

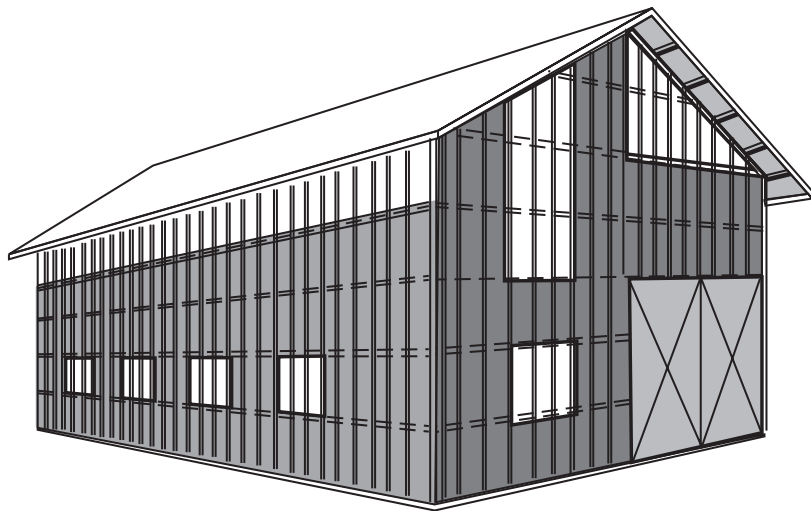
# SunSky<sup>®</sup>

Integrated Light Transmitting Sheets

for

Skylights in Roofing and Siding

## Installation Guide



## *Contents*

A. Introduction	3
B. Transportation, Handling & Storage	4
C. Chemical Resistance and Fire Hazard Comments	4
D. Profile Matching	5
E. Sawing, Cutting & Drilling	5
F. Safety Measures	6
G. Panel Orientation	6
H. General Indications for Installation	6
I. Installation Comments	9
J. Fastening & Sealing	10
K. End/Weather Lap Installation	13
L. Options for Installation	15
M. Important Installation Notes	18

### A. Introduction:

SunSky is a top grade light-transmitting, corrugated polycarbonate panel designed to integrate with the major types of metal roofing and siding panels intended for single or multi-panel run skylights or sidelights in roofs and walls of metal-cladded structures.

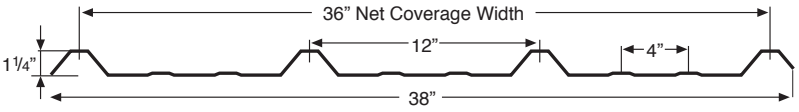
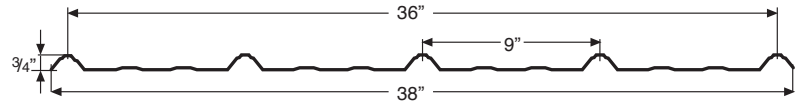

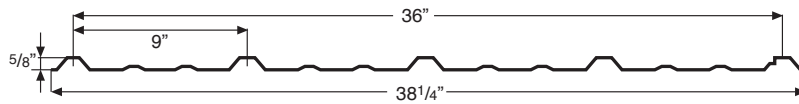
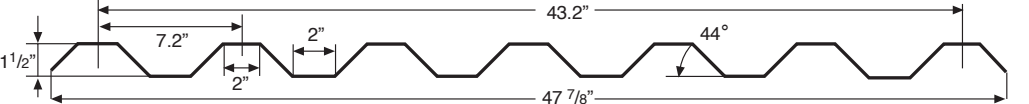

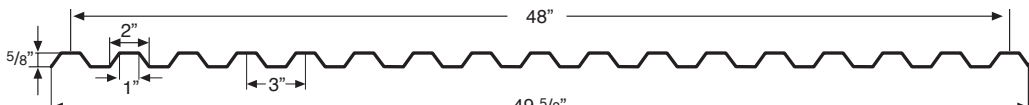
Standard SunSky Profiles Available	Panel's Basic Dimensions and Profile Illustration
<b>SunSky 12"</b>	
<b>SunSky 9"</b>	
<b>SunSky 9" B CR</b>	
<b>SunSky 9"C</b>	
<b>SunSky 7.2"</b>	
<b>SunSky 7.2"</b>	
<b>SunSky 3"</b>	

Table 1

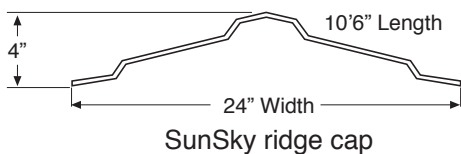


Figure 1

#### Various Sunsky Skylight Arrangements

- I Single panel, single span
- II Single panel run
- III Multi-panel run

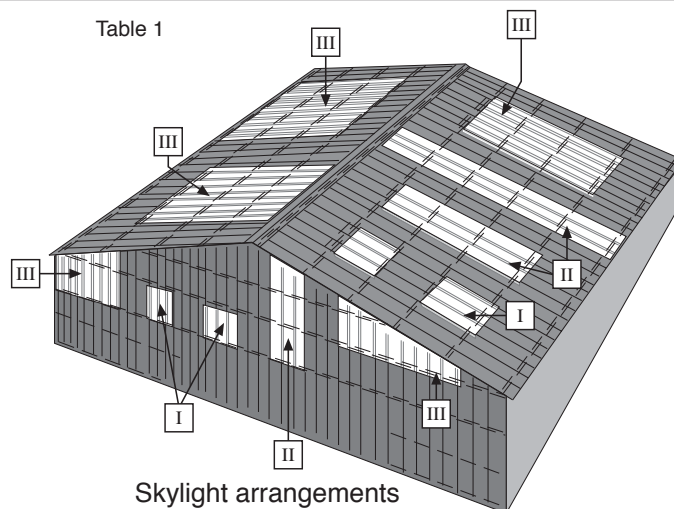


Figure 2

## **B . Transportation, Handling & Storage:**

1. Transport and store SunSky panels horizontally, on flat, sturdy pallets, equal or longer than the longest panels. Short panels should be stacked on top of longer ones. The panels should be secured and fastened to the pallet during transportation.

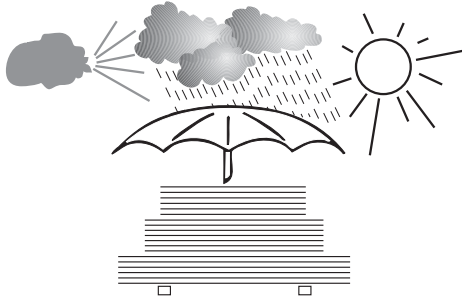


Figure 3

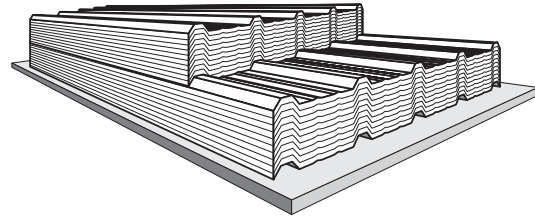


Figure 4

### Storage of panels

2. Store SunSky panels in a cool and shaded place, out of direct sunlight. Avoid covering the stack of panels with dark or heat-absorbing materials or objects, to prevent solar heat buildup.
3. When necessary to store panels outdoors, cover the stack with a white opaque polyethylene sheet, corrugated cardboard or other materials that do not absorb or conduct heat. Verify that the entire stack is covered.
4. SunSky panels are tough, requiring no special care. Nevertheless, we recommend some cautionary steps:
  - Avoid stepping on or driving over the panel while on the ground, or folding it during handling and installation.
  - Avoid dragging the panel on the ground, scraping it against the structural elements or any other sharp or rough objects, to prevent it from getting scratched.

## **C. Chemical Resistance and Fire Hazard Comments:**

1. SunSky panels are resistant to a variety of chemicals and exhibit limited resistance to a second group of chemicals. A third group of chemicals may attack and damage the panel. Degree & severity of damage depends upon chemical type and duration of exposure.

Consult the Chemical Resistance Table in the full brochure.

When in doubt, consult the Suntuf Inc. Technical Support Department or your distributor.

