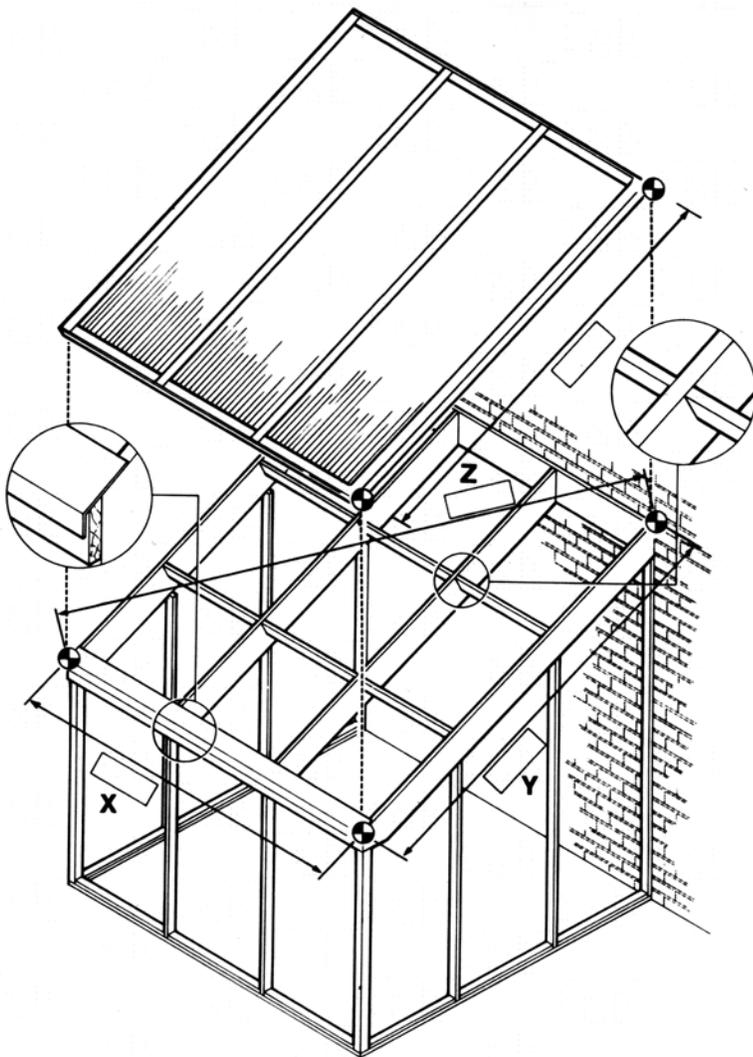


AGS ALUMINUM glazing system

How to build with ACRYLITE®
High Impact Acrylic Multi-Skin Sheet



Introduction

Congratulations. You are working with ACRYLITE® acrylic sheet, you've made the right choice.

ACRYLITE® High Impact Acrylic Multi-Skin Sheet is a unique product, with a ribbed configuration.

The ribbed configuration provides an insulation value equal to or better than 5/8" double pane glass. We recommend out Cool Blue HEATSTOP, Solar Bronze or one of our whites for southerly exposures where heat and light reductions are desirable

More important to you, ACRYLITE® sheet is a whole lot easier to work with and more cost effective than glass.

ACRYLITE® High Impact Acrylic No Drip acrylic sheets are treated with a condensate control coating to reduce condensation dripping. The treated side can be installed facing out for self-cleaning benefits if humidity control is not a design criteria inside the enclosed area.

Acrylite sheets are 60% lighter and far more resilient than glass. These 47 1/4" wide panels are available in 8', 10', 12', 16' and 20' lengths. This combination of reduced weight and available sizes means you can use much larger units than you can with glass.

These are just a few of the reasons why more and more professionals like you are turning to ACRYLITE® to build ultimate places in the sun for people like your customers.

ACRYLITE® acrylic sheet and the AGS aluminum glazing system are made for each other.

The AGS system has been specifically designed for 16 mm and 32 mm thick ACRYLITE® sheet.

ACRYLITE® sheet expands and contracts, so it requires a glazing system which allows movement, but maintains a water-tight seal.

To make sure the AGS system does just that, all the resources of our technical experts went into perfecting it.

If your superstructure meets the requirements, and you carefully follow the instructions in this manual, you will have a quality installation creating the ultimate place in the sun. One which will give great pleasure in the summer. And hold firm under snow and wind loads in the winter.

The AGS system and this manual are made for each other.

There's only one right way to build with the AGS system. That's the way described in this manual. So before you pick up a tool, read it thoroughly starting here and going right through in sequence to page 14.

This manual will tell you what you need to know; from reminding you to check local building codes before you begin, to providing detailed step-by-step instructions.

The Do and Don't section is particularly important, so read it with special care. Use only the tools, sealants and fasteners recommended, and resist the temptation of resorting to short cuts.

The Instructions part of the manual is divided into complementary sections such as Cutting Instructions, Fabrication and Assembly.

Naturally, it is in our best interest as well as yours that the job is done right.

