

# Installation guide – Roof Rack

## MERCEDES SPRINTER

Anchored directly to the roof of the vehicle



## TABLE OF CONTENTS

WARNINGS	2
SECURITY WARNINGS	2
TECHNICAL WARNINGS	2
GENERAL WARNINGS	3
MAINTENANCE	3
REQUIRED MATERIAL	4
SUPPLIED MATERIAL	4
SUPPLIED HARDWARE	5
REQUIRED TOOLS (NON-INCLUDED)	6
REQUIRED PRODUCTS (INCLUDED)	6
REQUIRED PRODUCTS (NOT INCLUDED)	6
INSTALLATION STEPS	7
1. RUBBER SHEETS AND SEALANT JOINTS INSTALLATION	7
2. SIDE PLATES ASSEMBLY	10
3. CONNECT THE FRONT SIDE PLATES WITH THE REAR SIDE PLATES	12
4. CROSS BARS ASSEMBLY	14
5. WIND FAIRING ASSEMBLY	16
6. FINAL TIGHTENING AND TIGHTENING CHECK TOUR OF ALL RACK BOLTS:	20
ANNEXE 1: SOLAR PANELS ASSEMBLY	21

## WARNINGS

### SECURITY WARNINGS

**\*\*ATLAS Roadcamp disclaims all liability related to an injury which happened while installing, maintaining or using in any way ATLAS Roadcamp's roof rack\*\***

The first installation of a roof rack can take up to 6 hours.

Make sur you always:

- Are 2 persons to install a roof rack.
- Are secured with an approved safety harness and an approved anchor point higher than the vehicle at all times when installing a roof rack. If it is not possible, it is imperative to use scaffolds and / or 8-foot stepladders on each side of the vehicle in order to work in a safe manner. There is a significant risk of falling from the top of a vehicle.
- Wear safety glasses and cut resistant gloves

If you have any hesitations or questions while installing a roof rack, stop the work and contact ATLAS Roadcamp.

### TECHNICAL WARNINGS

- Before starting the installation, apply a protection, like cardboard or plastic wrap, to the roof of the vehicle in order to protect it.
- All bolts and nuts have to be tightened manually (using ratchets, Allen keys and torque wrenches) to the tightening torques indicated in this guide.
- NEVER use an impact driver as the hardware is in stainless steel so it can easily seize/grab and become unusable.
- At all steps where a stainless steel (SS) bolt is assembled with a nylon nut, it is mandatory to put anti-seize on the bolt in order to ensure that the assembly does not seize.
- Nylon lock nuts are used to assemble ATLAS Roadcamp roof racks. This type of nuts shouldn't be tightened and loosened repeatedly. Therefore, it is important to carefully follow the tightening steps prescribed in this guide.
- All assemblies without nylon lock nuts require the use a threadlock such as LOCTITE 242 or LOXEAL 54-03. It is important to apply it properly on the bolts prescribed in this guide.

#### GENERAL WARNINGS

- Installation of an ATLAS Roadcamp roof rack or any other component (fans, air conditioning, Thule cargo box, etc.) on the roof of your vehicle may cause or accentuate hissings, vibrations and/or turbulence. Correct installation of the rack's wind fairing helps to reduce these noises. However, ATLAS Roadcamp is not responsible for any noises, hissings, turbulences and/or vibration caused by the addition of roof components.
- ATLAS Roadcamp is not responsible for the increased fuel consumption of your vehicle as a result of the installation a roof rack.
- At all time, observe the maximum roof loads as well as the maximum heights prescribed by your vehicle's manufacturer.
- Distribute, as evenly as possible, the different loads on the 4 cross bars.
- ATLAS Roadcamp roof racks are designed to support RV roof items as solar panels, roof boxes and lighting LEDs. ATLAS Roadcamp disclaims all liability for uses or installations not intended for RVs.
- Any non-approved modification or alteration to an ATLAS Roadcamp rack will void the product warranty.
- The addition of items not approved by ATLAS Roadcamp will void the product warranty