2. SunSky panels will melt down at approximately 400<sup>0</sup> F, generating vent openings for smoke release in the event of fire.

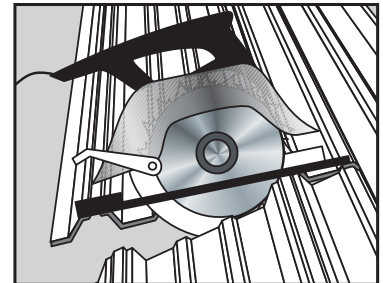
## D. Profile Matching:

1. SunSky profiles were designed to closely match commonly used metal profiles. These profiles, produced by a few major US suppliers, are manufactured with 5 and 4 main corrugations of 9 in. and 12 in. pitch respectively, with two minor corrugations in between. Other panels, appearing to be similar, differ in small but important details and an exact match may be difficult.
2. SunSky 12" profile will not fit closely over or under the older R-Panel, produced with one central minor corrugation.
3. Slight detail differences such as corrugation height, slant, wave distance etc. will hinder exact matching of such a panel with a SunSky profile. This may lead to insufficient sealing, water leakage and forced installation, putting undue stresses on the SunSky panel while trying to adapt it to an "almost similar" metal profile.  
**Undue stress may lead to premature failure and void any and all warranties.**

A careful comparison will disclose whether a standard SunSky panel matches your metal profile. In case of a mismatch, a customized SunSky profile may be produced to fit specific requirements, subject to a minimum quantity order.

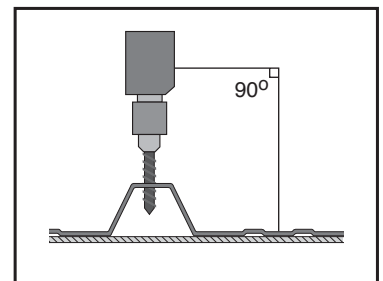
## E. Sawing, Cutting & Drilling:

1. SunSky panels can be cut or sawed by manual or power tools.  
A bench/table circular saw is best for straight long cuts. For better results cut a few panels together. Portable circular saws are suitable for on-site straight cuts. A jigsaw is used for cutting a limited length of irregular or curved lines.  
Hand tools such as handsaw, metal shears or hand-held cutting knives can be used for localized, limited work.
2. **Sawing** is done with hardwood saw blades with small teeth, or special blades for plastics, spinning at high speeds, with a slow feed rate. Panels should be clamped during sawing, to avoid vibrations. Avoid intersecting cuts. Drill a hole at intersection point, then cut the panel up to the hole.
3. **Drilling** is done using a power drill, with regular high-speed steel bits intended for metal, rotating at about 1,000 RPM. Better results with SunSky are achieved using bits ground to shallower tip angle than for metal. Clamp the drilled panel down to avoid vibrations or movement during operation.
4. Keep the cut area clean. Blow away saw dust and drilling swarf with compressed air.



Sawing the panels

Figure 5



Drilling the panels

Figure 6

## F. Safety Measures (during installation and afterwards):

1. Use ladders, crawling boards and other safety equipment required for safe installation. Use all safety measures required according to local safety regulations.
2. Don't step on installed panels between the purlins for fear of falling and other severe bodily harm.
3. Never leave SunSky panels unattended on the roof until all the required fasteners have been appropriately installed or the panels secured to the supporting structure.



**Warning! Do not step on the panels between the purlins!**

Figure 7

## G. Panel Orientation:

1. SunSky's exterior surface is UV resistant, indicated by labeled strips on protected side. Install the panel with the labeled side out. The protected side is up when panel edges are both pointing down.
2. Installation Direction: For multi-panel runs, begin installation of SunSky on the side away from wind and rain direction.

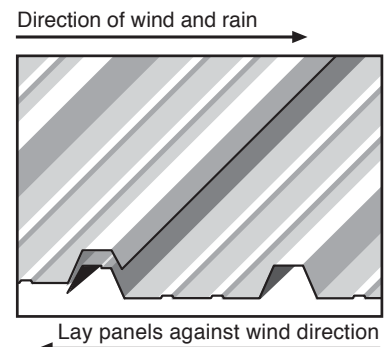


Figure 8

## H. General Indications for Installation:

### 1. Roof Pitch:

SunSky performs best when installed at pitch rates of 10 percent (1 in. to 10 in. slope or 5.7°) or more. When installed at a lower pitch, additional sealing should be applied to insure weather resistance. We recommend SunSky installation above 5% pitch rate.

### 2. Load Rating and Maximum Recommended Distance (Typical profile variations are considered the same):

The depicted distances refer to a single panel, single span installation on surrounding supportive compatible metal cladding.

**2.1. Load Rating Values:** Sunsky panels load rating will vary according to panels' arrangement and existing or designed spans, as mentioned above.

**2.2. Deflection vs. Load:** The graphs below depict test results of SunSky 9" panels used as skylights integrated in roofs & walls. Tests were performed according to "ICBO Evaluation Service Acceptance Criteria, AC 16 Plastic Skylights". SunSky panels tested showed no mechanical failure or damage at the end of any of the tests.

Graphs depict deflection under load, at varied spans, of a 3 span, single- & multi-panel run.

## Maximum Recommended Skyflight Support Distance under Specified Loads Single Panel, Single Span (SPSS) Installation

Panel Type	Thickness		Support Distance under Load (in.)						
			Uniform Wind/ Snow Load (psf)						
	in.	mm	10	15	20	25	30	40	50
SunSky 9"	1/32	0.8	34	30	26	22	18	NA*	NA*
	5/128	1.0	38	34	30	26	22	14	NA*
SunSky 12"	1/32	0.8	44	40	36	32	24	16	NA*
	5/128	1.0	47	43	39	35	29	20	14
	1/16	1.5	55	51	47	42	36	28	20
SunSky 3" Greca	1/32	0.8	39	35	31	27	23	15	NA*
SunSky 7.2"	5/128	0.8	57	53	50	47	43	36	28
	1/16	1.0	62	59	55	51	48	42	32
	1/32	1.5	65	63	59	55	52	47	39

\*NA: Not applicable

Table 2

**Notes:**

- a. Two-span and edge-span of multi-span (3 or more) installations can be increased by 10%.
- b. Mid-spans of multi-span installations can be increased by 15%.

## SunSky 7.2" Maximum Recommended Support Distance under Specified Loads Multi-Panel, Single Span (MPSS) Installation

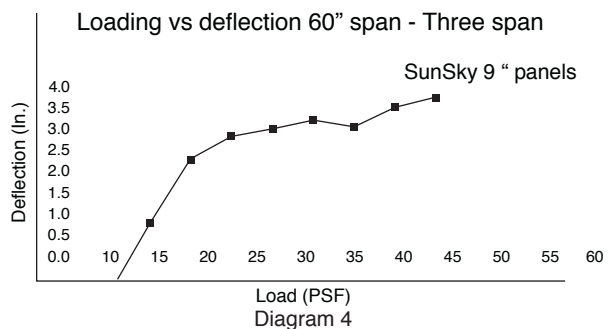
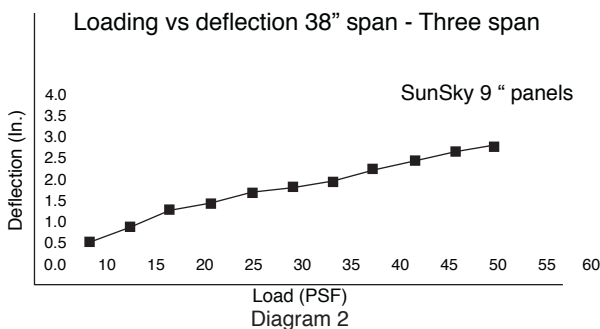
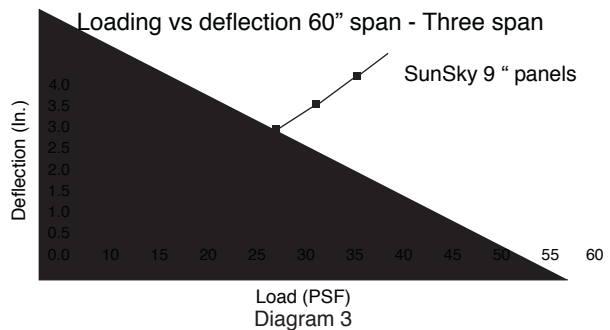
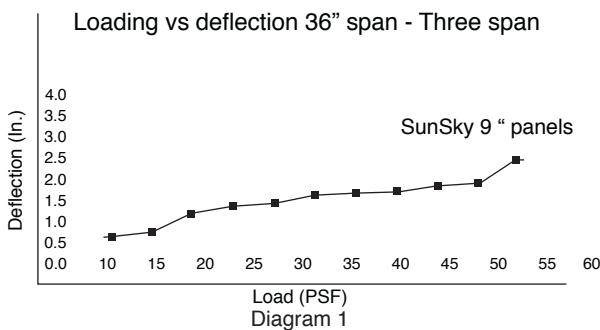
Thickness		Support Distance under Load (in.)					
		Uniform wind/snow Load (psf)					
in.	mm	10	20	30	40	50	60
5/128	1.0	66	58	50	42	37	31
3/64	1.2	71	63	55	48	41	35
1/16	1.5	74	67	60	54	45	39