Tools and hardware required

- Circular saw with blades suitable for cutting aluminum and plastics such as a Triple Chip Blade (TCB) or an Alternating Bevel Tooth (ABT) blade with a minimum of 40 teeth. The blades shall be carbide tipped with a rake angle of 0-10.
- Scratch Awl for marking on aluminum
- Tape measure
- Square
- Felt tip marker or grease pencil
- No. 1 Robertson screwdriver
- Flat screwdriver
- 7/16" socket and/or ratchet wrench
- Electric drill with 1/8", 3/16", 1/4" and 5/32" diameter drill bits
- White rubber mallet
- Exacto or similar utility knife
- Fasteners for mounting AGS frame, i.e. onto wood superstructure, #12 x 2 1/2" flathead screws
- Silicone sealant - Tremco's Proglaze or Spectrum I, GE's Silpruf, Dow's 795
- White vinegar
- Mild liquid soap
- Cleaning Rags
- Aluminum foil tape

Do and Don't

DO	DON'T
DO use extreme caution and follow proper safety procedures.	DON'T walk or stand directly on the ACRYLITE® sheets.
DO follow the instructions in this manual.	DON'T start without reading this manual
DO check local building regulations before you begin.	DON'T hesitate to call us if you run into problems with building code regulations.
DO store ACRYLITE® sheet indoors if possible. If not, protect them from direct sunlight with a white opaque covering.	DON'T store in direct sunlight. This can cause the polyethylene masking to stick to the panels.
DO keep the closure tape in position at each end of the ACRYLITE® sheet, until ready to install.	DON'T remove tape prior to installation. Their purpose is to seal out dust and dirt.
DO seal the top edge (full width) of all panels with aluminum foil tape.	DON'T leave the top end open.
DO leave the bottom ends open to allow condensate drainage.	DON'T seal or block bottom ends of sheets.
DO make sure that your superstructure is square and true.	DON'T leave even the slightest errors uncorrected. They will come back to haunt you later.
DO ensure that your wood superstructure is properly kiln-dried.	DON'T use 'green' wood that will warp out of shape.
DO use solid rafters.	DON'T piece rafters together.
DO make sure your wood stain is thoroughly dry before attaching AGS system to superstructure.	DON'T start before the stain is dry, or use any wood stains which contain petroleum distillates.
DO coat the top of horizontal superstructure supports with white or a light colour.	DON'T coat with a dark color like black or dark brown.
DO use the AGS system or a system designed for multi-wall acrylic to install ACRYLITE® sheet.	DON'T try putting fasteners through ACRYLITE® sheets. DON'T use bars designed for glass. DON'T use butyl tape. DON'T embed ACRYLITE® sheets in silicone sealants.
DO use only full-length AGS bars where practical.	DON'T butt joints. Always offset the joints.
DO cut all gaskets square.	DON'T cut gaskets on an angle.
DO remove burrs from aluminum section after cutting.	DON'T try installing gaskets without removing burrs.
DO install ACRYLITE® sheet with ribs running parallel to the superstructure slope.	DON'T install ACRYLITE® sheet with ribs running parallel to the ground.
DO use only full-length ACRYLITE® sheet.	DON'T try joining two or more lengths.
DO cut ACRYLITE® sheet only as directed.	DON'T cut ACRYLITE® sheet unless absolutely necessary.
DO use only recommended silicone sealants: Tremco - Proglaze or Spectrum I Dow - 795 GE - Silpruf	DON'T use sealants not recommended.
DO wash your ACRYLITE® sheet with water and a mild detergent.	DON'T use cleaning fluids, solvents or sharp and abrasive objects. Never get directly on the roof panels to clean or remove snow, ice and debris.
DO check for compatibility of shade materials.	DON'T use non-compatible shade materials or systems.

Superstructure Requirements

A correctly built superstructure is essential. Any inaccuracies or short cuts at this stage will come back to haunt you later. So make sure:

1. That the superstructure requirements which include footings, piers, posts, rafters, intermediate supports, etc., must be engineered and sized to carry the loads as specified by the regulatory agency having jurisdiction.

