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Aslan Contracting & Transportation

ASLAN AAC Slab Panels Installation Guide

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1. Introduction.

This Installation Guide was prepared to help owners, design professionals, and construction managers and installers install ASLAN Autoclaved Aerated Concrete (AAC) slab panels. It is especially for the installer who may not be familiar with AAC Slab construction.

We have attempted to provide some general information regarding various areas of construction and details. However, since we cannot cover all areas or possibilities, we encourage and trust that you will ask for additional information regarding specific areas or possibilities.

2. General Installation Guidelines.

- Unload panels using pallet forks (forklift, nylon straps, slings or pallet fork on a crane cable). Consult an appropriate safety consultant or knowledgeable OSHA trainer for “rigging” or other safety considerations.
- Insure adherence to Leading Edge Support OSHA Guidelines.
- Stored areas should be accessible to delivery trucks and convenient to material staging areas. If possible, drop-deliver the material right to the material staging areas.
- Storage material should always be stored away from other construction activities on a flat-grade area that is not susceptible to standing water, erosion or settling.
- Keep the material banded until ready for installation.
- Excessive handling may cause damage. Set delivery schedule to match the erection sequence.
- Chips and spalls can be repaired. If any reinforcing is visible, contact an authorized AAC representative.
- All damaged surface areas may be repaired using a compatible AAC patching compound.
- AAC panels that have surface or minor cracks are usable. Contact an authorized AAC representative when cracks extend completely through the panel.
- Stored or staged materials should always be set on flat, stable grade on pallets or dunnage.
- Observe and provide all necessary temporary support and bracing in addition to following all safety laws and requirements.

Caution: Use safety gear, including hard hat, dust mask, and goggles to avoid inhalation of dust and protection of the eyes when handling ASLAN AAC Panels.

3. ASLAN AAC Slab Panels.

- **General Features.**

ASLAN Autoclaved aerated concrete AAC slab panels are lightweight, fire resistant, fast and easy to install and provide lifelong superior thermal insulation. ASLAN Slab Panels are steel reinforced autoclave aerated concrete elements. The steel wire reinforcement is covered with an anti-corrosion coating. ASLAN panels are produce in to different strength classes GB 3.3 & 4.4. *DIN EN 12602/2013 [Prefabricate reinforced components of autoclave aerate concrete].

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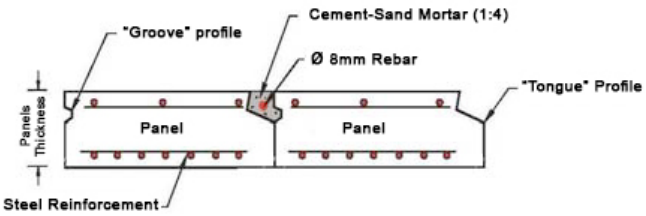
- **Uses.**

ASLAN Slab Panels are used as floor supported slabs. It can be used with ASLAN AAC Masonry, ASLAN AAC Wall panels, CMU Load-Bearing Wall, Concrete or Steel beams. These panels are used in residential, multi-family housing, hotels, offices and industrial building. ASLAN AAC meets the inverse demands better than any other material due to the numerous advantages of its physical, mechanical, entry efficiency safety properties.

simply-



- **Dimensions.**

Table - 1. ASLAN AAC Slab Dimensions.

Length:	Up to 6000 mm
Width:	300 – 600 mm
Thickness:	150 mm 200 mm 250 mm 300 mm

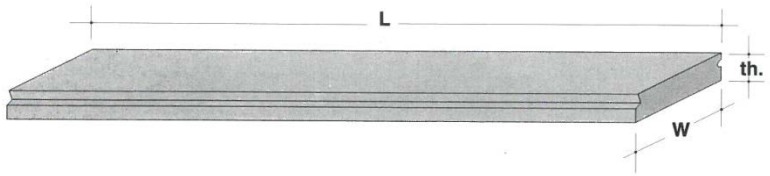


Figure 5B- 2. ASLAN AAC Slab panel.

4. Preparation.

Before Installation of ASLAN Slab

Panels:

1. **Clear the unloading and provisional storage area.**
   - Flat surfaces are required for unloading pallets, preferably close to final position.
   - Place pallets over wood blocks (panels must not be in contact with ground).
2. **Check material and installation logistics.**
   - Verify dimensions, positions and quantity of the panels according to ASLAN shop drawings.
   - Define sequence of panel installation according to ASLAN shop drawings. To help speed installation, place the panels with the groove side at the beginning and continue.
   - Define type of installation equipment (crane or similar).
   - Evaluate quantity of personnel required (see Table - 2).
3. **Check existing steel accessories.**
   - Steel accessories for holes in Slabs.
   - Steel accessories for holes in walls.
   - Steel accessories for cantilevered panels.
   - Fasteners to fix steel accessories.

