



JK SMARTBLOK
Autoclaved Aerated Concrete

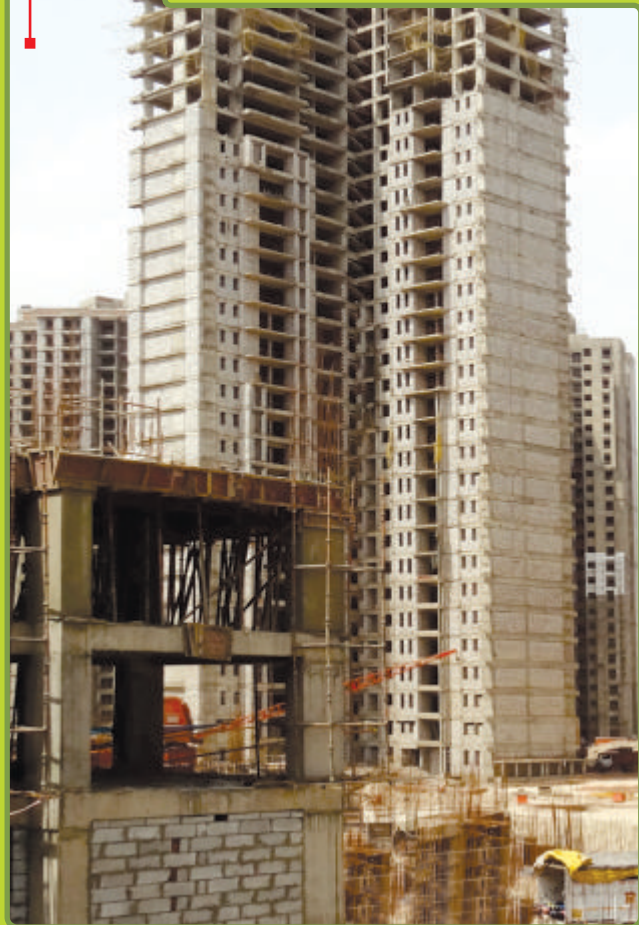
A smart choice
for smarter people

Installation Guide
and
Do's & Dont's



JK SMARTBLOK

Autoclaved Aerated Concrete



JK LAKSHMI
C E M E N T INTODUCES JK SMARTBLOX
Reliable. Smart. Concrete

JK Lakshmi Cement Limited is a leading company manufacturing a range of building materials. JK Lakshmi Cement, with its promise of "Mazbooti Guaranteed", is among the top cement brands in the country today.

Continuing its endeavour to bring the best in building materials, JK Lakshmi Cement Limited now introduces "JK SMARTBLOX", which are produced in a state of the art plant using the machinery and technology from Germany.

The highly automated manufacturing process which incorporates the technological innovations such as 'Green Separation' and 'Horizontal Autoclaving' is capable of delivering unmatched consistency in product quality. The unique features of 'Hand Grips' and 'Tongue & Groove' profile puts JK SMARTBLOX generation ahead of others.

The use of "JK SMARTBLOX" in walls replacing conventional clay bricks & CLC/Hollow Blocks delivers not only unmatched speed, quality, and economy in construction but also provides life-long benefits such as energy saving, low maintenance cost, long life, safety, health, and hygiene to the users.

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■ Specifications

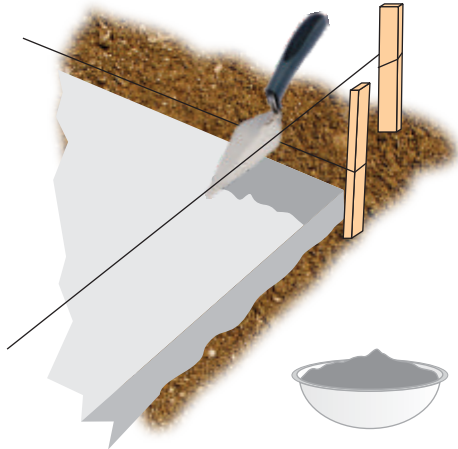
Parameter	Unit	Values
Size		
Length	mm	600
Height	mm	250
Width	mm	100 125, 150 200, 225, 250 & 300
Precision (Tolerance)		
Length	mm	± 5.0
Height	mm	± 3.0
Width	mm	± 3.0
Dry Density	Kg/m ³	550-650
Compressive Strength	N/mm ²	4-5
Fire Resistance	Hours	2-6
Thermal Conductivity Range (k Value)	W/m-k	0.24
Drying Shrinkage	mm/m	Max.0.20
Sound Absorption	db	40-45 for 200 mm wall
Special Features	Tongue-Groove Profile, Hand Grips	