2. That horizontal supports are spaced as shown by the maximum span length charts on page 4. (Load Charts).

3. That the recommended minimum slope is 2:12 (10°) to allow for adequate drainage.

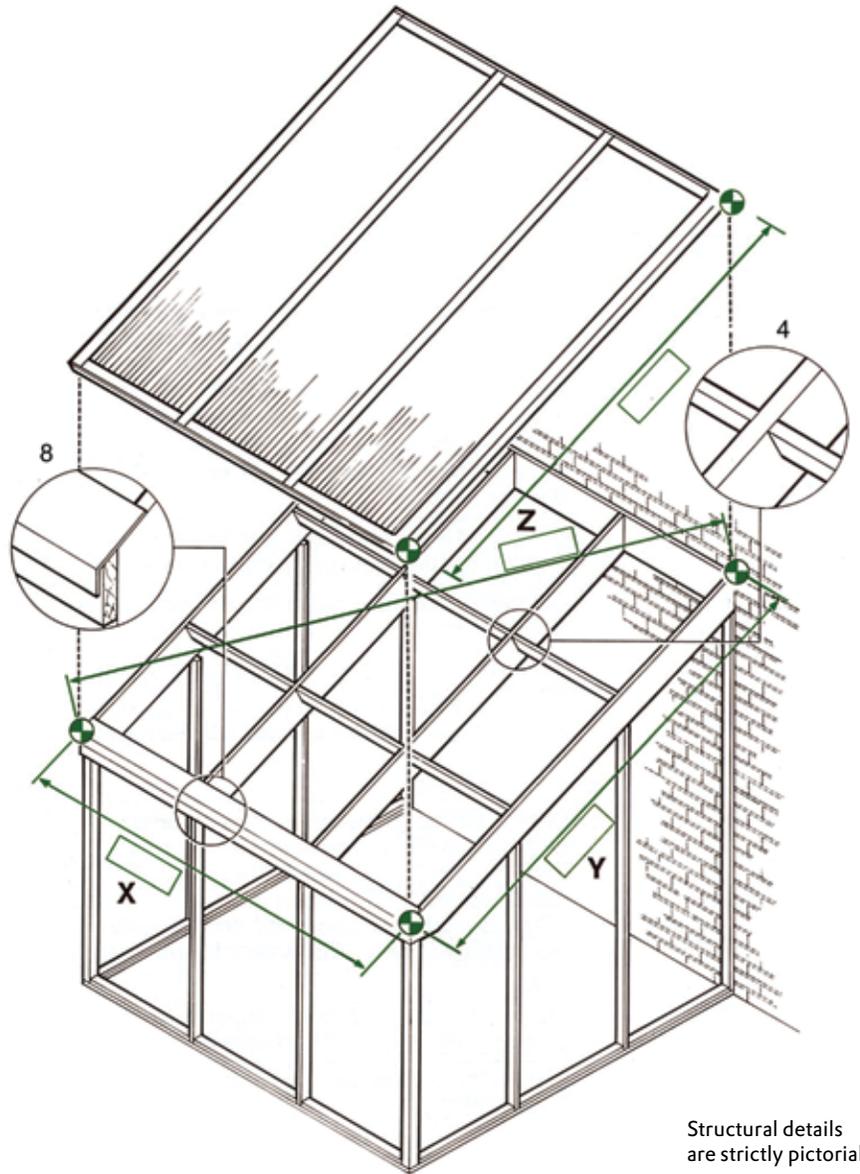
4. That all rafters and intermediate supports are cut and positioned to achieve the required slope and are of the same plane.

5. That all intermediate rafters are built on 48" centers.

6. That all end sections are 49³/₈" between the outside edge of the end rafter to the center of the nearest intermediate rafter.

7. That you check the squareness of your superstructure before proceeding to the glazing stage. Refer to superstructure check dimension chart.

8. That you flash and apply silicone sealant as required.



Structural details are strictly pictorial.

Superstructure Check Dimension Chart

Number of sheets	Width X	8' sheet Length	10' sheet Length	12' sheet Length	16' sheet Length
		Slope Length Y			
		98 ³ / ₄ "	122 ¹ / ₄ "	146 ³ / ₄ "	194 ¹ / ₄ "
1	50 ³ / ₄ "	110 ¹⁹ / ₃₂ "	132 ³ / ₈ "	154 ¹³ / ₁₆ "	200 ²⁵ / ₃₂ "
2	98 ³ / ₄ "	139 ⁵ / ₁₆ "	157 ⁵ / ₃₂ "	176 ⁵ / ₃₂ "	217 ²⁹ / ₃₂ "
3	146 ³ / ₄ "	176 ¹⁹ / ₃₂ "	191"	207 ¹³ / ₁₆ "	243 ¹⁵ / ₃₂ "
4	194 ³ / ₄ "	218 ⁷ / ₈ "	229 ¹³ / ₁₆ "	243 ⁹ / ₁₆ "	275 ¹ / ₈ "
5	242 ³ / ₄ "	261 ¹ / ₈ "	271 ¹³ / ₁₆ "	283 ¹³ / ₃₂ "	310 ²⁹ / ₃₂ "

TO READ CHART: Example: 3 sheets x 10'0" long being used. Go across to 10' long sheet. Go down 3 sheets and read dimensional value Z

ACRYLITE® High Impact Acrylic Multi-Skin and Wave Profile Sheets

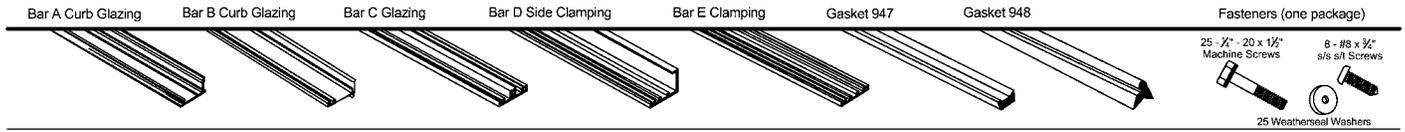
	DOUBLE-SKIN SHEET 16 mm	QUAD-SKIN SHEET 32 mm
RIB SPACING** (inches • millimeters)	1 1/4" • 32 mm	1 1/4" • 32 mm
THICKNESS** (inches • millimeters)	5/8" • 16 mm	1 1/4" • 32 mm
WIDTH** (inches • millimeters)	47 1/4" • 1200 mm	48 3/8" • 1230 mm
LENGTH (feet • meters)	up to 20'	up to 20'
PERIMETER CLAMP	YES	YES
POINT FASTEN	NO	NO
COLD BENDING***	YES	NO
EXPANSION CONTRACTION RATE	5/64 in./ft	3/32 in./ft
APPROXIMATE AREA WEIGHT	0.9 lb/ft ²	1.3 lb/ft ²
LIGHT TRANSMITTANCE	28% to 86%	64% to 76%
UV BLOCKING	YES	YES
YELLOWING	NO	NO
PATENTED NO DRIP & ANTI ALGAE	ONE SURFACE	ONE SURFACE
ENERGY VALUES		
R-VALUE (°F/BTU•hr•ft ²)	2.04	3.57
U-VALUE (BTU/hr•ft ² •°F)	0.49	0.28
ENERGY SAVINGS VS. SINGLE GLASS	50%	70%
FLAMMABILITY		
ASTM D-635	CC2 or C2	CC2 or C2
CAN/ULC-5102.2	LESS THAN 150	LESS THAN 150
SELF-IGNITION TEMPERATURE	830°F	830°F
SMOKE DENSITY RATING	7.0%	8.5%
MAXIMUM SERVICE TEMPERATURE	160°F	160°F
LIMITED WARRANTY		
NON YELLOWING WARRANTY	30 YEARS	30 YEARS
HAIL WARRANTY	10 YEARS	10 YEARS
NON PRO-RATED WARRANTY	YES	YES
LIGHT TRANSMISSION WARRANTY	10 YEARS	10 YEARS
GUARANTEED MINIMUM LIGHT TRANSMITTANCE (CLEAR)	79%	68%
HAIL WARRANTY	YES	YES ¹
PRO-RATED WARRANTY	NO	NO