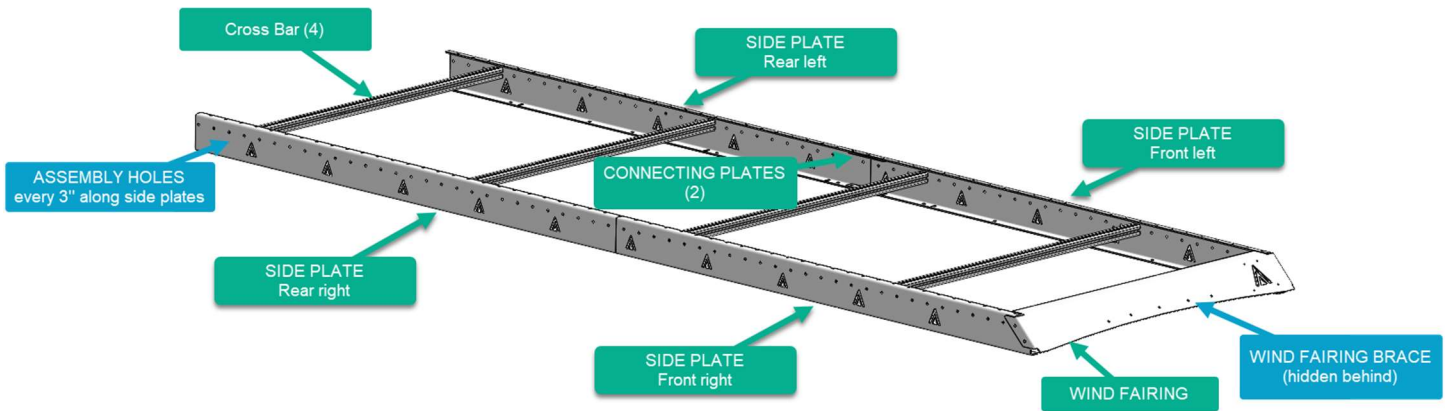
Reminder: At any time, if you have any doubts about the installation, stop immediately and contact ATLAS Roadcamp.

#### MAINTENANCE

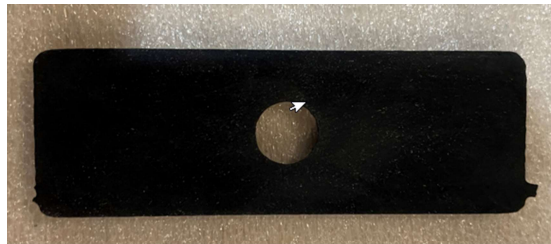
- All tightening torques must be verified after the first 100 km and 500 km traveled with your vehicle following the installation of a rack or a ladder.
- At each season change, verify the correct tightening of the hardware, the general positioning of the rack and the condition of the SIKA221 to ensure that the anchors are watertight.

## REQUIRED MATERIAL



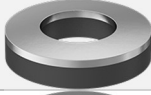








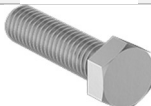



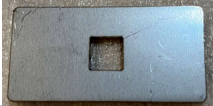
### SUPPLIED MATERIAL



- 22 rubber sheets – to insert in between vehicle's roof and side plates



SUPPLIED HARDWARE

QTY	Hardware items	Hardware images	Assembly usage
22	Button head bolt SS 5/16 x 1"		To assemble side plates to the roof of the vehicle **16 bolts for the Sprinter 144" **22 bolts for the Sprinter 170" and 170"-EXT
14	Button head bolt SS 5/16 x 1"		- 6 to assemble top connecting plates to the side plates - 8 to assemble cross bars to side plates
22	Sealing washer SS 5/16"		To be inserted on the 22 button head 5/16" bolts
4	Flat washer SS 3/8"		To assemble wind fairing with front side plates
4	Button head bolt SS 3/8-16 X 1"		To assemble wind fairing with front side plates
4	Nylon locknut SS 3/8"-16		To assemble wind fairing with front side plates
34	Flat washer SS 5/16"		- 12 to assemble top connecting plates to the side plates - 22 to assemble side plates to the roof of the vehicle
28	Nylon locknut SS 5/16"- 18		- 6 to assemble top connecting plates to the side plates -22 to assemble side plates to the roof of the vehicle
5	Button head bolt SS 1/4"- 20 X 1"		To assemble wind fairing brace to the wind fairing
17	Flat washer SS 1/4		- 5 to assemble wind fairing brace to the wind fairing - 12 to assemble 3 solar panels to the cross bars
5	Nylon locknut SS 1/4"- 20		- To assemble wind fairing brace to the wind fairing
12	Boulon à tête Hex. 1/4"-20 x 5/8" Hexagonal SS 1/4-20 x 5/8"		- To assemble wind fairing brace to the wind fairing
12	Lock washer 1/4"		- To assemble 3 solar panels to the cross bars
12	SS drop-in T-nut w/spring-ball 1/4-20		- To assemble 3 solar panels to the cross bars
12	Carriage bolt SS 5/16"-18 x 1"		If the roof rack is installed on Mercedes originals rails and not directly on the vehicle's roof
12	Plates (designed for Mercedes rails)		To be inserted on the 5/16" carriage bolts if the roof rack is installed on Mercedes originals rails and not directly on the vehicle's roof.