Conforms to IS:2185 (III)-1984; IS:6041-1985; IS:6441-1972

Wall Installation

1st Level Coursing

■ Step 1 : Start the Leveling Bed



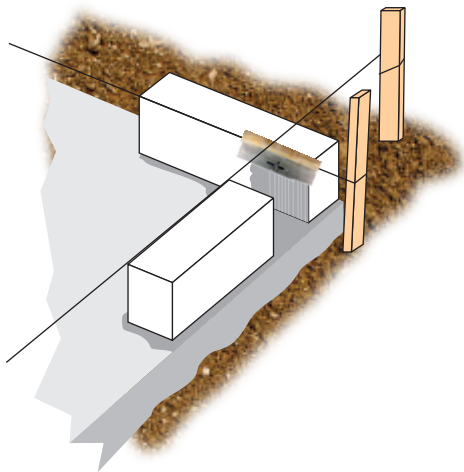
- Before starting the block work wet the levelling course area.
- The first course of block masonry shall be laid with greater care, make sure that properly aligned, levelled and plumbset the 1st layer of block in the cement- sand (1:6) mortar to maintain require height or level. If we are providing resilient material between column and blocks wall than no need of hacking.
- Block surface must be wetted before applying mortar for adhesion.

■ Step 2 : Mix Thin-Bed Mortar



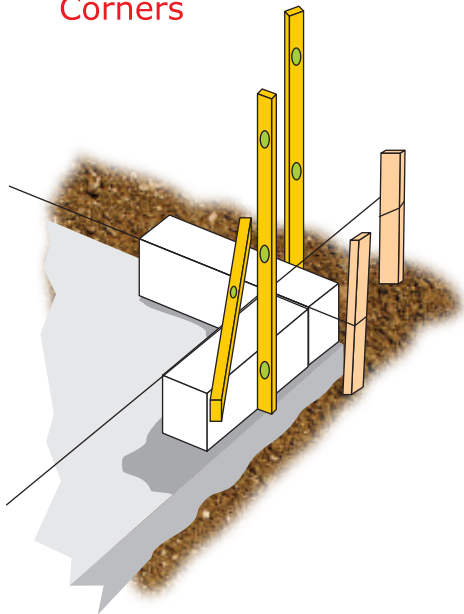
- Mix approved AAC thin-bed mortar in a clean mixing container per manufacturer's directions.
- The consistency of the mixed thin-bed mortar should be such that it flows easily through the teeth of the notched trowel leaving the shape of the teeth in the mortar bed.
- Normal mortar thickness should be 10mm, if using JK Smart bond adhesive thickness should be 2 - 3mm.

■ Step 3: Set second corner block



- Set the second corner block adding thin-bed mortar to the head joint with the notched trowel.

■ Step 4 : Repeat for Additional Corners

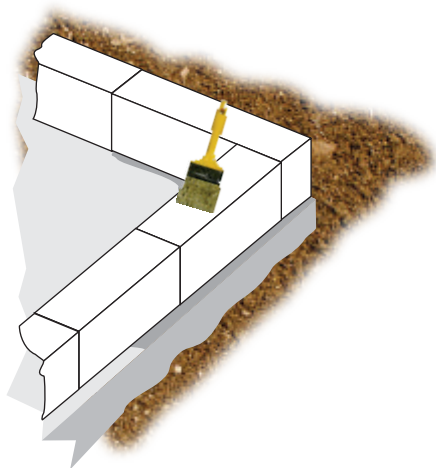


- Repeat subsequent steps for each corner using a builder's level to maintain an equal elevation.
- Triple check each lead corner in all three planes.

