



## TITLE: ATLAS ROOFING STRUCTURED INSULATED PANELS (SIP)

### FIXING INSTRUCTIONS

#### a. DESCRIPTION

**Atlas Structured Insulated Panel (ATLAS SIP)** is a composite roof insulation panel, laminated to provide collectively a strong, multipurpose roof panel with excellent structural, thermal and aesthetic values.

ATLAS SIP (Standard) consists of:

- Magnesium Oxide Ceiling Board (MgO) 4, 6 or 9mm or alternatively NUTEC ceiling board (Ceiling)
- Polyurethane Foam Insulation (PU) 60-80mm or alternatively 80-120mm Polystyrene EPS (Core)
- Oriented Strand Board (OSB) 11mm or 12mm Plywood (Top)

#### **Recommended Cover:**

- Plain Torch-on,
- Mineral Torch-on,
- Bitumen roof shingles
- Concealed fixed Metal sheeting

**Note:** Standard waterproofing techniques are applied or as described under “Installation”

#### b. SIZE AND FASTENING

All ATLAS SIP sizes are nominal 122 cm x 244 cm. Actual coverage is approximately 120 cm x 242 cm. The edges of wood sheets can be prepared or cut back to allow for a tongue and groove profile. For more information on the product and its uses and limitations please see our website at [www.atlasroofing.co.za](http://www.atlasroofing.co.za) or contact us at [leadership@absamail.co.za](mailto:leadership@absamail.co.za). Check local building codes for any additional and/or applicable requirements.

ATLAS SIP is fastened with self-drilling, self-tapping roof fasteners without washers. Steel or Wood waver head screws are the recommended fastener. (Refer to the Installation section for further details).

#### c. DELIVERY, STORAGE, AND PROTECTION

Follow ATLAS ROOFING directions and requirements for protection of ATLAS SIP products prior to and during installation.

1. Deliver products to site in original wrapping, if applicable.
2. Store materials in weather-protected environment, clear of the ground and moisture, in accordance with ATLAS ROOFING instructions.



3. Outside storage of roofing materials:
  - a. Materials stored outside must be raised above ground or roof level on pallets and covered with a tarpaulin or other waterproof and “breathable” material. Insulation products should be properly stored and weighted to avoid weather and wind damage.
  - b. Factory-installed plastic wrapping is not designed as protective covering for insulation materials and should be removed. Use “breathable” type covers, such as canvas tarpaulins to allow venting and protection from weather and moisture.
  - c. Cover and protect materials at the end of each day’s work.
  - d. Do not remove any protective tarpaulins until time material will be installed. Extreme heat or humid conditions may require special storage requirements. Reference the supplier for product storage requirements.
  - e. Do NOT use materials that are wet or damaged to the extent that they will no longer serve their intended purposes.
  - f. Remove all damaged materials from the job site. Insulation that has been slightly wetted from rain should be dried out thoroughly before installation.
4. When staging materials on the roof during application, ensure the deck and structure are not temporarily overloaded by the weight of construction materials.
5. At the job site, no more material should be stored than what will be used within two weeks. For periods longer than two weeks, the materials should be properly warehoused; i.e., dry ventilated, on pallets, etc. No more material should be stored on the rooftop than can be used within five days. When prolonged inclement weather threatens, i.e., rainy seasons, no more roofing materials should be supplied to the rooftop than can be used within two days unless it can be secured and protected.

**d. WORKING ENVIRONMENT**

1. Work should only begin when the contractor has decided to his/her satisfaction, that all specifications are workable as specified, and that the contractor can meet project and code requirements.
2. The contractor should only begin roofing work when the purlins, rafters or trusses have been prepared as necessary, and are ready to accept the roofing materials installed as specified.
3. Provide a safe working environment, including, but not limited to, adequate fall protection, restriction of unauthorized access to the work area, and protection of the building and its occupants.
4. Safe work practices should be followed, including, but not limited to, keeping tools in good operating order; providing adequate ventilation if adhesives are used; and, daily housekeeping to remove debris and other hazards. See Safety Considerations and Warnings for further details.
5. Protect the building, contents, surrounding area, building occupants and contractor personnel during work. Coordinate all work operations with the building owner and building occupants so that adequate interior protection, as necessary, is provided and disruption to normal building operations is minimized.
6. When tearing off an existing roof, limit removal to the area that will be completely reroofed that day with the new roofing system.
7. If conditions are uncovered or created which would be detrimental to the proper conduct of specified work, immediately notify the building owner and ATLAS ROOFING of these conditions for consultation on acceptable treatments.

**e. SAFETY CONSIDERATIONS AND WARNINGS**

1. As with any construction process, safety is a key element. All applicable safety standards and good roofing practices must be followed. Read and understand ATLAS ROOFING installation instructions before starting application. Follow all precautions and directions.



