive.

## 9. BLOCK MASONRY PATTERN

9.1 Use block Masonry pattern Joints between upper and lower block minimum 100 mm apart or more from joints.



## 10. LENGTH TO HEIGHT RATIO FOR AAC BLOCKS

10.1 Length to height ratio as per IS code 6042

**IS : 6042-1969**

**TABLE 1 RECOMMENDED LENGTH TO HEIGHT RATIO FOR LIGHTWEIGHT CONCRETE BLOCK MASONRY WALLS**

( Clauses 7.5.4, 7.5.5.2, 7.5.5.3 and 7.5.6 )

Sl No.	WALL PANEL	VERTICAL SPACING OF JOINT REINFORCEMENT		
		600 mm	400 mm	200 mm
(1)	(2)	(3)	(4)	(5)
i)	Length $L$ of the panel (irrespective of the height $H$ of the panel ), <i>Max</i>	12.5 m	15 m	18 m
ii)	Ratio $\frac{L}{H}$ , <i>Max</i>	2.5	3	4

NOTE 1 — When bond beams spaced 1 200 mm vertically are employed in place of joint reinforcement, control joints may be spaced at 18 m maximum.

NOTE 2 — Where reinforcement has not been provided, the length of the panel shall not exceed 12 m and the ratio of  $L/H$  shall not exceed 2.

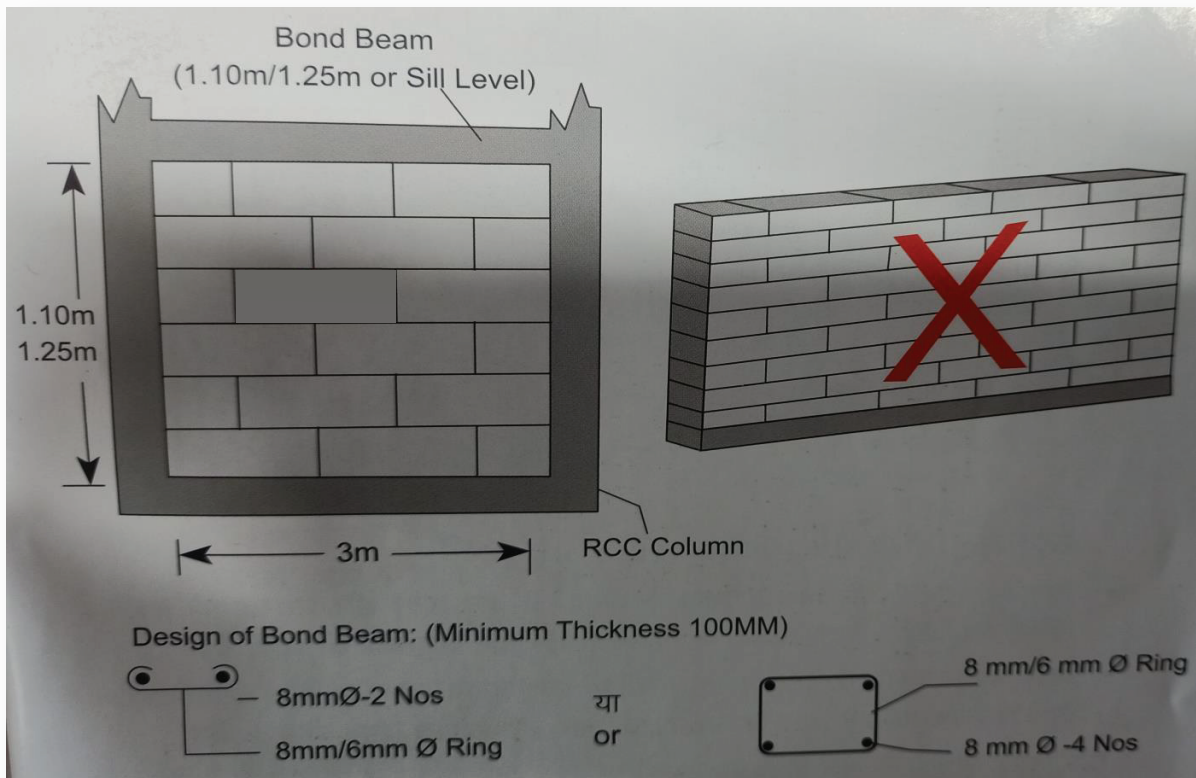
## 11. BOND BEAM

11.1 Before plastering work use fiber mesh for different surface such as concrete and AAC block surface, Beam – column interface and others joints.