LOAD CHARTS

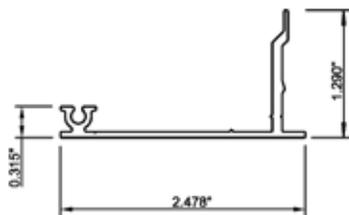
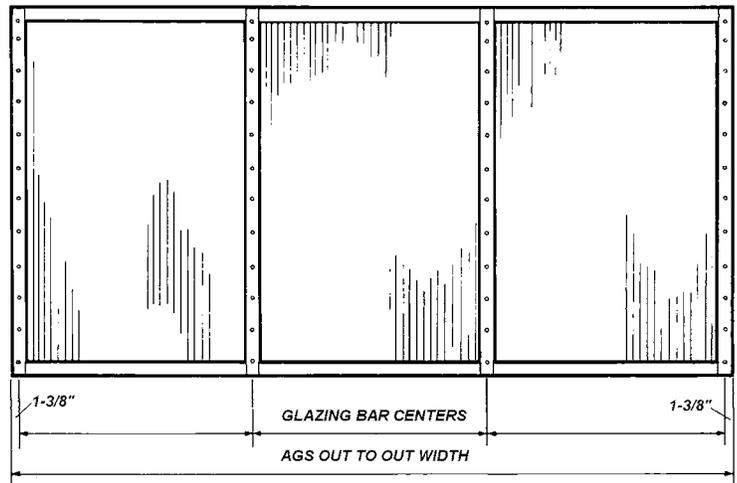
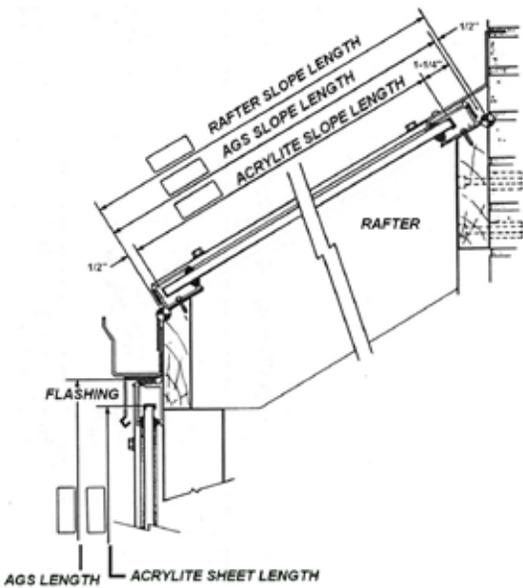
(lb/ft ²)	15	20	25	30	35	40	45	50	55	60
SHEET TYPE	SUPPORT SPACING REQUIRED									
8 mm Acrylite DOUBLE-SKINNED	106"	86"	75"	67"	63"	60"				
16 mm Acrylite DOUBLE-SKINNED	193"	157"	135"	116"	102"	91"	83"	75"	71"	69"
32 mm Acrylite QUAD-SKINNED	not required	not required	154"	146"	137"	122"	96"	82"	76"	72"
3 mm Acrylite WAVE	40"	30"	26"	23"	18"	14"				

Note: Maximum support spacing is measured in the direction parallel to the sheet's ribs.