Wall Installation

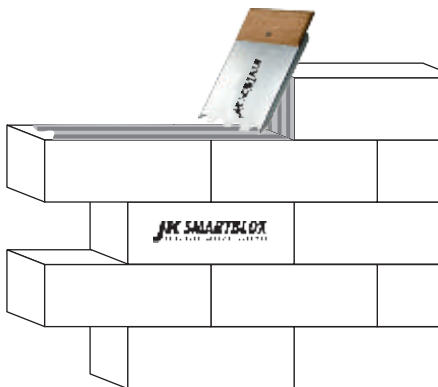
- Normal Course

■ Step 1 : Clean Bed Joint Surface



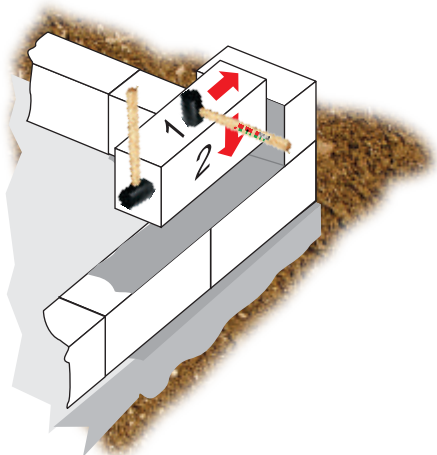
- With a brush, sweep off all dust and loose particles to insure adhesion of the thin-bed mortar.

■ Step 2 : Apply Thin-Bed Mortar to Head and Bed Joints



- Using a clean, notched trowel the same width as the block spread thin-bed mortar up the head joint of the adjoining block and then along the bed joint. Spread only enough thin-bed mortar to lay one block at a time. The thin-bed mortar must cover full width of the joints.
- Tongue, grooves & hand grips fill from top.

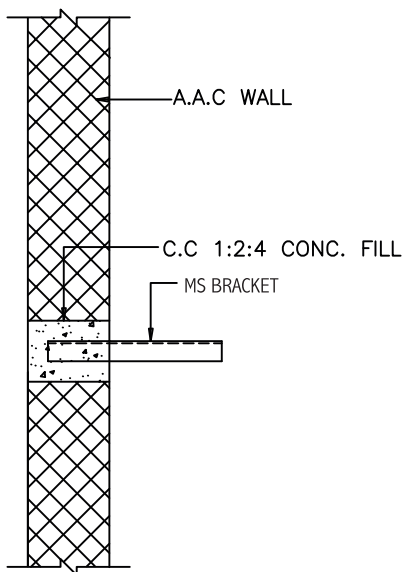
■ Step 3 : Set & Tap the Block



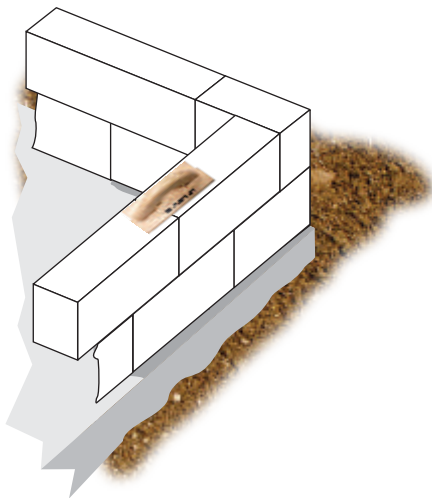
- Pick up each block and move it as close to the head joint as possible before lowering the block onto the bed joint.
- Excessive movement along the bed joint will force the thin-bed mortar into the corner preventing full adhesion with the head joint.
- Tap the end of the block to insure a full surface coverage of thin-bed mortar at the head joint and align with string line. Joints should maintain a thickness of 2 to 3 mm.
- Repeat installation for subsequent courses.

■ Step 4 : Fixing of Wash Basin & WC

- Fix the wash basin or WC on bracket.
- Bracket should be inserted in concrete fill between AAC wall (Bond Beam)
- Specification of beam (1 cement :2 coarse aggregate :4 coarse sand or M15 Grade), Do not fix bracket in AAC blocks



■ Step 5 : Rasp As Needed



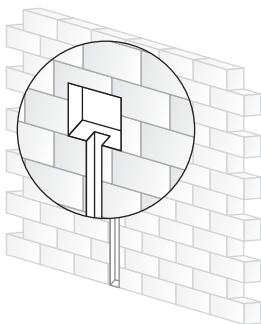
- As needed, rasp (sand) the topside of the wall to ensure a level bed-joint for the next course.
- This is required less often if block is installed with in tolerances.