REQUIRED TOOLS (NON-INCLUDED)

- X-acto.
- Scraper
- Torque Wrench
- Allen key or Hex key bit socket 5/32", 3/16" et 7/32" with a ratchet wrench
- Sockets : 9/16", 7/16" et 1/2".
- Caulking gun.

REQUIRED PRODUCTS (INCLUDED)

- Anti-seize tube



REQUIRED PRODUCTS (NOT INCLUDED)

- Isopropyl alcohol 99%
- Clean rags
- Large blanket or caton.
- LOCTITE 242 OU LOXEAL 54-03 :
- SIKA Flex 221 : Metal paint



**\*\*Note valid for the entirety of this installation guide: At all steps where a stainless steel (SS) bolt is assembled with a nylon nut, it is mandatory, to put anti-seize on the bolt in order to ensure that the assembly does not seize.\*\***

## INSTALLATION STEPS

### 1. RUBBER SHEETS AND SEALANT JOINTS INSTALLATION

Step 1 final result :



#### REQUIRED MATERIAL:

- Rubber sheets:
  - Mercedes Sprinter 144'' : 16 sheets
  - Mercedes Sprinter 170'' : 22 sheets
  - Mercedes Sprinter 170''- EXT : 22 sheets
- Sealant: SIKA221
- Metal paint

1.1 Clean the roof surface near the sealed caps thoroughly with Isopropyl alcohol 99%

1.2 Remove the original Mercedes sealed caps using a wood a scraper or a wood chisel or an X-acto according to your preference.



1.3 Make sure to remove all excess of original sealant.



- 1.4 Paint the outline of the openings with metal paint and let dry.



- 1.5 Liberally apply a bead (about 1/2" bead diameter) of SikaFlex221 around the entire circumference of the bores. The joint of Sika221 must be as uniform as possible and seal the circumference of the hole.



- 1.6 Place the rubber sheets with their holes aligned as best as possible with the center of the openings on the first bead of SIKA221.



- 1.7 Apply a 2nd bead of SIKA221 generously (approximately 1/2" bead diameter) around the circumference of the holes in the rubber plates. The joint of Sika221 must be as uniform as possible and seal the circumference of the holes.



## 2. SIDE PLATES ASSEMBLY

Step 2 final result:



### REQUIRED MATERIAL:

- 2 front side plates (right and left)
- 2 rear side plates (right and left)
- \*\*16 or 22 button head bolts 5/16''-18 x 1''
- \*\*16 or 22 sealing washers 5/16''
- \*\*16 or 22 flat washers SS 5/16''
- \*\*16 or 22 nylon locknuts SS 5/16''-18

\*\* 16 for the Sprinter 144'' et 22 for the Sprinter 170'' and 170''-EXT.

2.1. Insert the sealing washers 5/16'' onto the button head bolts 5/16''-18 x 1''



2.2. Insert a 5/16''-18 x 1'' button head bolt in a round hole through the base plate of a front side plate (the hole of your choice).

**PICTURE TO COME**

2.3. Align the side plate with its respective rubber sheets previously placed on the vehicle. Carefully lay the side plate on the rubber sheets. Help yourself align the side plate with the rubbers by using the bolt you just inserted into the side plate by inserting it into its respective bore in the vehicle.

**\*\*It is important to gently place the side plates as precisely as possible, in their respective locations so that the Sika221 is as efficient as possible to seal the car hoers. It is strongly recommended to perform this step with 2 people. If necessary add Sika221\*\***

- 2.4. Insert all other missing 5/16"x-18 x 1" bolts through the base of the side plate and vehicle.
- 2.5. Inside the vehicle, insert the 5/16"-18 x 1" flat washers and screw the 5/16"-18 nylon lock nuts on each of the bolts. Manually tighten the nuts so that the side plates are resting on the roof and in good contact with the SIK221.