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4. **Check support structure.**
   - All support elements (walls, beams, etc.) must be already finished before receiving floor and roof panels.
   - Check layout and top of supporting structure. ASLAN masonry block adjustments must not be less than 50mm height, or else cement-sand mortar (1:4) must be used.
   - Bearing lengths for ASLAN Slab Panels should comply with Table 3.
   - Place steel accessories if required (holes in walls, supporting areas, etc.).
   - Mark guidelines on top of the supporting elements, according to bearing lengths in ASLAN shop drawings.
   - For non-load bearing elements, put compressible sheets (polystyrene or similar) on top.

Table - 2. Average Efficiency for ASLAN Slab Panels Installation.

ASLAN Slab Panels	Average Efficiency (Panels)	Personnel Required	Notes
Slab Panels, Length from 300cm to 450cm, Thickness: 15cm and 20cm.	120 – 150	1 skilled, 3 laborers, crane operator and safety look out.	Depending on job sit access.
Slab Panels, Length from 300cm to 600cm, Thickness: 25cm and 30cm.	110 – 140	1 skilled, 3 laborers, crane operator and safety look out.	

Table - 3. Minimum Bearing Length (Support) for ASLAN Slab Panels.

Support Elements	Minimum Bearing Length
ASLAN Masonry or Wall Panel	75 mm
Concrete or Reinforced Concrete	75 mm
Steel Beam	50 mm

Figure - 3. Slap Panel Lifting Gear.

5. Installation of ASLAN Slab Panels.

1. Identify panels to be installed according to previous logistics.
2. Unpack panels using scissors.
3. Mark center of panels.
4. Place lifting gear at center of panel (Figure 4).
5. Using the pulleys, close clamps, clipping the tongue and groove sides of the panel.
6. Lower safety bars prior to lifting panel.
7. Raise the locking lever and indicate to crane operator to lift the panel.

Figure - 4. Placing the lifting gear at the center of panel.

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8. Two people will lead the panel to place it on the supports.
9. Clear safety bar from adjacent panel prior to placing panel on supports (Figure - 5).
10. Place the panel on the guidelines previously traced.
11. Once the panel is placed, remove the lifting gear.
12. This procedure should be followed for each successive panel.

Figure - 5. Before placing the panel on the supports, clear safety bar from adjacent panel.

Caution:

- Handle panels with care to avoid damage. Make chases needed prior to installation.
- Use safety gear, including hard hat, dust mask, and goggles to avoid inhalation of dust and protection of the eyes when handling ASLAN AAC Slab Panels.

6. Cast and Reinforcement of Longitudinal Joints and Ring Beams.

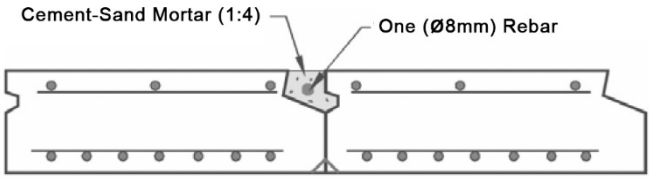

Figure - 6. Typical detail of longitudinal joint between ASLAN AAC panels.

After panel installation, place steel reinforcement in longitudinal joints (see Figure 6) and ring beams surrounding panels (see Figure 7, Figure 8, and Figure 9). Forms must be placed in perimeter ring beams.

One Ø 8mm (min) rebar is required in longitudinal joints (shear joints), wedged with rebar spacers (1 every 30cm), and filled with cement-sand mortar (1:4).

Ring beams require min. Two (Ø 12mm) rebars and a (Ø 8mm) every 40cm (diagonal) and filled with regular concrete (20 MPa). The maximum size of coarse aggregate is 3/8" and 5/6" of slump. Form surfaces must be moist before concrete casting. A smooth surface of concrete is required to match the top of the panels using a mason's trowel.

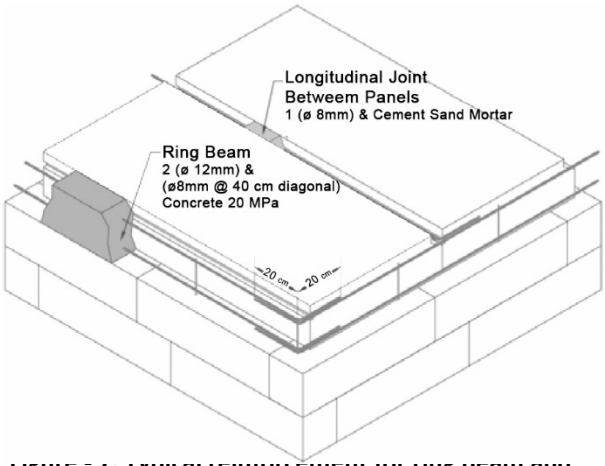

Figure - 7. Typical reinforcement for ring beam and longitudinal joints.