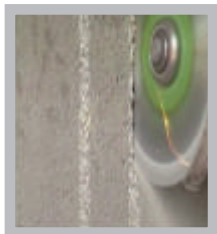
Wall Installation

- **Special Jobs**

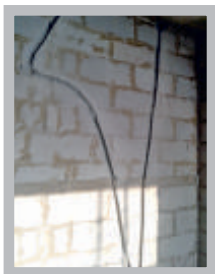
Chasing for Conduit

- Cut the marking area with rotator cutter.
- Use light chisel & hammer to break the marked area.
- Deepness of chasing should be $1/3^{\text{rd}}$ of the thickness of the wall.
- After placing the pipes sprinkling from water at chase area.
- Use cement sand mortar (1: 6 PPC Cement : Sand) to fill chase area.
- Before application, clean surface using a scrub brush & after application a rubber or wood float is used to smooth the wall surface.
- After that use chicken mess or fibre glass mesh should be directly installed over layer of render at chasing area.





Step-1



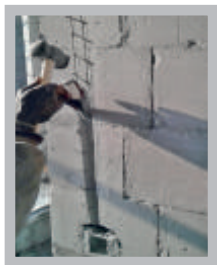
Step-4



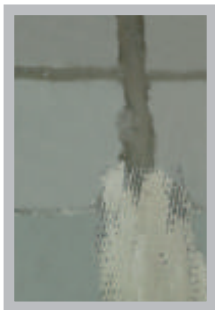
Step-2



Step-5

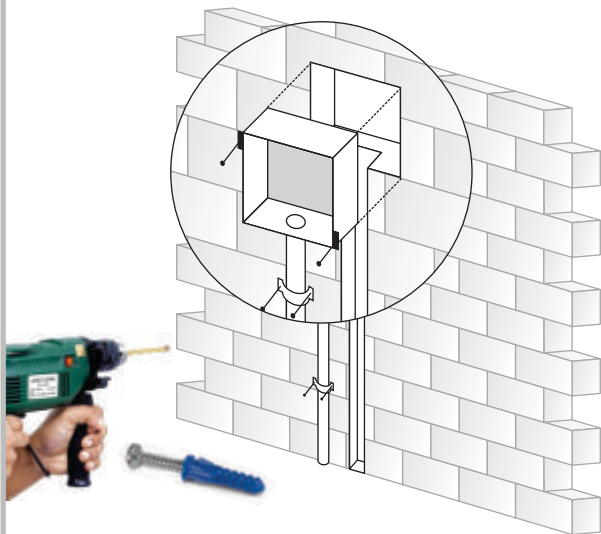


Step-3



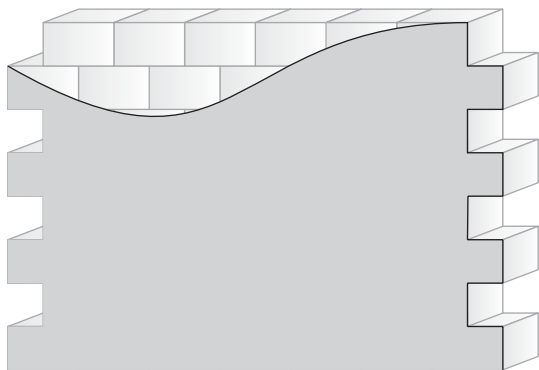
Step-6

■ Install Conduit & Electric Boxes



- Install cable, flexible or rigid conduit in channel and secure with channel clips, observe local codes for type of conduit, proper attachment and channel depth.
- Electrical boxes may be fixed to the wall with course threaded screws. As an option, glue, foam or thin bed mortar may be used.

■ Curing after Casting



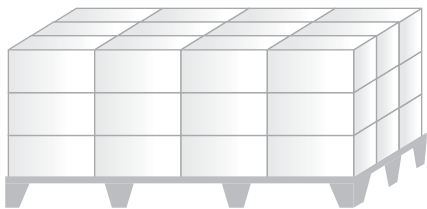
- Once the wall is erected, curing at the joints "is to be done for minimum 2 to 3 days".
- Before plastering, cement slurry may be applied on the walls and only leaner mix shall be applied. The thickness must be 10-12 mm (2-layers) in the exterior walls and on the internal wall it should be 1 layer of 10-12 mm. In case of dry walls plastering can be avoided. In such cases directly P.O.P./ Gypsum Plaster can also be applied.