Table 3

**Notes:**

- 1. In-between loads/support distances: To be arrived at by interpolation.  
Example: 36" span-approx. 45 psf load with 5/128" thick panel.  
48" span-approx. 35 psf load with 3/64" thick panel  
60" span-approx. 25 psf load with 1/16" thick panel etc. ...
- 2. Depicted Distance: Mid-field spans.
- 3. Sidings: 10% larger spans than depicted.  
Edge spans: 85% of pertinent mid-span.  
Single-span: 80% of pertinent mid-span.
- 4. Max. Deflection: 1/20 (5%) of pertinent span.  
Accepted rate for virtually all plastic panels.

### Uniform load diagram Multi-panel runs for roofing and siding



### 3. Uplift Testing:

SunSky corrugated polycarbonate panels meet Uplift Test Criteria specified in UL 580 Test for Uplift Resistance of Roof Assemblies (UL Class 90).

#### Test Description

**Roof Covering:** Corrugated polycarbonate roof panels with 9 inch spaced corrugations. The tested material comes in 0.032" thick x 38" width and 12 feet long.

**Fastener:** #12 - 14 x 1<sup>1</sup>/<sub>4</sub>" Type 2 Structural Drilling Fastener, carbon steel, zinc plate with <sup>3</sup>/<sub>4</sub>" O. D. heavy EPDM/galvanized washer.

#### Uplift Test Results

A buckled hip was visible during the test. The fasteners were in place and no cracks or breaks were found in the SunSky panels. The test assembly withstood all phase of test for Class 90. The roof assembly described in this report met the uplift test criteria specified in UL 580 - Test for Uplift Resistance of Roof Assemblies.

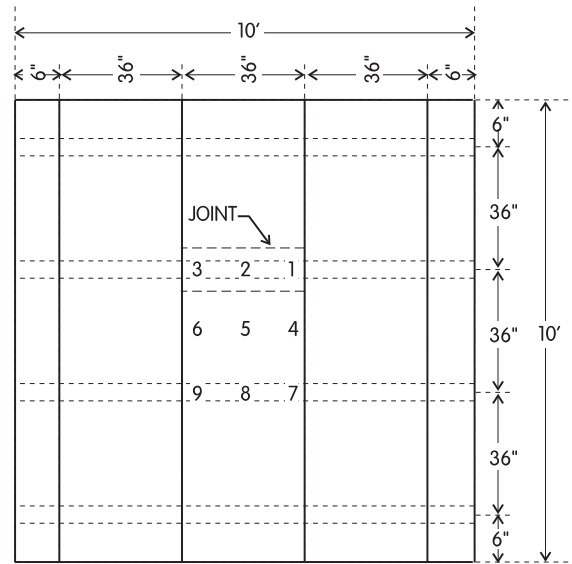


Figure 9

#### Note:

The buckled hip returned to the original shape after testing with no panel damage or permanent deformation.

### 4. Purlin & Girt Spacing:

(according to ICBO Evaluation Acceptance criteria, p. 3). Purlin and girt spacing are usually dictated by overall design and engineering calculations along which the whole structure is constructed. SunSky panels are installed at the same purlin/girt spacing as the rest of the metal panels in the structure.

Verify that the installed SunSky panels will remain within the uniform load-supporting limits of deflections as observed by the Evaluation Acceptance tests (see the "Uniform Load" diagrams and "Uplift" paragraphs).

In case purlin/girt spacing of the metal cladded structure surpass the values depicted in the tables by a significant margin (especially in multi-panel runs), a secondary support system, based on data in the above mentioned tables, should be prepared for the SunSky skylight or sidelight. When designed spacing is marginally larger, on site environmental conditions should be considered and acted upon.



## I. Installation Comments (Roofing & Siding):

### 1. Single Panel Run Installation:

The length (long side) outermost crests of a SunSky panel should lap over matching adjacent crests of metal panels on both sides.

### 2. Multi-Panel Run Installation:

The middle SunSky panels should be installed with the regular under/over length overlap (the short crest edge on top of a longer one). The outermost SunSky panels on both length sides will lap over the adjacent matching metal panels, as in a single panel run, unless designed otherwise.

### Attention!

Whenever the extreme side-laps of a SkyLite or SideLite side-laps are installed on top of the adjoining metal panels, the overlapping metal panel(s) above the opening should also be installed the same.

### 3. Framed Independent SideLite Installation:

An installation method for sidelights, requiring framing for the apertures in the siding. Frame details enable installation of any SunSky profile, independent of the surrounding wall cladding.

Aluminum profiles framing is very suitable. Relatively inexpensive, comes in huge variety (easy to produce to special order, at a reasonable cost, if required) and quite easy to work on.

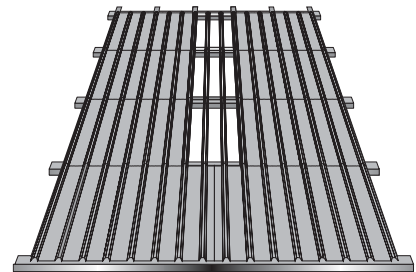
Fabricated zinc plated, painted or stainless sheet- steel are possible options, moderately priced and easy to fabricate. Wood framing is also possible, especially for small scale and DIY jobs, requiring simple everyday tools, and (when simply designed) easy to work on.

### 4. Side-lap Support:

At side-laps where the SunSky edge corrugation have to be installed under the corrugation of the adjoining metal panel, or in SunSky on SunSky side-laps (multi-panel runs) length support profiles, of metal or wood, are recommended. Such length supports ensures better side seal and rigid installation. (Fig. 20, 38)

Support details should suit the Sunsky profile used.