2. Only properly trained and equipped contractors experienced in the installation of self driving nail base roof insulation panel application should install these systems. Always wear protective gear, including but not limited to: hardhats, goggles, heavy-duty gloves, and snug fitting clothing.
3. Fire safety precautions should be observed when ATLAS SIP products are installed. Protect foam from flame cutting and welding operations, etc. Provide suitable fire protection around chimneys or high temperature areas.
4. Thoroughly train all personnel in first aid procedures, and always comply with all Health and Safety Standards and fire codes. Also, use extreme caution when working around equipment, such as gas lines or HVAC units, which have electrical or gas connections.

**f. AIR/VAPOR CONTROLLER**

1. Air/vapor controller components must typically be installed when required by a design professional to address internal building pressures or humidity conditions, i.e. swimming pools.
2. Particular care should be taken to seal all openings on the deck around lighting fixtures, skylights, end walls, and at the ridge, etc.
3. The ATLAS SIP do not make provision for electrical wiring and installing contractors must interact closely with design professionals so that electrical conduits can be included during the installation where and if possible.
4. Install the air/vapor controller components per installation recommendations of the manufacturer.

**g. VENTILATION**

ATLAS SIP are not designed to allow air flow through the composite panel. For proper ventilation, follow the instructions and detail drawings of the design professionals.

**h. INSTALLATION**

1. In the design phase the requirement of support of 80cm -120cm purlin centers for limited load-bearing roofs and 600mm purlin centers for heavy load bearing roofs,
2. Not all ATLAS SIP boards are equal. Ensure that the design of the ATLAS SIP match the purpose and load factor specified by the design professionals for the project.
3. Check that the purlins or deck is true and even.
4. Remove or hammer down any protruding nails on wooden purlins.
5. Before commencing installation of the ATLAS SIP check how the panels will be supported at the overhang of the eave.
6. At the rake edge, make sure that adequate provision was made for the support of the ATLAS SIP panels on the required overhang.
7. Lay ATLAS SIP panels with the OSB side up and the short side parallel to the ridge.
8. An expansion clearance of 2 mm between adjacent panels should be maintained. Panels cut on-site cut to maintain a 2 mm gap between the sheeting on adjacent panels. Stagger end joints in succeeding panel rows.
9. Install ATLAS SIP Fasteners directly through the panel into the purlins.
10. Secure fasteners so that they are firmly imbedded into the wood surface without over or under-driving.
11. Avoid to install a ATLAS SIP panel smaller than 305 mm at the ridge or the eave.
12. Check the SIP top surface for uneven edges BEFORE covering or priming. Grind off any uneven edges with an electric sander or grinder.
13. Waterproofing primer and/or covering should be cover dry ATLAS SIPs as soon as possible.

Note: ATLAS SIP containing plywood, needs to be adequately covered and stored to stay dry

14. All clearances between panels are covered with 2mm bitumen torch-on. The bitumen torch-on overlap 75 mm to both sides of joint, forming a 150mm strip joint.
15. Install metal drip edge with a minimum 76 mm flange at the eaves and rake edges fastening every 203-254 mm per standard ATLAS ROOFING requirements.
16. Apply roofing underlayment and overlying roof covering to the ATLAS SIP panel according to the shingle or roof covering manufacturers' recommendations. Install the appropriate underlayment as needed for the type of roof covering you are working with. Follow the roof covering manufacturer's installation requirements and code requirements for all underlayment.
17. Install eave and ridge vents as described under the Ventilation section and shown on the design professional detail drawings.

**i. ATLAS SIP FASTENERS**

1. Wood Purlins: Use ATLAS approved Thread Point Fasteners. They need to be 40 mm longer than the overall thickness of the ATLAS SIP. If wooden purlin is less than 50 mm actual thickness, use fasteners with a minimum of 30 mm penetration and install 4 extra fasteners on the horizontal center line of the panel. Applying ATLAS SIP to plywood decks, use ATLAS approved ATLAS SIP Fasteners that penetrate through the deck at least 3 mm. If exposed fastener tips are not acceptable, contact ATLAS ROOFING for suggestions.
2. Steel Purlins Use Light-Duty Drill Point Fasteners that penetrate through the deck and not less than 25 mm into the steel purlin.
3. Concrete Deck: Use Nail-in Anchor, Drill-Tec™ #14 or CD-10 Fasteners that penetrate into the deck not less than 25 mm. If possible pre-drilling and advanced testing is recommended.
4. Special Applications: Contact ATLAS ROOFING for special applications not shown or mentioned here.

**j. STANDARD FASTENING PATTERN**

1. Number of Fasteners: Use a minimum of 15 Fasteners (5 on length and 3 across per 122 cm x 244cm panel to meet standard load requirements. Use additional fasteners at the rakes, eaves, and ridges. If high wind load requirements exist, contact ATLAS ROOFING for recommendations.

**Note:** Check the architect's design layout as well as eave and ridge detail drawings and specification for accuracy. Note ventilation roof details in detail drawings or visit [www.atlasroofing.co.za](http://www.atlasroofing.co.za) or contact ATLAS ROOFING for technical assistance at Pretoria 012 329 4545