Do's and Dont's

Stacking & Storage

✓ DO

- Stack on dry and even surface to avoid damage and contact with moisture (If available on pallets).
- Keep material covered (in rainy season if possible).
- Blocks must be stacked on an even surface and height of stack must upto 1.5m and discontinue at every 3m.



✗ DON'T

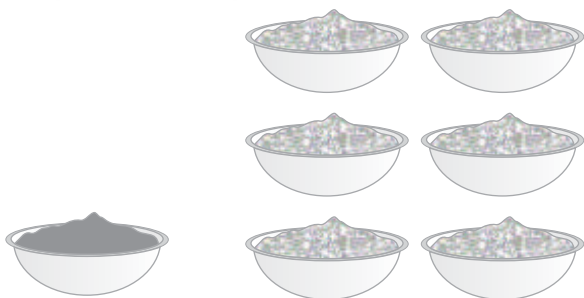
- On uneven and wet surface.
- Avoid multiple handling.
- Avoid hap-hazard stacking.



Mortar with Masonry

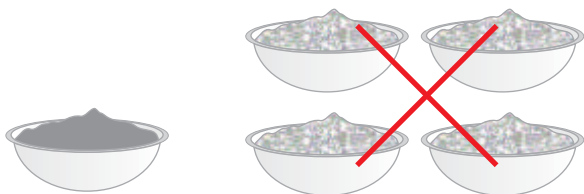
✓ DO

- Use mortar mix 1 : 6 (Cement : Sand).
(Saves Cement)



✗ DON'T

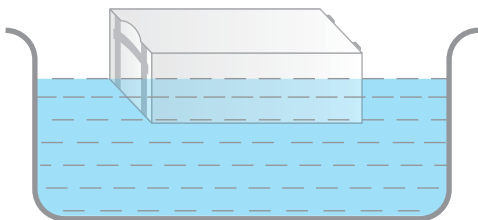
- Rich mortar mix 1:4 (Cement : Sand) will shrink so it leaves bond with blocks. It causes cracks in wall.



Wetting of Block Before Application

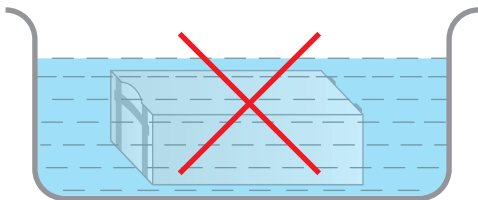
✓ DO

- Dip only surface in the water & lift immediately.
(Saves Water)



✗ DON'T

- Keep it immersed or soak for a long time

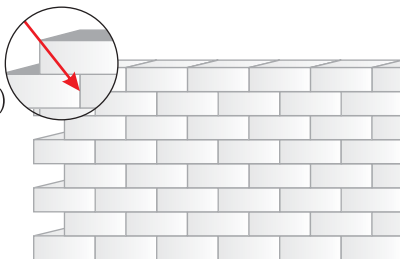


Mortar Thickness

✓ DO

- Keep it limited to 10 - 12 mm with cement mortar, or as per IS code. Use thin bed mortar for thickness upto 3 mm. (*Saves Mortar*).

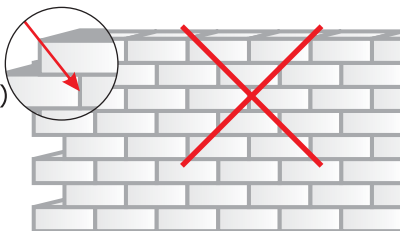
(<=10-12 mm)



✗ DON'T

- Keep it more than 10-12 mm.