## SkyLites SunSky in roofing:

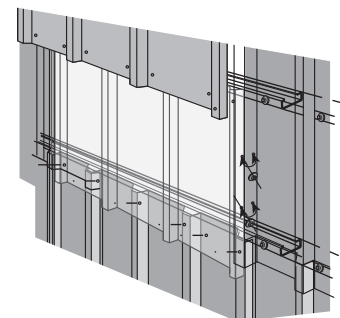


Single panel run  
 Figure 10

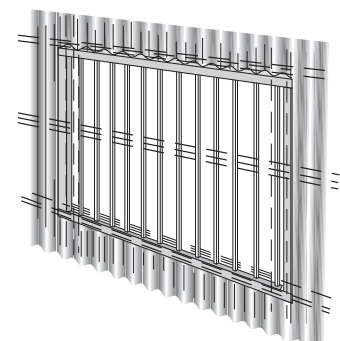


Multi panel run  
 Figure 11

## SideLites SunSky in sidings:



Single-span, single-panel  
 SideLite depiction  
 Figure 12



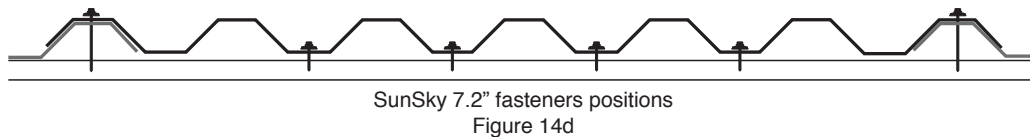
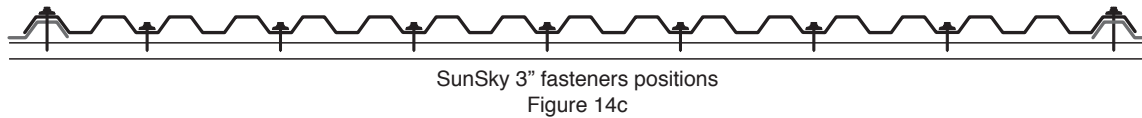
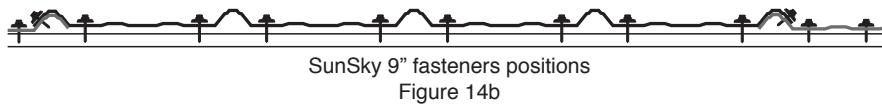
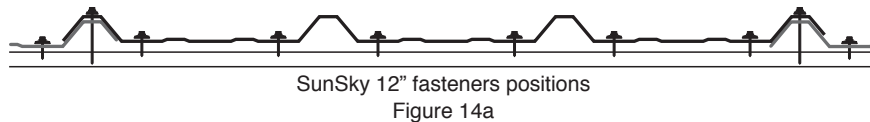
Multi-span, multi-panel  
 framed SideLite  
 Figure 13

## J. Fastening & Sealing:

### 1. Following recommendations:

Use of recommended fasteners and washers, along with careful execution according to the installation instructions is essential for full performance values of installed SunSky.

### 2. Graphic depiction of SunSky Fasteners Positioning at Side-Laps, Supports & End-Laps:



### 3. Recommended washers & fasteners:

#### Fasteners, stitching fasteners, washer/gaskets:

SideLite Type	Crest Installation (at sidelaps)		Valley Installation		Stitching
	Steel	Wood	Steel	Wood	
SunSky 9"	Not used		SDS# 12-14x1"	STS# 12-14x1 1/2"	STS# 12-14 x 3/4"
Washer/Gasket	Not used		CWG		BWG (on side)
SunSky 12"	SDS# 12-14x2 1/2"	TS# 12-14 x 3"	SDS# 12-14x1"	TS# 12-14x1 1/2"	STS# 12-14 x 3/4"
Washer/Gasket	BWG		CWG		BWG
SunSky Greca 3"	SDS# 12-14x1 1/2"	TS# 12-14 x 2"	SDS# 12-14x1"	TS# 12-14x1 1/2"	STS# 12-14 x 3/4"
Washer/Gasket	BWG		BWG		BWG
SunSky 7.2"	SDS# 12-14x3"	TS# 12-14 x 3 1/2"	SDS# 12-14x1"	TS# 12-14x1 1/2"	STS# 12-14 x 3/4"
Washer/Gasket	CWG		CWG		BWG

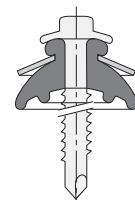
Table 4

#### Notes:

- a. **SDS** - Self-Drilling Screw (for installation on steel structures),  
**TS** - Milled-point Timber- Screw (for installation on wooden structures) ,  
**STS** - Gimlet point Self-Tapping Screw (stitching sheet-metal panels & SunSky profiles).
- b. **BWG** - Suntuf Special 3/4" Bonded Washer/Gasket.  
**CWG** - Suntuf Special 1" Combined Washer/Gasket



3/4" (19 mm) Washer/gasket  
BWG  
Figure 15



1" (25 mm) Washer/gasket  
CWG  
Figure 16

#### 4. Suntuf Washer/ Gasket Combinations:

- a. **Small** - 3/4" Special Bonded Washer/ Gasket (BWG)- conical metal washer (zinc-plated/ aluminum/ stainless steel), with bonded shaped EPDM gasket - see Figure 15)
- b. **Large** - 1" Special Combined Washer/ Gasket (CWG)- conical metal washer (zinc-plated/ aluminum/ stainless steel), with attached dome-shaped, contoured EPDM gasket - see Figure 16)

#### Important Note!

Suntuf Washer/ Gaskets were chosen after careful checks and tests. Shaped gaskets seal the fasteners' holes & heads well without excessive pressure on the SunSky panel. Limited thermal expansion is possible and compatibility with polycarbonate assured.

**Regular Washer/ Gaskets for metal panels apply excessive pressure, are inadequate for SunSky sealing, and cause undue internal stresses in the panel. The stresses result in crazing, fractures, and eventual failure.**

#### 5. Installation & Fastening Tips:

- a. Drive fasteners perpendicular to SunSky face. Tighten moderately, by hand or with an adjustable torque power screwdriver. Avoid distortion of washer/ gasket and panel. (See fastener positioning details - Figure 17)

**Never use an impact wrench/ driver for fastening SunSky.**

- b. We recommend starting installation from the bottom up, on one side, and work to the left or right accordingly.

**Never start working from both ends to the middle.**

Always lap the top panel over the lower one.

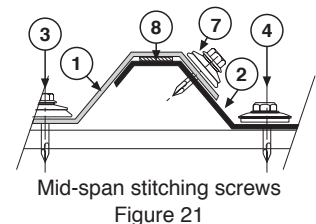
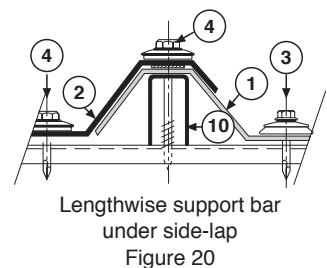
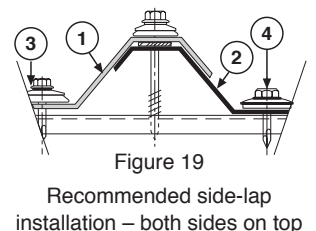
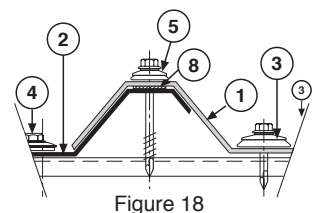
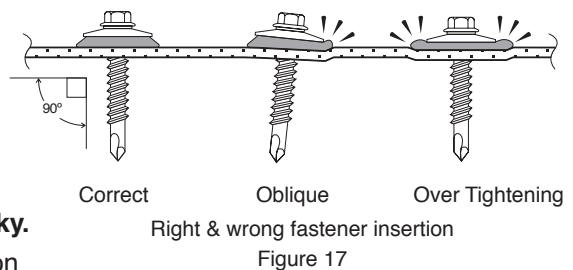
- c. Keep panel straight, flush and taut during installation.
- d. Side-Lap Support: At a side-lap of metal on SunSky or two SunSky panels (multi-panel installation) a lengthwise wood or steel support bar may be required for satisfactory stitching.

#### e. Fastening Details (Schematic):

- ① SunSky panel
- ② Adjoining metal panel
- ③ Valley fastener, with CWG
- ④ Metal crest/ valley fastener
- ⑤ Side-lap fastener & BWG
- ⑦ Side-lap stitching fastener & BWG Figure 6a
- ⑧ Butyl-rubber sealing strip
- ⑩ Optional side-lap support bar

#### f. Fasteners Positioning Comments:

- 1) Generally valley fasteners should be install at the top & bottom edges, and at end-laps of SunSky panels, as shown in Figures 14a-14d .
- 2) In multi-panel runs - fasteners number could be reduced at mid-purlins, unless conditions demand otherwise. The remaining fasteners should be evenly positioned adjoining main corrugations of the specific panel.
- 3) Stitching screws should be distributed 12-16" apart, at least 2-3 screws at each side-lap.



## 6. Sealing SunSky:

### a. XPE (expanded cross-linked polyethylene) Self-Adhesive Sealing Strips:

Resilient, closed cells, self adhesive foamed-polyethylene, in long flat strips, to be applied at sides & end-laps, on top of the overlapped area.