11.2 Bond Beam shall be placed

- At floor level.
- At the head of all floor and window openings (in which case they serve as lintels over them)
- Below the sill in all openings,
- At Plinth level,

11.3 Bond Beam height  $\geq 100\text{mm}$  and fill M15 Grade concrete.



## 12. GLASS FIBRE REINFORCEMENT

12.1 Use fibre mesh in every layer between AAC block and mortar.

12.2 Use glass fibre mesh 75mm for 100mm block and 150mm for 200mm block.

- Protects the surface from cracking
- Improve strength
- Easy to handle and use
- Cost effective

## 13. BEAM & COLUMN JUNCTIONS

13.1 Glass fibre mesh to be provided in beam and column junction.

13.2 It should be applied with mortar or cement & bonding agent.

#### 14. DRILLING & CHASING ON BLOCKS

14.1 Use plastic and polyamide anchor with AAC blocks.

14.2 Please don't use wood, fibre, metal and expansion anchor.

14.3 Use drill machine for use tease in AAC blocks. Don't use hammer mode while drilling.

#### 15. ON CHASING AREA

15.1 Don't chasing whole block. Please Chasing 1/3 part of block thickness.

15.2 Electric Pipe and Plumbing lines

- Use wall groove cutter for wall chasing.
- Use glass fibre mesh on chasing part of wall (3 inch covered on chasing part of wall from both side)
- Use 1:6 Conventional mortar and Non-Shrink adhesive/grout for filling.
- It should be covered with Cement & Chemical or Adhesive (GI Box)
- All conduits should be covered with glass fibre mesh/chicken fibre mesh.



#### 16. PLASTERING THICKNESS

16.1 Don't plastering work in wet walls and rainy season. Plaster work in complete dry wall.

16.2 Use 1:4 to 1:6 conventional mortar and JINDAL Air Ready Mix Plaster for 10-12mm in first coat and second coat use 6-8mm thickness of plaster.

#### 17. PLASTERING & FINISHING

17.1 Plastering work after complete dry wall for prevent shrinkage due to dry of walls.

17.2 Before plastering work don't wet of AAC block walls. Suggest use light fog spray in wall.

17.3 Use 1:4 to 1:6 Conventional mortar and JINDAL Air RMP for 10mm to 12mm thickness.

17.4 Use Lime Finishing/Wall putty 2 - 3mm thicknes



**IS: 6042-1969 CODE OF PRACTICE  
PROVISIONS IN IS – CODE TO AVOID CRACKS FORMATION**

## 7.5 Avoidance of Cracks Formation

7.5.1 The major causes of cracks in the structure of lightweight concrete block wall or partitions and measures for their prevention are described in 7.5.2 to 7.5.3.

7.5.2 Structural Movements-Cracks may occur due to alterations in length, curvature or orientation of the structural members enclosing a wall or partition due to load settlement, thermal expansion or changes in moisture content. The precautions to be taken for prevention shall be as described in 7.5.2.1 to 7.5.2.4.

7.5.2.1 In the case of framed structures, erection of partitions and panel walls shall be delayed wherever possible until the frame has taken up, as much as possible, any deformation occurring due to structural movements.

7.5.2.2 For floor deformation and movement -The floor upon which a partition is built may deflect under load brought upon it after the partition is built. Where such deflections tend to create non-continuous bearing, the partition shall be strong enough to span between the points of without cracking. This may be achieved by embedding 6 mm diameter bars at every 400 mm height.

7.5.2.3 Ceiling deflection or movement - A ceiling above a partition wall may deflect under loads applied after its erection: or through thermal or other movements. The partition wall shall be separated from the ceiling by a gap, or by a layer of resilient material, to avoid cracking as a result of such deflection. Where this cannot be done as in the case of plastered finishes, the risk of cracking may be diminished by forming a cut between the ceiling plaster and the wall plaster.