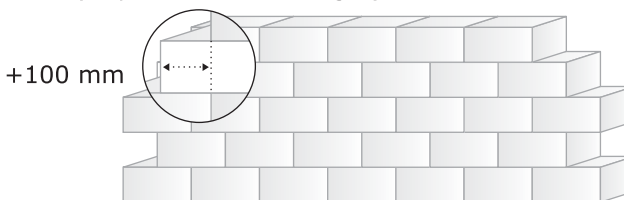
(>=10-12 mm)



Joint Pattern

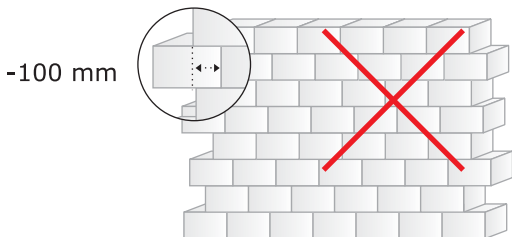
✓ DO

- Staggered joint with minimum 100 mm bearing.
(Improves Wall Strength)



✗ DON'T

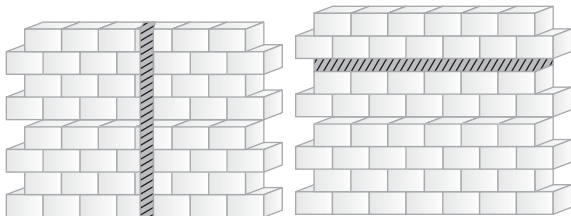
- Keep lesser than 100 mm bearing



Coping Beam

✓ DO

- Nominal bond beam (coping beam) must be provide of min. 2 bars of 6mm HSD or 8mm mild steel at every 1.2 meters to increase strength and stiffness to masonry wall. It should be of M 15 grade (1:2:4) and thickness not be more than 75mm.
- For horizontal coping beam if wall having height 18 times thickness of wall then we need to implement nominal beam (clause no 4.6.4).
- In case of vertical stud or mullian the distance between two consecutive columns or wall, for 100mm to 150mm block it will multiplied by 30 times of thickness of wall and 200mm and above thickness block it will multiply by 36 times of thickness of wall (IS 6042, clause 6.2.3.3).



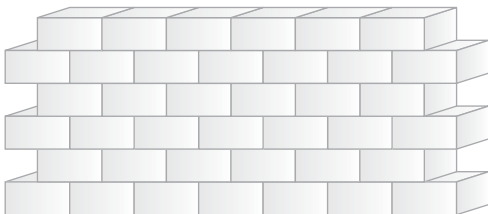
Coping Beam

- Joint reinforcement shall be used in conjunction with cement mortar (1:2), it should be placed at first and second bed joints immediately above and below wall openings shall not be located closer to bond beam by 600mm (clause no 4.6.5.3).
- Slip joint - lay DPC slip joint material beneath the alignment of blocks between the first course and foundation or ground floor concrete slab under external or internal walls, (clause no 4.6.2.4)
- Control joints 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 (clause no 4.6.6). - is code 6041.

Maximum Height of Wall Built in a Day

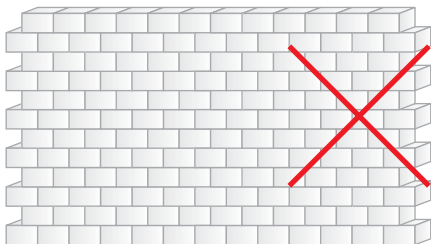
✓ DO

- Height of wall to be constructed in a day max. Upto 6 layers (1.5 meters) and for 100 mm upto 1 meter.



✗ DON'T

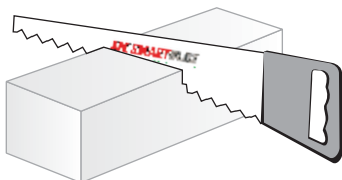
- More than 6 layers in a day.