Cross-section dimensions may vary according to specific requirements.

A typical one is 3/4" (20.0 mm) width, 3/16" (5.0 mm) thickness. comes with pressure sensitive adhesive on one side, protected by silicone paper.

### b. Butyl-Rubber Sealing Strips:

b. Elastomeric sealing strips, 2/32"-1/8" thick, 3/8"-1/2" wide, To be applied at side & end-laps, on top of the overlapped area.

### c. Install as follows: (See Figures 18-21, 23-25 page 13)

- Remove bottom protective paper strip progressively, as installation advances. Apply carefully by hand.
- **Single seal end-lap:** Apply along fasteners' centerline at the end-lap, following the profile shape.
- **Double seal end-lap:** Apply above and below fasteners' centerline at end-lap, following the profile shape.
- **Single seal side-lap:** Apply on top of overlapped side corrugations centerline-metal or SunSky.
- **With butyl-rubber strips only:** Remove top protective paper strip before laying the overlapping panel.
- Lay the edge of lapping panel and apply moderate hand pressure on the top panel along the side corrugation, to assure good fitting and/or even seal/bond.

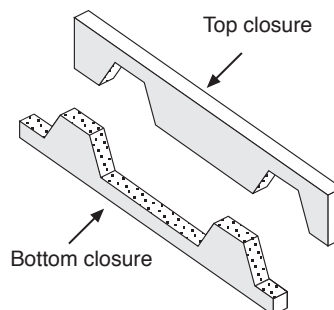
### d. Top & Bottom Contoured End Closures:

Top or bottom matching closure strips close the clearance above or below the panel and its corrugations. Install as follows:

- **Installation practice:** Place the closure strip at the top or bottom edge fasteners' centerline, and insert the fasteners through said strip so it will be held firmly in place. A few dabs of silicone could hold the strip temporarily in place until the top panel is laid and screws are inserted. (Figures 26a,b, 27a,b, 30)
- **Location A:** Where SunSky runs reach the top or bottom of roof or wall edges, or at the roof ridge, the space left between the panel's profile and the purlin- or girt- should be closed and sealed with a contoured foam- polyethylene (XPE) closure strip matching the panel profile.
- **Location B:** Where SunSky runs reach a top trim or a flat ridge-cap a top closure strip should be used at the top edge above the panel.
- Alternative option: Contoured end- closure may also be made of wood, when it's worthwhile.

### e. Silicone Sealants:

- 1) We strongly recommend the use of Suntuf SunSeal brand approved silicone sealant, and other tested and approved sealing, bonding and adhesives materials that may be required.
- 2) Other silicone sealants or other sealing, bonding or adhesives materials should be referred to Suntuf Inc. or its distributor for evaluation and approval before use.



Top & bottom end closures (SunSky 12")  
Figure 22a



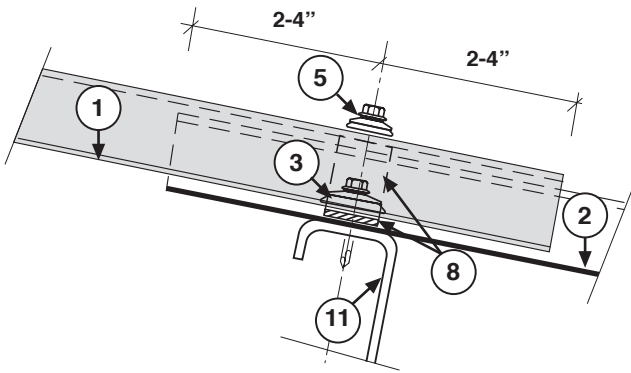
Silicone sealant  
Figure 22b

**Unapproved sealants, adhesives or bonding materials may be found ineffectual and incompatible, can chemically attack the panels, originate failure and revoke any and all guaranties.**

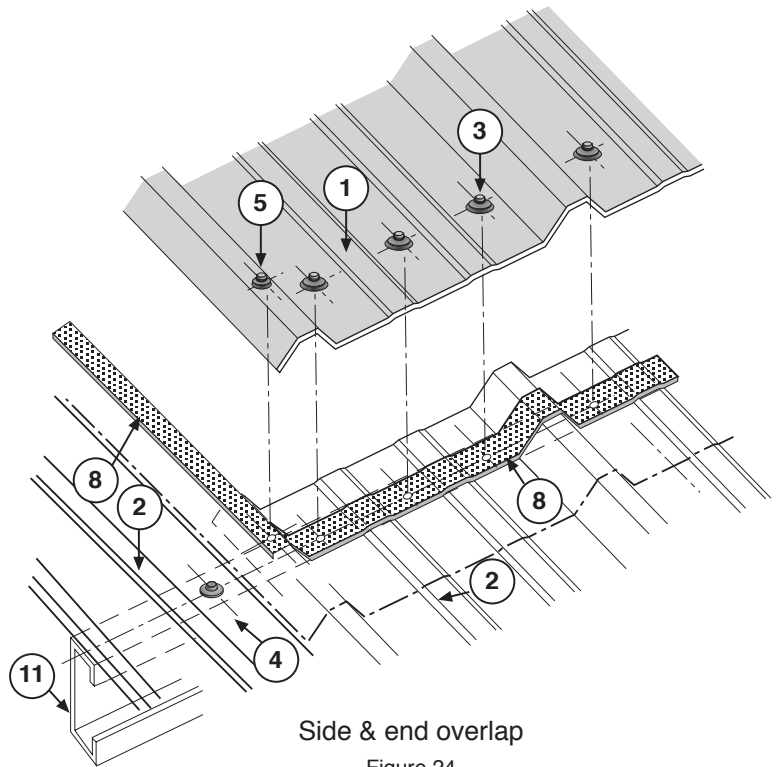
### K. End/Weather Lap Installation:

1. End/weather lap (or width overlap- short side) of a SunSky panel on another consecutive SunSky or metal R-panel, should always be done over a supporting purlin. Each of the panels involved should overhang the purlin centerline by about 3 in. (2 in. min. and 4 in. max.), totaling an average overlap of 6 in.

2. Fastener and sealing strip location:



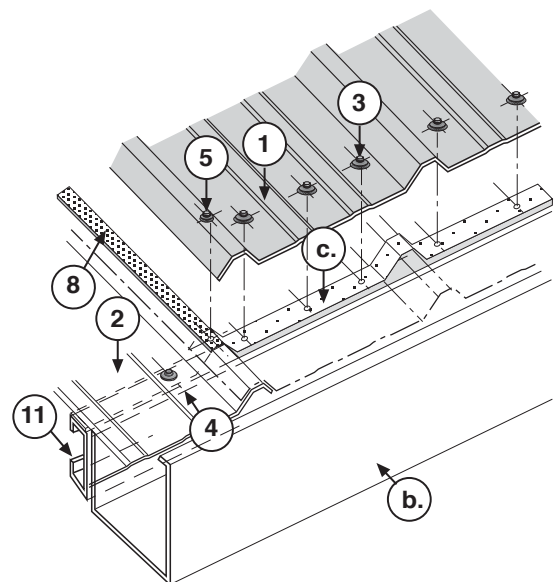
End-lap detail  
Figure 23



Side & end overlap  
Figure 24

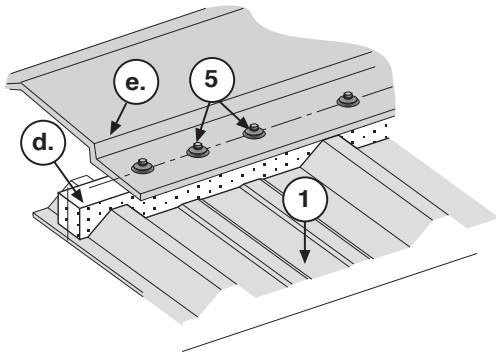
#### Legend

- (b.) Optional collecting gutter
- (c.) XPE (foamed polyethylene) shaped bottom end-closure
- (1) 12" SunSky panel
- (2) Metal R-panel
- (3) SunSky valley SDS fastener, with Suntuf 1" special washer & gasket
- (4) Typical sheet-metal crest or valley fastener with 3/4" conical washer & flat gasket
- (5) SunSky crest (side-lap) SDS fastener with Suntuf 3/4" special washer & gasket
- (8) Cross-linked polyethylene glazing tape installed along side & end lap corrugations
- (11) Supporting purlin