7.5.2.4 Deflection or movement of structural abutments-Walls, columns or other structural elements against which a wall or partition abuts may deflect or move because of load, settlement, shrinkage or thermal effects. In order to avoid cracking of walls or partitions as a result of such movements, a slip joint shall be provided where possible, preferably packed with a resilient material.

7.5.3 Control of Wall Movement Accompanying Temperature and Moisture Changes- Cracking in concrete masonry walls is often due to tensile stresses which develop when wall movements accompanying temperature and moisture change are restrained by other elements of the building, or when concrete masonry places restraint on the movement of adjoining elements.



7.5.3.1 There are three methods of controlling cracking in concrete masonry structures:

- A). specifying a limit on the moisture content of masonry units at the time of delivery and construction (11.1.5.1 of IS: 3590-1966\*),
- B). Incorporating steel reinforcement either in the form of bond beams or horizontal joint reinforcement, and
- C). providing control joints to accommodate the movement.

In all concrete masonry construction it is essential to employ only moisture controlled units. Their use, combined with the provision of control joints, is generally adequate to prevent cracking in concrete masonry walls. However, bond beams or joint reinforcement, or both in different locations as considered suitable, may also be used in addition to the above.

7.5.4 Bond Beams- Bond beams, the use of which as structural members has been referred to in

7.3, also serve as a means of crack control. Their value for this purpose is due to the increased strength and stiffness they provide to a masonry wall They shall be built in the same manner as the structural bond beams, with a minimum reinforcement of two 12 mm diameter steel bars. AS a means of crack control, the area of influence of a bond beam shall normally be presumed to extend 600 mm above and below its location in the wall. In walls without openings they shall be spaced 1200 mm apart and may be of any length up to a maximum of 18 m

**IS : 6042-1969**

**TABLE 1 RECOMMENDED LENGTH TO HEIGHT RATIO FOR LIGHTWEIGHT CONCRETE BLOCK MASONRY WALLS**

( Clauses 7.5.4, 7.5.5.2, 7.5.5.3 and 7.5.6 )

Sl. No.	WALL PANEL	VERTICAL SPACING OF JOINT REINFORCEMENT		
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(1)	(2)	(3)	(4)	(5)
i)	Length $L$ of the panel (irrespective of the height $H$ of the panel ), <i>Max</i>	12.5 m	15 m	18 m
ii)	Ratio $\frac{L}{H}$ , <i>Max</i>	2.5	3	4

NOTE 1 — When bond beams spaced 1 200 mm vertically are employed in place of joint reinforcement, control joints may be spaced at 18 m maximum.

NOTE 2 — Where reinforcement has not been provided, the length of the panel shall not exceed 12 m and the ratio of  $L/H$  shall not exceed 2.

7.5.4.1 Bond beams shall be discontinuous at control joints, but practice here varies depending upon structural requirements. Dummy joints shall be formed when a bond beam is continuous at a control joint.

7.5.5 Joint Reinforcement-Horizontal joint reinforcement serves much the same purpose in crack control as bond beams--it increases the tensile resistance to cracking. Due to the generally closer spacing adopted, joint steel may be more effective in crack control than bond beams.

7.5.5.1 Joint reinforcement shall be fabricated from galvanized steel wire conforming to IS : 280- 1962\* and shall consist of two or more smooth or deformed longitudinal wires of 4 mm dia. or Larger, weld connected with 2.8 mm dia. or larger cross wires. The out-to-out spacing of the longitudinal wires shall be 40 mm less than the width of the masonry units. The distance between the welded contacts of the cross wires with each longitudinal wire shall not exceed 150 mm for smooth wires and 400 mm for deformed wires. The joint reinforcement shall be available in flat sections 3 to 6 m in length. Where a splice is necessary, the joint reinforcement shall be lapped. At corners, special corner pieces shall be used. The laps shall be of sufficient length to develop the tensile strength of the longitudinal reinforcement, or 300 mm, whichever dimension is the greater.