Block Cutting

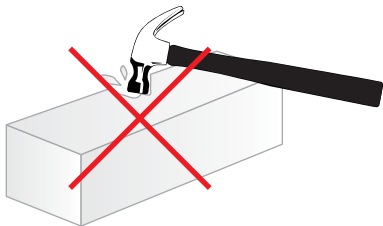
✓ DO

- use tool like JK Smart Tool - handsaw or rotary cutter.
(Precise cutting & less wastage)



✗ DON'T

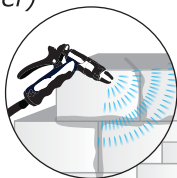
- Cut blocks with hammer or chisel



■ Curing of Masonry Wall

✓ DO

- Curing required only for mortar joint or light water sprinkling on wall.
(*Save Water*)



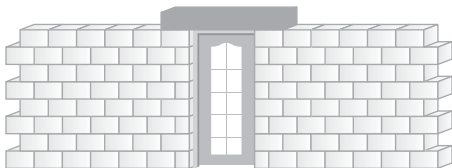
✗ DON'T

- Flooding wall with water



■ Lintel

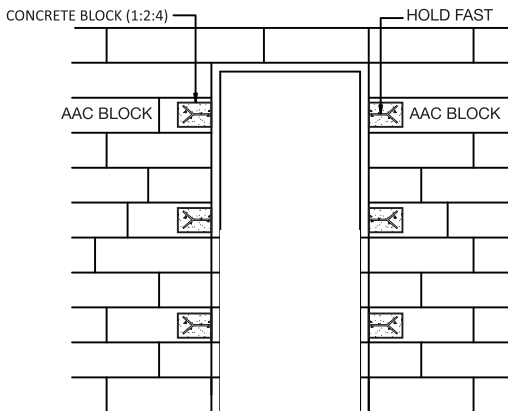
- It should rest on full block.
- The corner of door frames and window frames at lintel level & sill level, it may able to be provide a nominal reinforced concrete bond beam and vertical reinforced concrete stud at either side of vertical members of frames which may provide sufficient anchorage to holdfast.



- Lintels for doors, windows and other opening made of RCC CAST in situ or Precast Unit where opening are closer, continuous lintel may be provided minimum bearing should ne 150 mm.

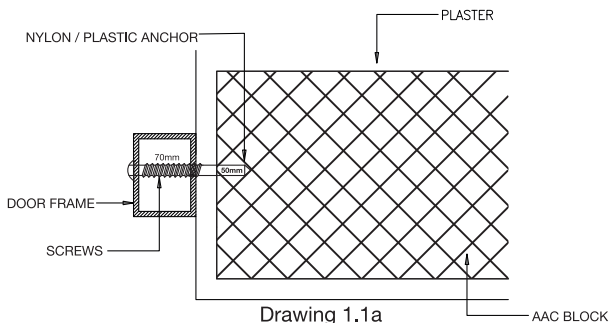


- **Door Frame / Window Frame Fixing : With Hold Fast**
 - It is generally orthodox method for fixing the doors frames
 - Hold fasts are fixed in concrete blocks (1 part cement :2 part aggregate :4 part coarse sand or M15 Grade).
 - Do not fix Hold fasts in AAC blocks direct.
 - Size of concrete block depends upon length of hold fast or it should be 200mm x 200mm



■ Door Frame / Window Frame Fixing : With Fasteners

- Use always nylon or plastic based anchors
- Wood, fiber, lead, metal or expansion anchors are not recommended .
- Use power drills to make holes for fasteners and masonry drill bits
- The anchor shall penetrate tightly in hole to avoid rotation when placing the screw
- Fasteners should be placed equally (depends upon size of door / window frame)
- For 120 mm length of fasteners, 50 mm should be inserted in AAC blocks & 70 mm inserted in door frame / window frame.



Step - 1



Step - 2



Step - 3



Step - 4



Step - 5



Nylon Anchor
Based Fasteners

■ Dry Stone Cladding

- Generally 30 to 40 mm thick stone should be used for cladding on AAC Block (Minimum 200mm) wall.
- Adjustable SS/Gun metal clamp should be fixed on stone for hanging .
- Spacing or number of clamp could be varying site to site or depends upon weight of stone .
- Use always nylon or plastic based anchors
- Wood, fibre, lead, metal or expansion anchors are not recommended .
- Use power drills to make holes for fasteners and masonry drill bits
- The anchor shall penetrate tightly in hole to avoid rotation when placing the screw
- 70 mm length fasteners should be used for cladding
- 20 to 25 mm gap between AAC wall & Stone should be maintained .
- For extra insulation, insulating material may be inserted in spacing cavity.