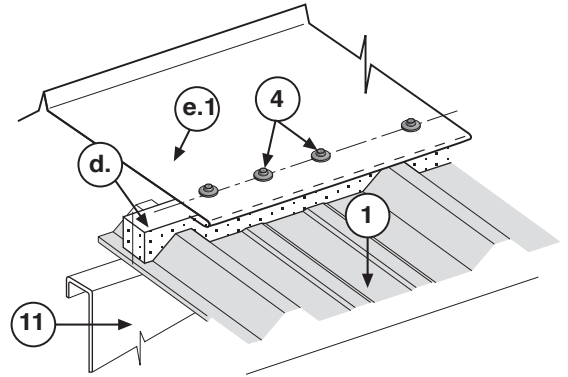


Bottom edge SunSky installation  
with profiled closure strip

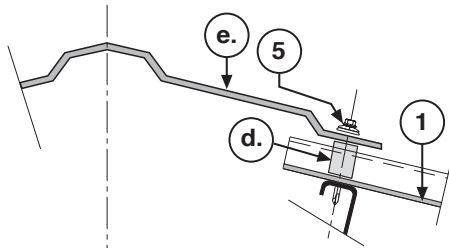
Figure 25



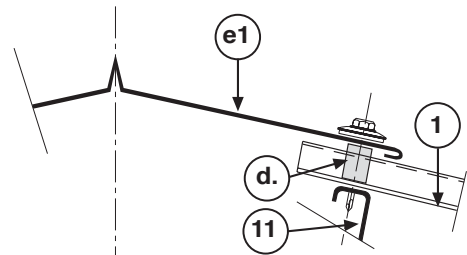
SunSky ridge cap fastening  
Figure 26a



Sheet-metal ridge cap fastening  
Figure 27a



SunSky ridge cap fastening  
& top partial section  
Figure 26b



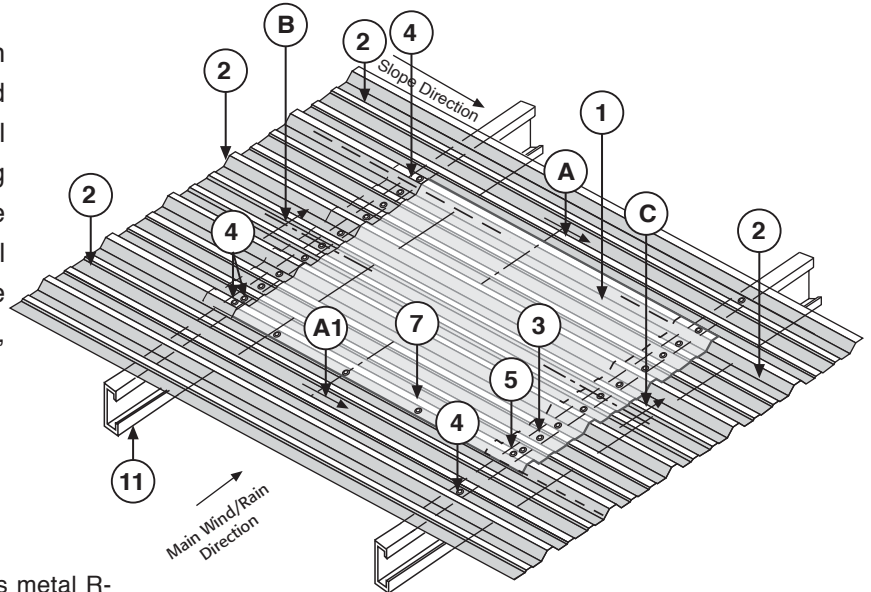
Sheet-metal ridge cap fastening  
& top partial section  
Figure 27b

Legend

- (c.) XPE (foamed polyethylene) shaped bottom end-closure
- (d.) XPE shaped top end-closure
- (e.) SunSky universal ridge cap
- (e.1.) Sheet-metal universal ridge cap
  
- (1) 12" SunSky panel
- (4) Typical sheet-metal crest or valley fastener with  $\frac{3}{4}$ " conical washer & flat gasket
- (5) SunSky crest (side-lap) SDS fastener with Suntuf  $\frac{3}{4}$ " special washer & gasket
- (11) Supporting purlin

## L. Options for Installation:

1. A single width, single span installation (on 2 edge support purlins), integrated and surrounded by matching metal panels, overlapped on top, overlapping and supported on both sides and at the bottom. This dictates that the top metal panel is also installed with its edge corrugations overlapping at both sides, up to the roof edge or ridge.



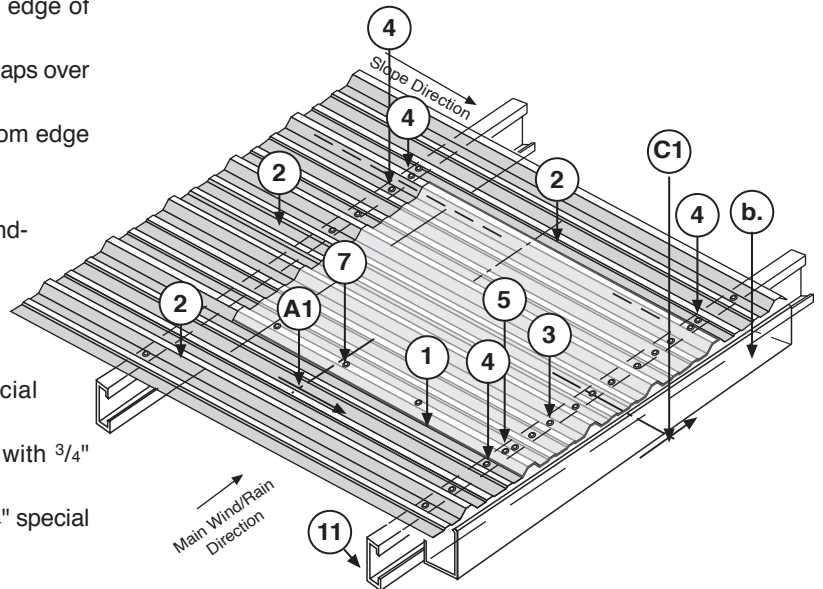
Typical, single panel, single span mid-field detail

Figure 28

### Legend

- (A) Right side-lap- 12" SunSky panel overlaps metal R-panel
- (A1) Left side-lap- 12" SunSky panel overlaps metal R-panel
- (B) Top end-lap- top metal R-panel laps over top edge of SunSky panel
- (C) Bottom end-lap- bottom edge of SunSky panel laps over top edge of metal R-panel
- (C1) Bottom edge detail- SunSky panel at the bottom edge of a roof, with or without a gutter
- (b.) Optional collecting gutter
- (c.) XPE (foamed polyethylene) shaped bottom end-closure

- (1) 12" SunSky panel
- (2) metal R-panel
- (3) SunSky valley fastener, with Suntuf 1" special washer gasket
- (4) Typical sheet-metal crest or valley fastener with 3/4" washer & Gasket
- (5) SunSky crest (side-lap) fastener with Suntuf 3/4" special washer & gasket
- (7) SunSky side-lap stitching fastener
- (11) Supporting purlin
- (12) Main supporting truss / beam



Typical bottom end SunSky detail (with or without gutter)

Figure 29

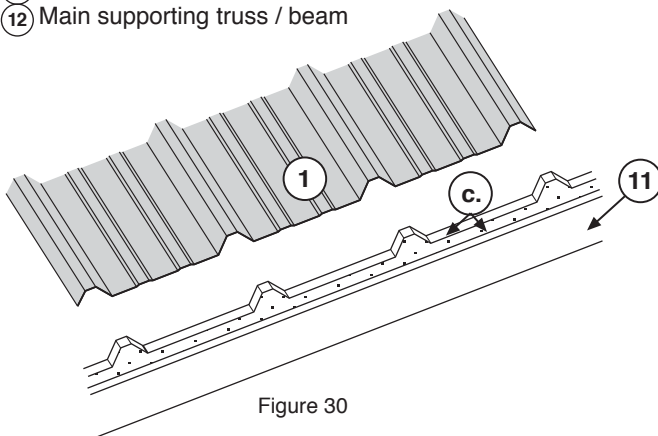


Figure 30

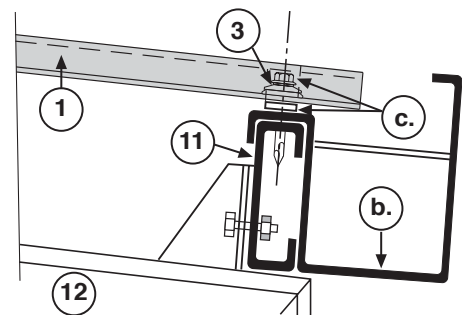


Figure 31

2. A single width, multi-span installation, on a few support purlins, using one single long panel or a few consecutive ones, overlapping each other (See Single-Panel Runs, page 9, fig. 10).