\* Specification for mild steel wire for general engineering purposes (revised ).

7.5.5.2 The reinforcement shall be embedded in horizontal joints at intervals of 200, 400 and 600mm depending upon panel length L (see Note), height H, and the number and type of wall openings. Table 1 gives the L/H ratios recommended for masonry walls constructed with moisture-controlled units and containing different amounts of joint reinforcement. The ratios are approximate and provide an adequate margin of safety against cracking when employed in walls without openings.

NOTE- A panel is a wall portion in one plane which lies between (1) wall ends, (2) control joints, or (3) a control joint and a wall end.

7.5.5.3. Joint reinforcement shall be used in conjunction with mortar not weaker than 1: 1: 6 cement, lime, sand mix. In walls exposed to the action of weather, the reinforcement shall have a mortar cover of not less than 15 mm. The following points in the location of joint reinforcement shall be noted:

- a) Place the joint reinforcement in the first and second bed joints immediately above and below wall openings. It shall not extend less than 600 mm beyond the opening, or to the end of the panel, whichever is the smaller;

- b) Place joint reinforcement in the two or three courses immediately below the top of the wall;
- c) Joint reinforcement shall not be located closer to a bond beam than 600 mm;
- d) Joint reinforcement shall be interrupted at control joints; and
- e) Joint reinforcement shall not be required where the ratio L/H is not more than given in Note 2 in Table 1.

7.5.6 Control Joints-These are employed to reduce restraint by accommodating 'movement of the masonry wall, or movement of structural elements adjacent to the wall, and thus to control cracking. They are, in fact, vertical separations built into the wall at locations where cracking is likely due to excessive horizontal stresses. The spacing along the wall length depends upon:

- a) The expected movements of the wall and other elements;
- b) The resistance of the wall to horizontal tensile stresses; and
- c) The extent and location in the wall of doors, windows, recesses, chases and other causes of stress concentration.

Table 1 gives ratio between the panel length and wall height, L/H, recommended for walls without openings constructed with moisture controlled units (see Note).

NOTE-A panel is a wall element in one plane which lies between (a) wall ends,(b) control joints, or (~1 a control joint and a wall end).

7.5.6.1 The common methods of constructing control joints are illustrated in Fig. 1 and 2. The joints permit free horizontal movement, but they shall have sufficient shear and flexural strength to resist lateral loads. Particular care shall be taken to make the joints weather tight when located in exterior walls.

7.5.6.2 Apart from spaced control joints in long walls, control joints shall be placed:

- a) at changes in wall height or thickness;
- b) at construction joints in foundations, floors, and roof;
- c) at recesses and chases;
- d) at abutments of walls and columns;
- e) at return angles in L-, T- and U-shaped structures; and
- f) at one or both sides of wall openings (generally a control joint is placed at one side of an opening less than 2 m in width and at both jambs of openings over 2 m wide).

## 8. STORAGE AND HANDLING OF MATERIALS

8.1 The blocks shall be stored in such a way as to avoid any contact with moisture on the site.

They shall be stock piled on planks or other supports free from contact with the ground and covered to protect against wetting.

8.2 Cement, lime aggregates and other masonry materials shall be stored and hauled 'as laid down in the relevant Indian Standards.

For any further clarification don't hesitate to contact JINDAL Air Technical Department.

### Technical Department

The information, and, in particular, the recommendations relating to the application and end-use of JINDAL Air products, are given in good faith based on JINDAL Air current knowledge and experience of the products when properly stored, handled and applied under normal conditions. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request.



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Health & Safety: JINDAL Air Block is non-toxic. Use of gloves and goggles is recommended. Any splashes to the skin or eyes should be washed off with clean water. In the event of prolonged irritation, medical advice should be sought. JINDAL Air components are non-flammable.

**Manufacturing by:** Future Ecocrete Pvt. Ltd. Block #10 to 20, Israna Pardhana Road, Vill. Pardhana, PANIPAT

**Marketed by:** Peeco Agencies Pvt. Ltd. 901, The Palm square, sector – 66, Gurgaon (HR)