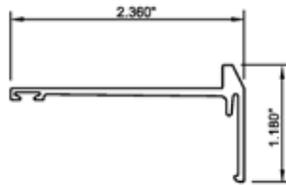
Component Dimensions



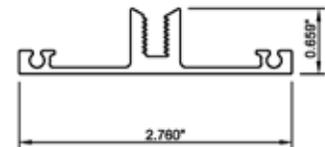
No. of Sheets	Superstructure Out to Out Dimensions		Sheet Size	Bar A Curb Glazing c/w #948	Bar B Curb Glazing c/w #947	Bar C Glazing c/w #948	Bar D Side Clamping c/w #948	Bar E Clamping c/w #948	Fasteners
Variable	Width Custom	Slope Length Custom	Width 1/4" Less Than Center to Center Glazing Bars	Aluminum Out to Out Width	3/16" Less Than Out to Out Width	1/4" Less Than Out to Out Rafter Slope Length	1/4" Less Than Out to Out Rafter Slope Length	1/4" Less Than Out to Out Rafter Slope Length	4 - #8 x 3/4" s/s s/t Screws per Bar C
			Length 2 1/2" Less Than Out to Out Rafter Slope Length 20' Max	Gasket Out to Out Width	2" Longer Than Out to Out Width	Out to Out Rafter Slope Length	Out to Out Rafter Slope Length	Out to Out Rafter Slope Length	1 - 1/4" - 20 x 1 1/2" Machine Screws and Neoprene Washers per Every 10" of Bar D and Bar E Length