This option can be implemented by two possible alternatives:

- Installed mid-field, surrounded by matching metal panels, overlapped on top, overlapping both sides & bottom.
- Installed from top to bottom or from ridge to bottom (one or two way pitched roof). This alternative enables the use of SunSky panels on metal roofs which profiles don't exactly match.

Both alternatives allow SunSky panels installation on top of outermost length corrugations of metal panels on both sides, for tougher, stiffer installation with better sealing, enabling easy installation of the SunSky skylight panels after the metal roofing is already in place (proper clearance has to be provided for).

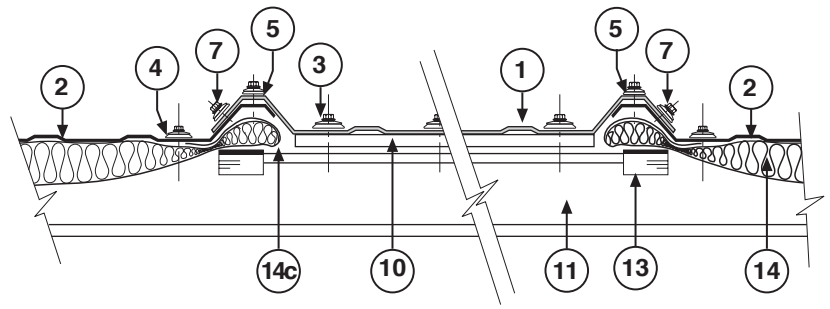
3. A multi-width, multi-span installation (See Multi-Panel Runs, page 9, fig. 11).

This can be implemented the same way as the two alternatives mentioned above, either as an integrated part of a roof plane, or as an independent roof, its edges overlapping the metal panels on its two sides.

4. When installing SunSky on glass fiber mats insulated steel roof, be sure to use a suitable spacer along the purlins and avoid any contact between the vinyl finish of the mats and the SunSky panels (fig 32, 33).

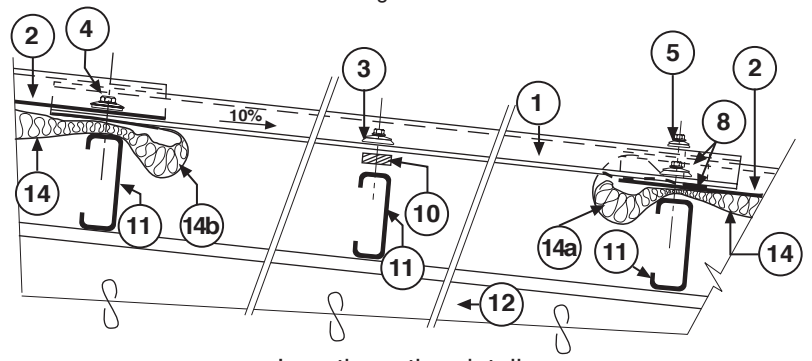
Legend

- ① 12" SunSky single / single-run / multi-run skylight panel, overlapping lengthwise on both sides
- ② Typical metal R- panel installed on all sides
- ③ SunSky valley #12 or 1/4" x 1" SDS fastener, with Suntuf 1" special washer & attached EPDM dome gasket
- ④ Typical sheet-metal crest or valley fastener with 3/4" conical washer & bonded flat EPDM gasket
- ⑤ SunSky crest (side-lap) #12 or 1/4" x 2 1/2" SDS fastener with Suntuf 3/4" special washer & EPDM shaped gasket
- ⑦ Typical SunSky / metal overlap side stitching #12 or 1/4" x 3/4" SDS fastener with Suntuf 3/4" special washer & gasket
- ⑧ Butyl- rubber sealing strip installed along width & length end corrugations at all overlap. Height equalizing shim- wood or rigid plastic
- ⑩ bar of suitable thickness compensating for the thickness of the insulation mat at the purlins
- ⑪ Main supporting structure
- ⑫ Galvanized sheet- metal strip For insulation mat support
- ⑬



Width cross-section detail

Figure 32



Length section detail

Figure 33

- ⑭ Glassfiber or rockwool insulation mat underneath the steel roofing with reinforced aluminum foil or vinyl film bottom finish, supported by the metal strips
- ⑭a End of insulation mat at the lower edge of the skylight with the mat edge tucked over to create a nice edge finish
- ⑭b Same as ⑭a but at the upper edge of the skylight, with a separate layer between the SunSky sheet bottom edge and the tucked over vinyl finish, to prevent chemical damage



## 5. SunSky SideLite:

Installing SunSky in sidelights on exterior walls.

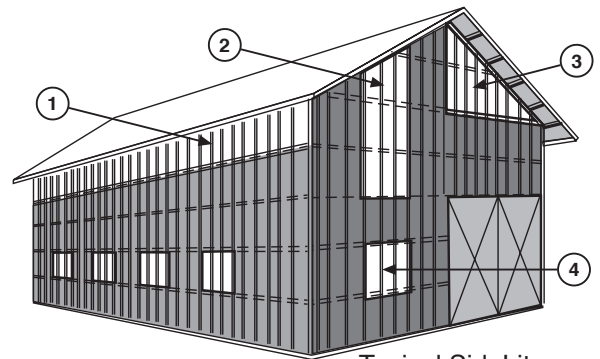
### a. Fastening, Sealing, End- Closures-

SideLite practice is similar to that of SunSky roof installation as appear in former pages.

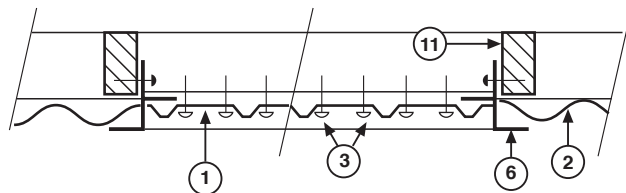
Certain installation possibilities are distinctive only to siding installation, like the framed SideLite.