When ASLAN Panels are installed on a steel structure, steel plates must be welded (every 2

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longitudinal joints) to the structure for connection (see Figure 10).

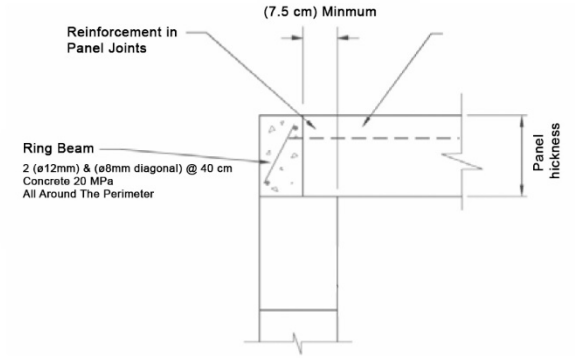

Figure - 8. Typical detail of panels supported on ASLAN AAC Wall.

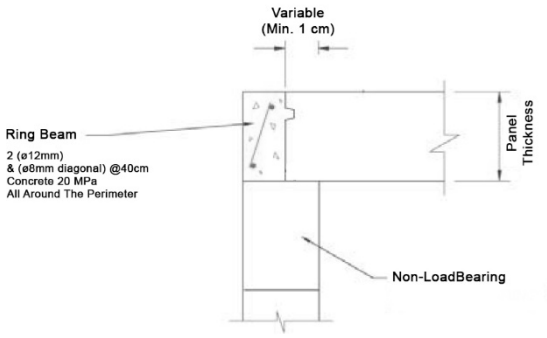

Figure - 9. Typical side bearing detail of slabs panel.

7. Utilities Installation.

Openings

Openings in Slab panels (Floor & Roofs) for A/C ducts, staircases, roof windows, air exhausters, etc. are built using steel supports.

Electrical Conduits

Electrical conduits with a diameter < 2.5 cm can be lodged through longitudinal joints on top or bottom of the panels. For electrical conduits with a diameter > 2.5 cm, longitudinal joints can be widened to lodge them. It is not recommended to chase on top of panels. It is possible to define cut surfaces in panels regarding installations.

Caution: Concrete dust contains quartz silica, a potential human carcinogen. Inhalation of concrete

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dust above required or recommended exposure levels may be harmful. Proper dust protection is recommended when cutting AAC.

Piping Lines

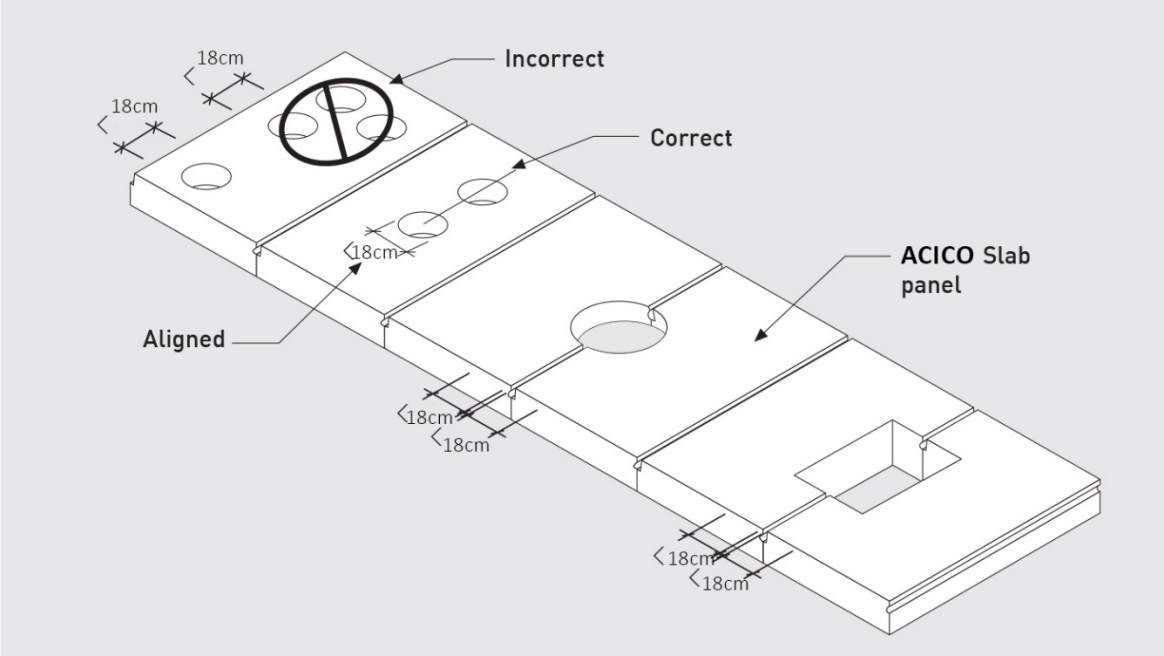
When required, PVC and other piping lines can pass through holes in the panels. The maximum hole diameter permitted in panels is 10 cm. If more than one hole is required, they must be aligned along the length of the panel. Only one longitudinal rebar in the bottom reinforcement of the panel can be cut.