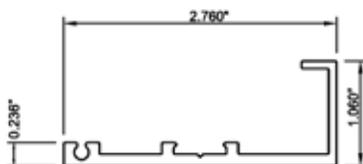
Bar A



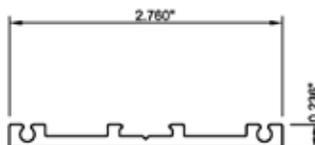
Bar B



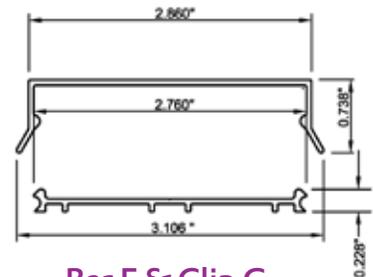
Bar C



Bar D

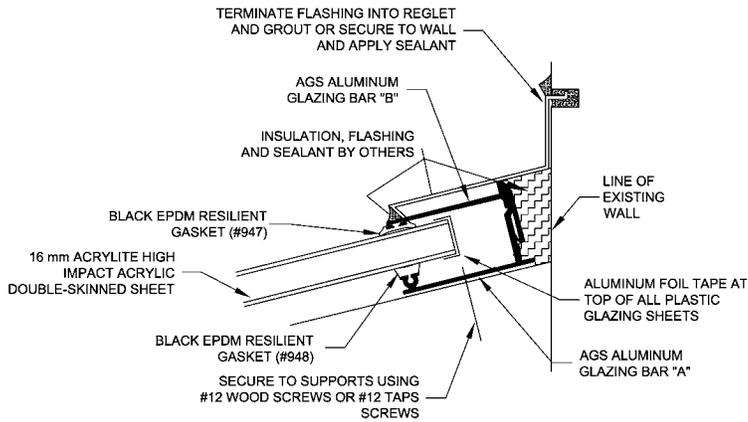


Bar E

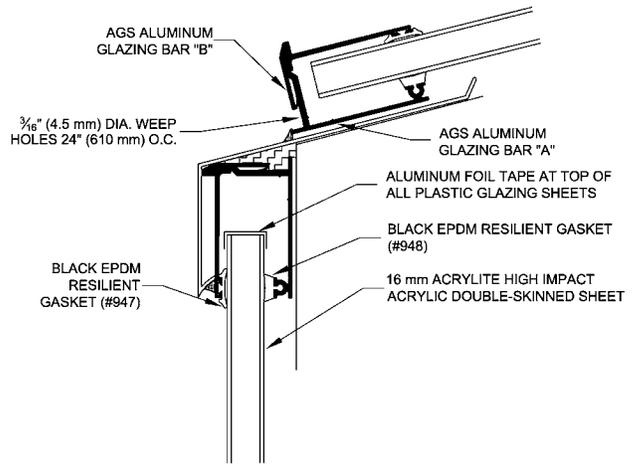


Bar F & Clip G

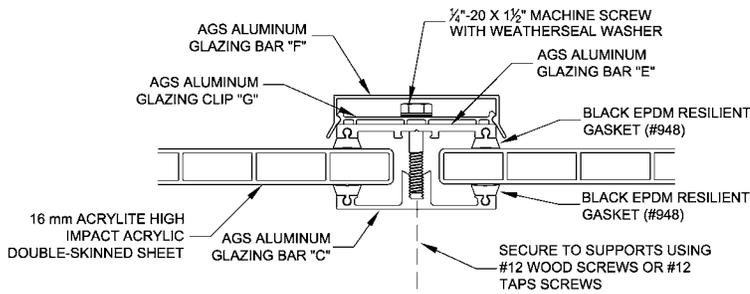
Typical Assembly Details



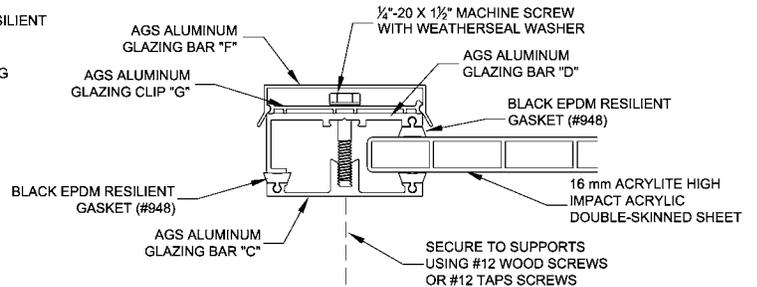
Detail 1
Roof-Wall



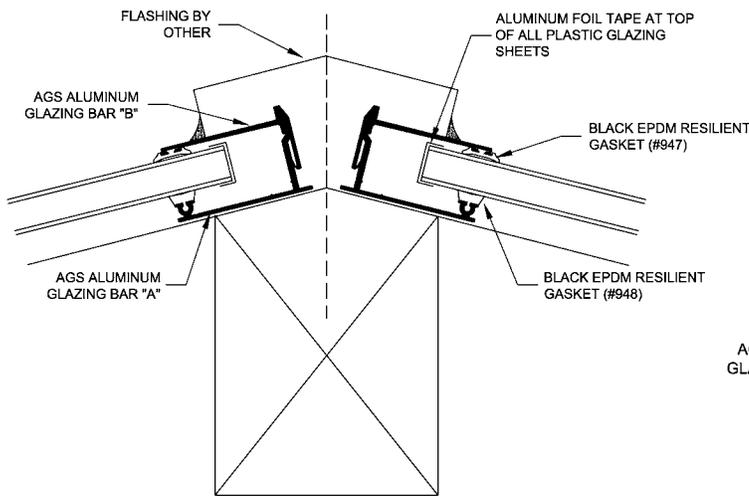
Detail 2
Eave Section



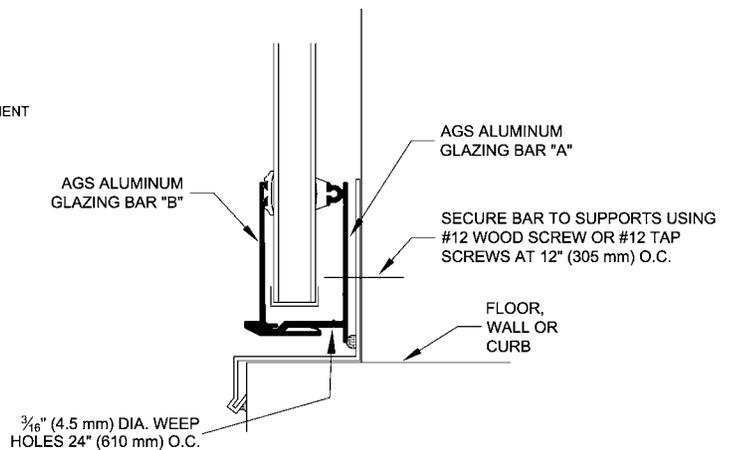
Detail 3
Intermediate Connection



Detail 2
Terminal Connection



Detail 5
Ridge



Detail 6
Base

Cutting Instructions

Cutting Instructions for Non-Standard ACRYLITE® Acrylic Sheet

1. Mark your cutting line on the polyethylene masking with a grease pencil or felt tip marker.
2. Ideally, use a special plastic cutting blade. For 7 & 7 1/4" saw blades, use a Triple Chip Blade (TCB) or an Alternating Bevel Tooth (ABT) blade with a minimum of 40 teeth. The blades shall be carbide tipped with a rake angle of 0-10.
3. Also suitable: 8"-10" hollow ground blade designed for sawing brass, copper or aluminum with 6-8 teeth per inch.
4. Chips left in channels after cutting must be vacuumed or blown out with compressed air.
5. Be sure to temporarily replace tape after cutting, until ready for installation.

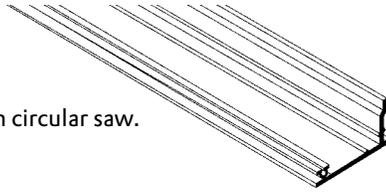
Building with Non-Standard ACRYLITE® Acrylic Sheet

For structures that do not conform to 48" centers and/or standard length (rectangular roof or vertical) ACRYLITE® panels, use the chart, drawings and cutting instructions on previous page. Once you have determined component dimensions from page 5, proceed as described in Assembly and Fabrication sections starting on page 8.

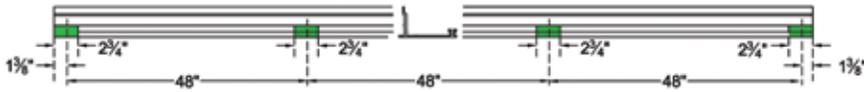
Note: For non-rectangular glazed areas – on site layout and calculations required.

AGS Glazing System

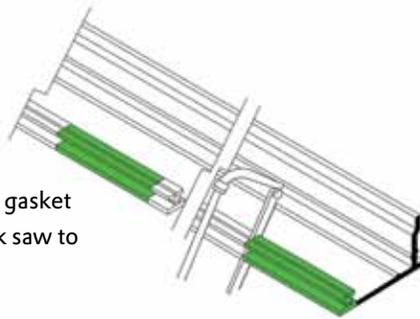
A1 Cut to length required with circular saw.



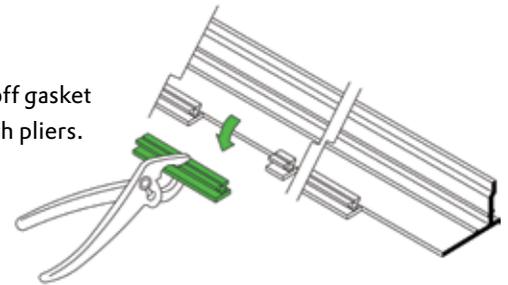
A2 Measure and mark notches on 48" centers



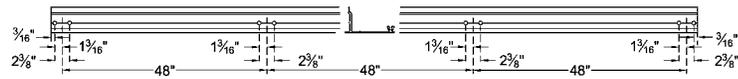
A3 Cut through gasket channel with hack saw to V groove.