### b. SideLite options:

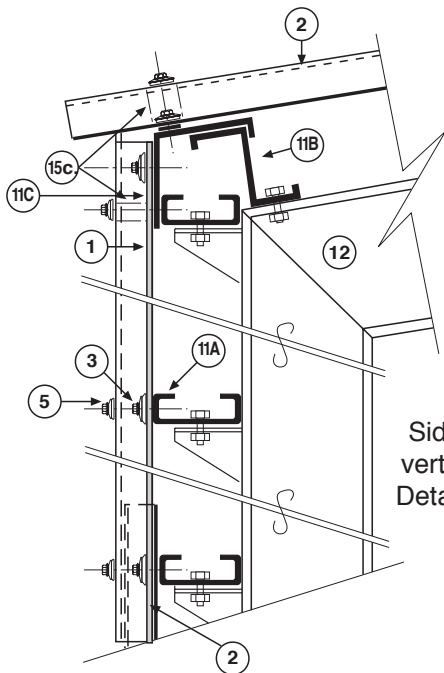
- 1) Multi-panel, single-span.
- 2) single-panel, multi-span.
- 3) Multi-panel, multi-span.
- 4) single-panel, single-span. (Figures 12)
- 5) Framed SideLite- independent on surrounding cladding type (Figures 13, 35, 36)



Typical SideLite  
Figure 34



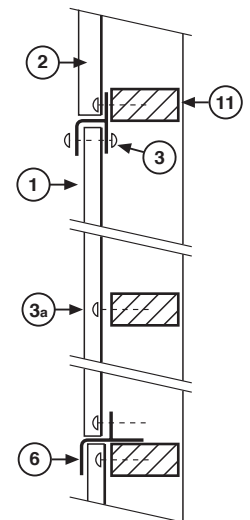
Framed SideLite  
horizontal section  
Figure 35



Sidelight fastening -  
vertical cross-section  
Detail: Multi-panel run  
Option  
Figure 37

### Framed SideLite Details

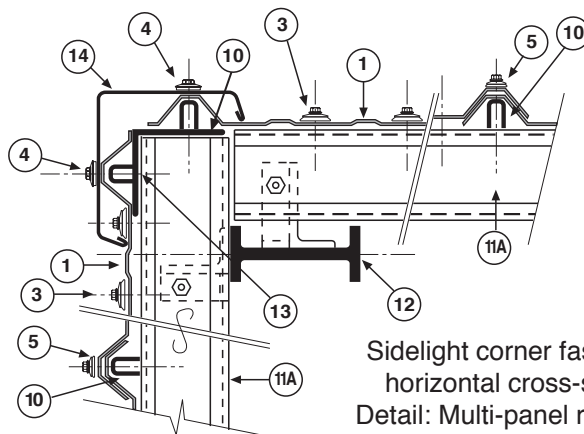
- ① SideLite panel.
- ② Surrounding cladding
- ③ Top & bottom valley fasteners
- ③a Mid-field fasteners
- ⑥ SideLite Framing
- ⑪ Wood/steel main frame



Framed SideLite  
vertical section  
Figure 36

### Integrated SideLite details

- ① 12" SideLite panel
- ② Metal panel
- ③ SunSky valley fastener
- a Sheet-metal fastener
- ⑤ SunSky crest fastener
- ⑩ SideLite metal or wood Length support
- ⑪A Wall girt
- ⑪B Roof-edge Z purlin
- ⑪C Eave-strut
- ⑫ Main supporting frame
- ⑬ Structural corner profile
- ⑭ Sheet- metal corner trim
- ⑮ XPE bottom end- closure



Sidelight corner fastening -  
horizontal cross-section  
Detail: Multi-panel run option  
Figure 38

## **M. Important Installation Comments:**

Concise Tips & Recommendations List.

- 1. Avoid overtightening the fasteners.** Allow gaskets to squeeze slightly until full contact with panel. Overtightening induces undue internal stresses, leading to premature failure.  
**Regular Washer/ Gaskets for metal panels apply excessive pressure, are inadequate for SunSky sealing, and cause undue internal stresses in the panel. The stresses result in crazing, fractures, and eventual failure.**
- 2. Never use** soft PVC (vinyl) washer/gaskets. Soft PVC is totally incompatible to polycarbonate and will harm the panel.
- 3. Never apply** paints, shading compounds, paint thinners or any material that may chemically attack SunSky, without first verifying compatibility to the panel by contacting Suntuf Inc. or its distributor.
- 4. Always work safely.** Follow safety recommendations in the Installation Instructions.
- 5. Maximum span:** Net spans should not exceed 5 ft. to avoid thermal expansion buckling. Follow recommendations in the Installation Instructions.
- 6. Fastening:** Always use recommended fasteners for securing Sunsky. Never install SunSky by nailing.
- 7. Isolating SunSky from harm:** When placing SunSky on asphalt shingles, soft PVC or vinyl, or other incompatible materials, use an isolating barrier -metal or wooden strips, EPDM rubber patch etc., between the panel and a doubtful material.
- 8. Extra Fastening:** On length runs, where SunSky overlaps metal panels on both sides, we recommend side stitching fasteners beside the main fasteners connecting the SunSky to the frame. These should be spaced along the side-laps about 12-16 in. apart.
- 9. End-Lap Support:** SunSky/metal or SunSky/SunSky panel end-lap should always be fully supported, to avoid deflection at that area. This also applies to ridge-cap/SunSky end-lap.
- 10. Support Profiles:** At SunSky/SunSky or metal/SunSky side-lap (length overlap), metal or wood length support bars can be added under the side-lap to minimize deflection, assisting in sealing & stitching. The length support bars should be sized to suit the corrugations.
- 11. Silicone sealant:** use **Suntuf SunSeal** brand approved silicone sealant. Refer to Suntuf Inc. or its distributor for other approved sealing or bonding materials should they be required. **Unapproved sealing or bonding material may be incompatible, damage the panels, cause failure and void warranty.**
- 12. Butyl-Rubber Seals:** Side-laps and End-laps of any SunSky profile should be treated with butyl-rubber sealing strips, placed between the overlapping panels at all edges. In shallow pitch roofs (less than 5 percent) double (parallel) sealing strips are recommended at end-laps.
- 13. Shaped End Closures:** profiled foam polyethylene (XPE) closure strip are Used to seal the space between the upper or lower SunSky profile to edge purlins or ridge caps. Matching XPE top & bottom strips are available for each major SunSky profile. The strip is held in place by the screws fixing the panel to the purlin. (see figures 26a,b, 27a,b, 30).

- 14. Cleaning:** Most normal dirt & dust accumulation is washed off by the periodical rains. Regular hosing of the panels with clean lukewarm water is sufficient in dry areas.  
In polluted, oily environment mild household detergent may be used, assisted by a soft rag or brush. Never use aggressive or abrasive cleaning agents or glass window cleaners. They may scratch or chemically attack the panel. Large areas-could be washed by high- pressure water-jet, optionally in conjunction with diluted detergent. Dry with soft cotton rags to avoid spotting.
- 15. Repair:** Minor damages to the panel may be repaired. Small punctures can be stopped by dabs of approved silicone sealant. Larger tears may be patched by pieces of matching panel, bonded & sealed on top of the tear with compatible structural silicone.
- 16. Study and Preparation:** Prior to actual installation study the SunSky Installation Guide carefully, making sure all the instructions are understood and all required materials, accessories and tools are available.
- 17. Information:** Please contact Suntuf Inc. or its distributor regarding any applications, requests and inquiries you may have before starting installation.
- 18. Accessories Information & Supply:**  
Suntuf Inc. and its distributors will assist, advise and supply, upon request, various additional accessories that may be required for appropriate installation, such as butyl-rubber sealing tape, special fasteners and washer/gaskets, etc.



**10-Year Limited Light-Transmission Warranty\***

It is warranted that for a period of 10 years, SunSky polycarbonate panels shall not lose more than 10% of their light transmitting capability, as a direct and exclusive result of the impact of solar radiation (as measured pursuant to the procedures specified in ASTM D-1003-77).

**5-Year Limited Hail-Damage Warranty\***

It is warranted that for a period of 5 years, SunSky polycarbonate panels shall not break as a direct and exclusive result of the impact of hail measuring up to one inch diameter in size, and attaining up to 65 feet/sec. in velocity.

\* This document contains statements of general company policy concerning customer satisfaction. There are no warranties which extend beyond that which are specifically set forth in the two limited warranties above.

**Palram** reserves the right to change product specifications and/or information contained in this brochure.  
Printed 10.03

Inasmuch as Palram has no control over the use to which others may put the product, it does not guarantee that the same results as those described herein will be obtained. Each user of the product should make his own tests to determine the product's suitability for his own particular use including the suitability of environmental conditions for the product. Statements concerning possible or suggested uses of the products described herein are not to be construed as constituting a license under any Palram patent covering such use or as recommendations for use of such products in the infringement of any patent. Palram or its distributors cannot be held responsible for any losses incurred through incorrect installation of the product. In accordance with our company policy of continual product development you are advised to check with your local Palram supplier to ensure that you have obtained the most up to date information.

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