Surface Patching

Use ASLAN Repair Mortar to patch chips, breaks and other imperfections on surfaces of ASLAN Slabs Panels. ASLAN Repair Mortar is prepared in a bucket, adding water and mortar from the bag (see instructions on the bag) and mixed with a stirrer using a power drill or by manual means (depending on quantity to be used). It is applied using a spatula.

Caution: Use safety gear: Hard hat, gloves, dust mask and goggles to avoid inhalation of dust and protection of the eyes when handling ASLAN Slab Panels.

8. Panels Cutting,



According to shop drawings, identify ASLAN Slab Panels to be cut. Permissible cutting length is indicated on shop drawings. ASLAN Slab Panel can be cut 1/3 the width.

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Cutting Equipment Options

- Electric Circular Saw ($8^{1/4"}$ Blade diameter).
- Power Cutter (gasolinepowered 12" blade or Greater see figure below)

Cutting Procedures

a. Prepare a flat surface for cutting site.
b. Check dimensions of cuts to be made.
c. For transversal cut, wood pieces must be placed along the sides of the cut and at the edges of the panel.
d. For longitudinal cuts, wood pieces must be placed at every 1.8 meter (max.) for 15 - 30 cm thick panels and every 1.2 meter (max.) for panel thick 10 - 12.5 cm in thick.
e. Check for full contact between wood pieces and panel. Wedge if necessary.
f. Place a ruler as a guide and trace the cut dimensions.
g. Proceed with panel cutting, verifying that cutting dimensions comply with specifications. Transversal and longitudinal cuts must be made with panel in horizontal position; if full thickness is to be cut, perform cut from both sides.
h. Apply anticorrosive paint at reinforced bar tips.

Caution: Use safety gear: Hard hat, gloves, dust mask and goggles to avoid inhalation of dust and protection of the eyes when handling ASLAN Slab Panels.

9. Equipment / Tools.

Below is a list of equipment, tools and materials typically required for the installation of ASLAN Slab Panels:

1. Crane or similar.
2. Lifting Clamp.
3. Slab Lifting Gear.
4. Sanding Float.
5. Chasing Tool.
6. Spatula.
7. Router.
8. Power Drill.
9. Safety Gear (goggles, dust mask, gloves, hard hat).
10. Circular saw with 8 1/4" or 9" metal or diamond blade.
11. Repair Mortar.

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Note: Major equipment / tools are listed but not limited to items noted above to complete the installation.

Important

- Always use the safety bars during lifting a panels.
- It is strictly forbidden at any time for persons to be under the load during lifting.
- Handle the clamps with care.
- The maximum load-bearing capacity of the clamp may never be exceeded.
- Never put hands, arms, feet, head or legs under the load, or between the jaws of the clamp
- The load must always be hoisted; it may not be dragged along the ground.
- Avoid sudden movements to prevent accidental release of the load.
- Check the clamp to insure it is in good condition and working properly.
- In the event that the clamp(s) is not operating properly, contact an authorized service representative.
- Identify slab panels top side and bottom side (see figure 12) – Do Not Install slab panels upside down.

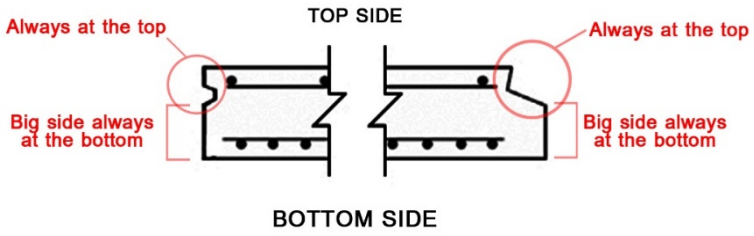

Figure 10. Identify Slab Panels Top Side and Bottom Side.