**\*\*To allow easy insertion of the crossbars later, do not tighten the bolts firmly at this time\*\***

- 2.6. Repeat steps 2.2 at 2.5 for the 3 other side plates of the rack.

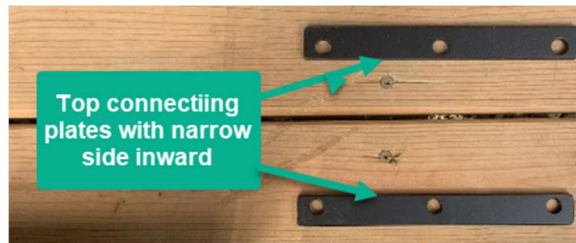
### 3. CONNECT THE FRONT SIDE PLATES WITH THE REAR SIDE PLATES

Final result:



REQUIRED MATERIAL:

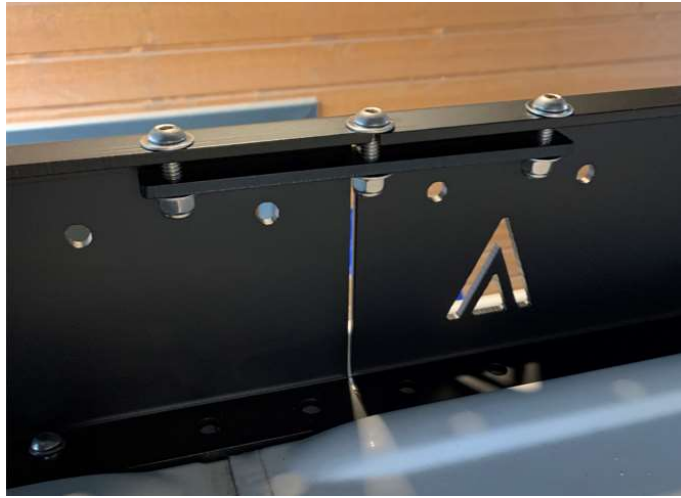
- 2 connecting plates to assemble the top of the side plates
- 6 button head bolts SS 5/16" X 1"
- 12 flat washers SS 5/16"
- 6 nylon locknut SS 5/16"



3.1 Manually align the front and rear side plates as straight as possible.



- 3.2 Insert a flat washer on a 5/16''-18 x 1'' button head bolt
- 3.3 Insert the button head bolt (with the washer) through the side plate's top and the connecting plate. (put anti-seize)
- 3.4 Insert a flat washer and manually screw a nylon lock nut on the bolt.
- 3.5 Repeat these steps for the other 2 connecting plate bolts.
- 3.6 Repeat steps 3.1 to 3.5 for the other connecting plate.



- 3.7 Complete the final tightening of all 6 bolts of the connecting plates using a torque wrench
  - 6 button head bolts 5/16'' (3 per top connecting plate) : **12 Nm**

#### 4. CROSS BARS ASSEMBLY

**\*\* SOME PHOTOS IN THIS SECTION ARE TAKEN FROM A FORD TRANSIT ATLAS ROADCAMP RACK AND NOT A MERCEDES SPRINTER RACK, BUT THEY ARE STILL REPRESENTATIVE \*\***

Final result:



#### REQUIRED MATERIAL:

- 4 black anodized aluminum crossbars 1.5" x 1.5" x 52 1/8"
- 8 button head bolts SS 5/16 X 1"
- Threadlock: LOCTITE 242 or LOXEAL 54-03

4.1 Move the left and right side plates as far apart as possible (facilitates the insertion of the crossbars).

4.2 Position the 4 crossbars on the seats of the side plates lined up with the assembly holes of your choice (assembly holes are present every 3" along the side plates). Position the crossbars according to the configuration of the accessories of your vehicle roof and pay particular attention to the dimensions of your solar panels so as not to have to move the crossbars again.