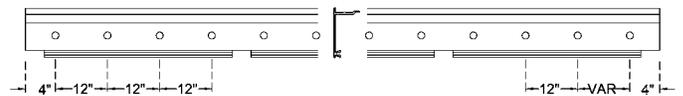
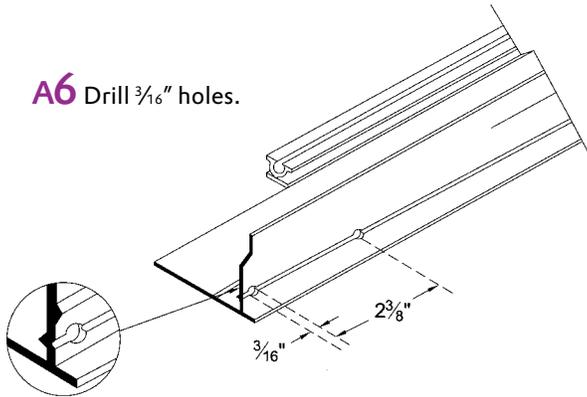
A4 Snap off gasket channel with pliers.



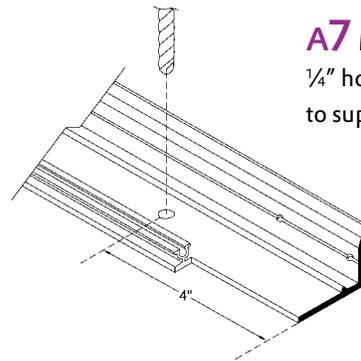
A5 Measure off and mark connecting hole centers for 3/16" holes on V groove.



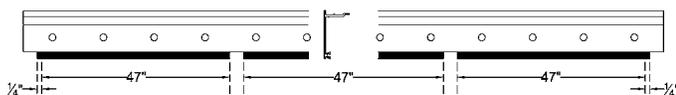
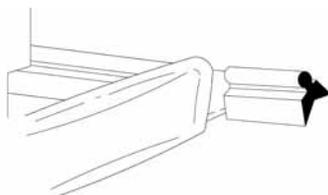
A6 Drill 3/16" holes.



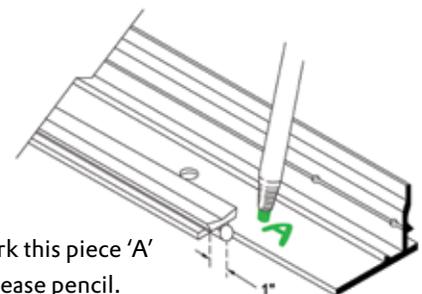
A7 Mark off and drill 1/4" hole in bar to mount to super-structure



A8 Cut gasket #948 into the number of 47" lengths required.



A9 Mark this piece 'A' with a grease pencil.

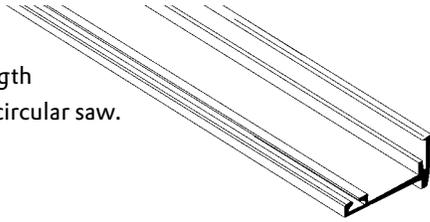


Fabrication

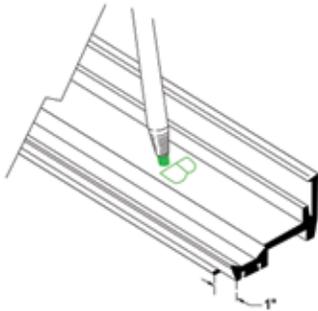
Bar B Curb Clamping

AGS Glazing System

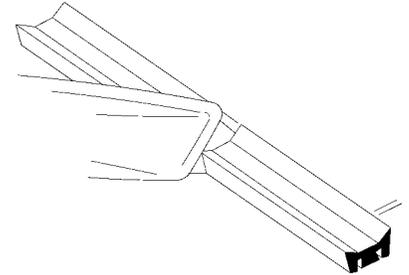
B1 Cut to length required with circular saw.



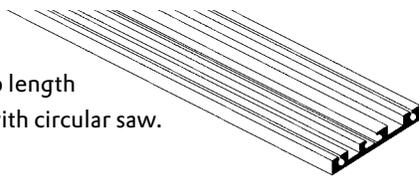
B3 Mark this piece 'B' with a grease pencil.



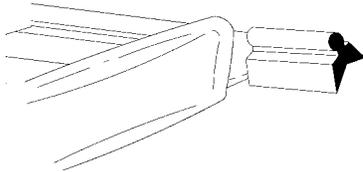
B2 Cut gasket #947 to lengths required. Wet gasket #947 with a soap and water solution. Slide gasket into position with 1/4" overhang at each end.



C1 Cut to length required with circular saw.