■ Dry Stone Cladding : Procedure

Step - 1



Step - 2



Step - 3



Step - 4



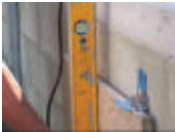
Step - 5



Step - 6



Step - 7



Step - 8



Step - 9



Nylon Anchor
Based Fasteners

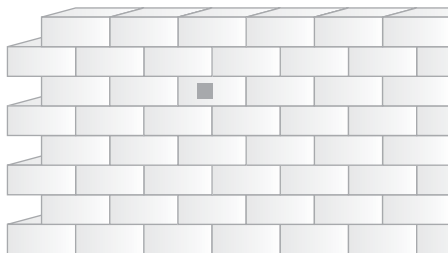


Different Types of Clamps

■ Electrical and Sanitary Chases

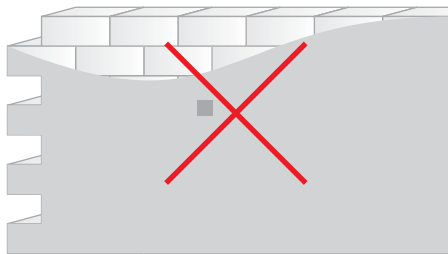
✓ DO

- Before plastering



✗ DON'T

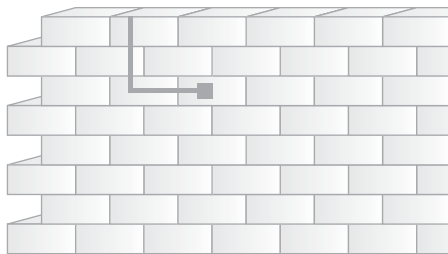
- After plastering



Chase Area

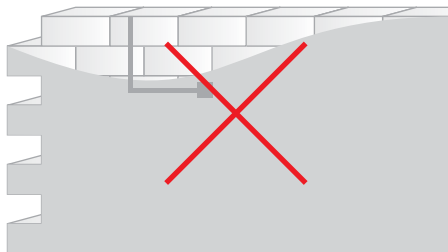
✓ DO

- Fill with compact mortar & apply wire mesh on it.



✗ DON'T

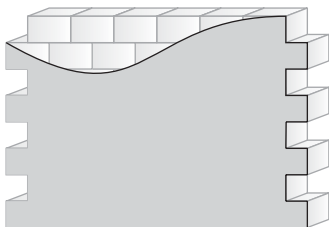
- Plaster without wire mesh on chase area.



Plastering Thickness

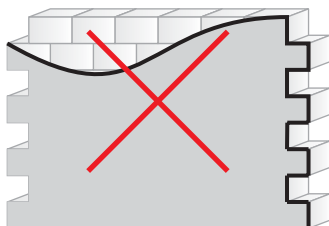
✓ DO

- External 15 mm & Internal 10 mm*.



✗ DON'T

- Thickness more than external 15 mm & Internal 10 mm*



*As per IS:6041 - 1985

Disclaimer : Content of this guide are for general reference & information only and can not be produced as a legal document. It is advisable to consult concerned authority for compliance and output.

Please Note Specifically

- No water curing is required for JK Smart bondmortar joint would be properly filled no air gap should be there in these joints
- Chasing for electric or other fittings must be done before plaster and it must be done with grinder or cutter.
- For fixing doors and windows frames, holdfast/nylon anchored based fastener is recommended.
- At the highest level of wall there must be gap (B/W ceiling & wall) of 20-25mm which must be filled with EXPANSION FILLER BOARD OR PU FOAM.
- Square Wire Mesh(Used in False Ceiling easily available at POP dealers) (G.I TYPE) must be applied on the different joint to avoid cracks like on wall and column Joints, wall and beams joints, on conduit and on all other different material joints.

Note : We recommend to use Wire Mesh on the entire surface for better results.

Smart Benefits



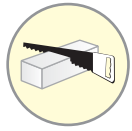
Moisture
Resistance



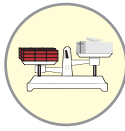
Energy
Saving



Eco Friendly



Workability



Light Weight



Earthquake
Safe



Fire Resistant



Termite
Resistant



Noise
Reduction



JK SMART BLOX
Autoclaved Aerated Concrete

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PLASTER OF PARIS

JK LAKSHMI
C E M E N T



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Power Mix
READY MIX CONCRETE



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