**\*\* Crossbars should be distributed as evenly as possible. Minimum 1 crossbar assembled to the rear side plates \*\***



4.3 Add a drop of threadlock on the end of a button head bolt 5/16"x1.".

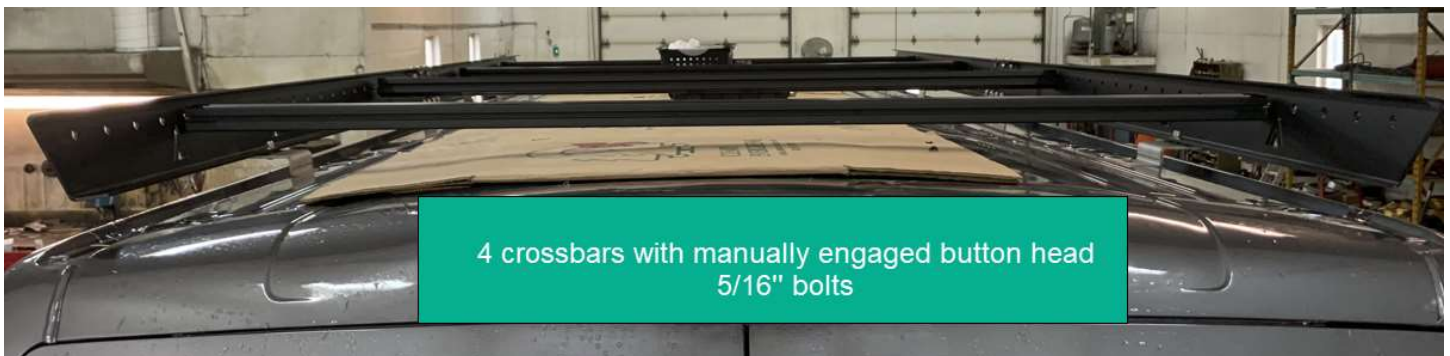
4.4 Engage the bolt, with the threadlock added on it, through the side plate and manually screw a few turns into the crossbar.



4.5 Repeat these steps for the opposite end of the crossbar.



4.6 Repeat these steps for the other 3 crossbars



4.7 Tighten the 8 crossbar bolts to a torque of **12 N•m** using a torque wrench.



## 5. WIND FAIRING ASSEMBLY

Final result:



REQUIRED MATERIAL:

- 1 wind fairing.
- 1 wind fairing brace.
- 5 button head Bolt SS 1/4"-20 X 1.25".
- 5 flat washers SS 1/4".
- 5 nylon lock nut SS 1/4"-20.
- 4 button head Bolt SS 3/8"-16 X 1".
- 4 flat washer SS 3/8".
- 4 nylon lock nut SS 3/8"-16.

5.1. Installation of the wind fairing brace.

Step 5.1 final result:



5.1.1. Place the brace inside the wind fairing.



5.1.2. Insert the 5 button head  $\frac{1}{4}$ "-20 x 1  $\frac{1}{4}$ " bolts through the wind fairing first and then through the brace



5.1.3. Insert the  $\frac{1}{4}$ " flat washers and a nylon lock nuts  $\frac{1}{4}$ "-20 on the bolts.

5.1.4. Tighten the bolts/lock nuts assemblies to a torque of **12 N·m** using a torque wrench.

5.2. Wind fairing and front side plates assembly.

5.2.1. Position the wind fairing so as to align its assembly holes to the assembly holes of the side plates.

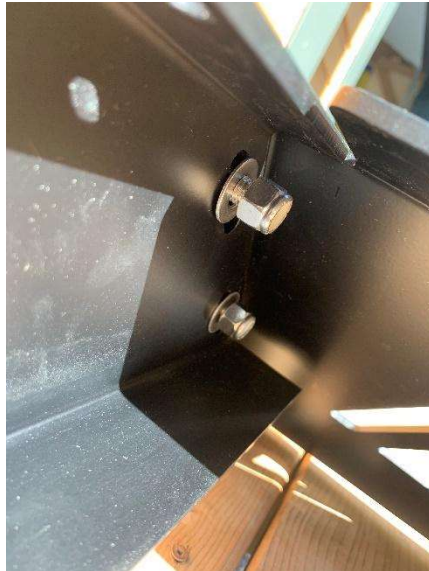


5.2.2. Insert the 3/8"-16 x 1" bolts through the wind fairing and then the side plate.

**\*\*\*IMPORTANT: Put anti-seize on the bolts\*\*\***



5.2.3. Insert a 3/8" flat washer and a nylon lock nut 3/8" on the bolts.



5.2.4. Finger tighten the lock nuts to secure the assembly.

5.2.5. Adjust the height of the wind fairing so that its center, at the bottom of it, is at least 1 inch from the roof of the vehicle.

**\*\* WARNING: This clearance is necessary to avoid any interference between the wind fairing and the roof when the vehicle is moving\*\*\***



To adjust this clearance, raise the wind fairing higher than the side plates using the oblong holes allowing this adjustment.



5.2.6. Tighten the 4 bolts/nuts assemblies to a torque of **16 N·m** using a torque wrench.

6. FINAL TIGHTENING AND TIGHTENING CHECK TOUR OF ALL RACK BOLTS:

Tighten each of the following bolts/assemblies to the specified torque:

- 16 ou 22 roof anchor bolts 5/16" x 1" : **7 N·m**
- 6 – SS 5/16"-18 x 1" button head bolts (top connecting plates to side plates): **12 N·m.**
- 8 – SS 5/16"-18 x 1" button head bolts (side plates to crossbars): **12 N·m.**
- 5 – SS ¼"-20 x 1.25" (wind fairing with its brace): **12 N·m.**
- 4 – SS 3/8"-16 x 1" (wind fairing with side plates): **16 N·m.**

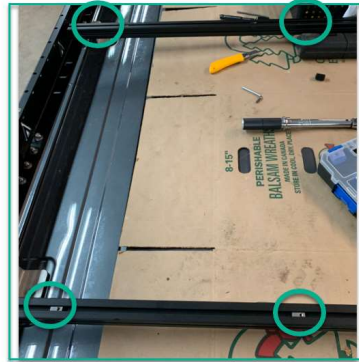
## ANNEXE 1: SOLAR PANELS ASSEMBLY

### REQUIRED MATERIAL:

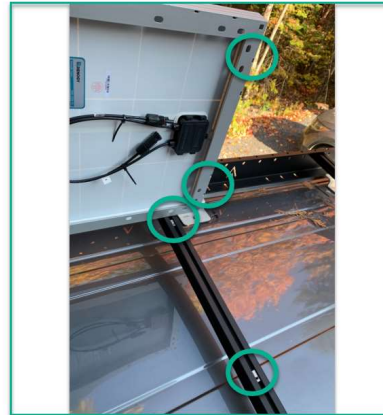
- 12 SS drop-in T-nut w/spring-ball 1/4"-20
- 12 lock washers 1/4"
- 12 Hex. head 1/4"-20 x 0.625" bolts

### STEPS:

1.1. Insert 2 spring nuts 1/4"-20 in the groove of a crossbar provided for this purpose.



1.2. Position the spring nuts at the same distance as the assembly holes of your solar panel to be installed.



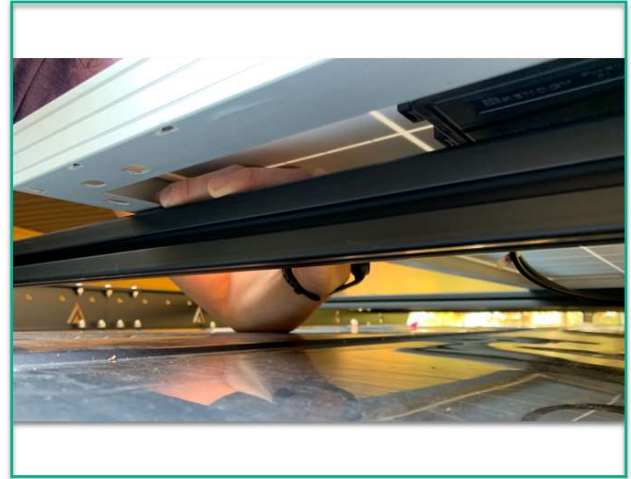
1.3. Repeat these steps on the other selected crossbar to install your solar panel on.

1.4. Place a panel on the crossbars.

1.5. Insert a 1/4" lock washer on a hex. Head 1/4"-20 x 5/8" bolt.



1.6. Insert the assembly through the solar panel and manually screw into a spring nut.



- 1.7. Repeat these steps for the other 3 corners of your solar panel.
- 1.8. Tighten all bolts securely using a 7/16" ratchet wrench.
- 1.9. Repeat these steps for each solar panel (material provided for the installation of 3 panels).