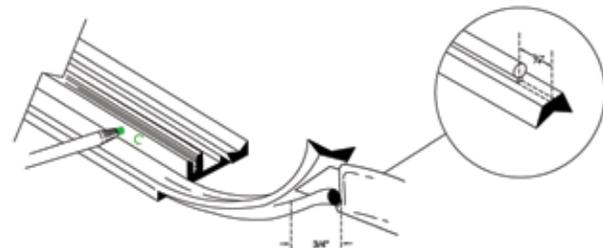
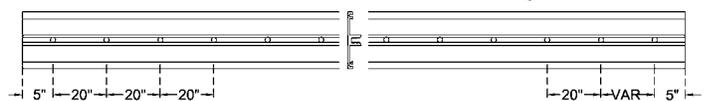
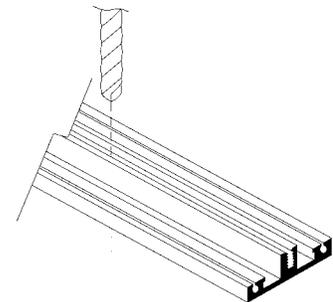


C3 Cut gasket #947 to length required.



Bar C Glazing

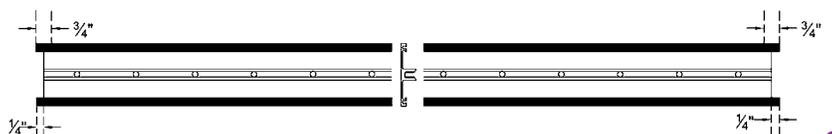
C2 Measure off and drill 1/4" holes through screw channel.



C4 Cut gasket channel guide on underside of gasket back 3/4" at both ends.

C5 Mark this piece 'C' with a grease pencil.

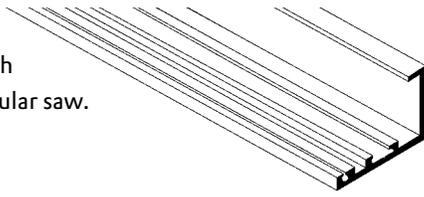
C6 Slide gasket in position with 1" overhangs at each end.



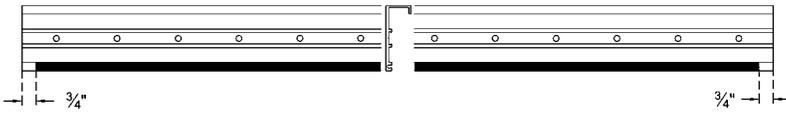
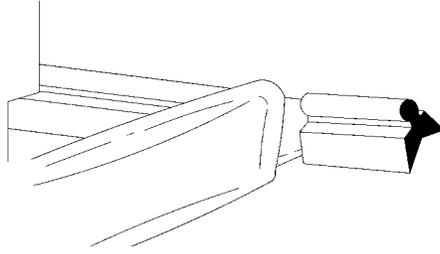
Fabrication

AGS Glazing System

D1 Cut to length required with circular saw.

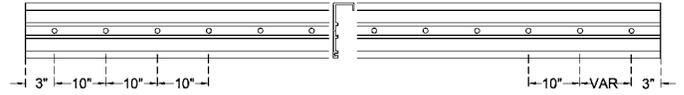


D3 Cut gasket #948 to length required. Slide gasket in top position $\frac{3}{4}$ " back from each end.

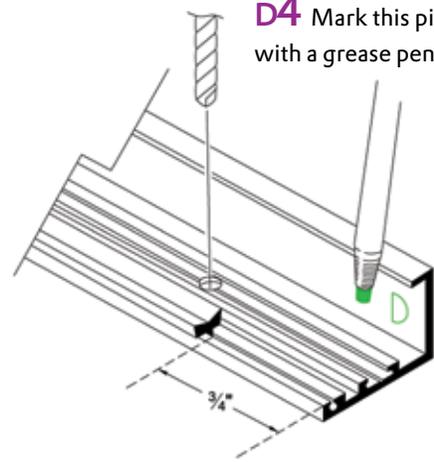


Bar D Side Clamping

D2 Measure off and drill $\frac{1}{32}$ " holes through centre line.

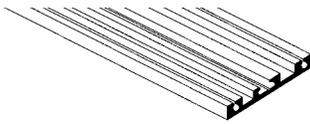


D4 Mark this piece 'D' with a grease pencil.

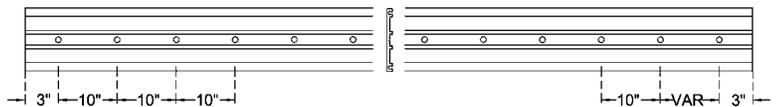


Bar E Clamping

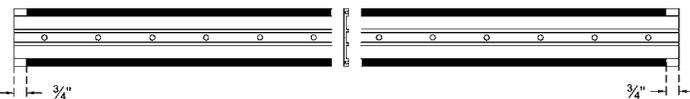
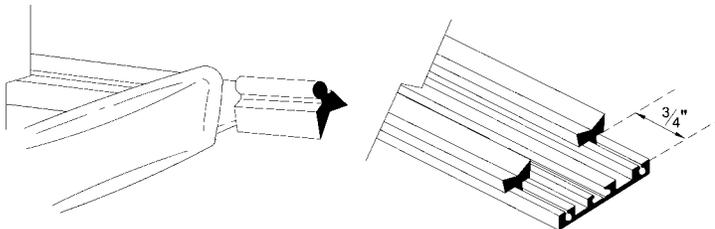
E1 Cut to length required with circular saw.



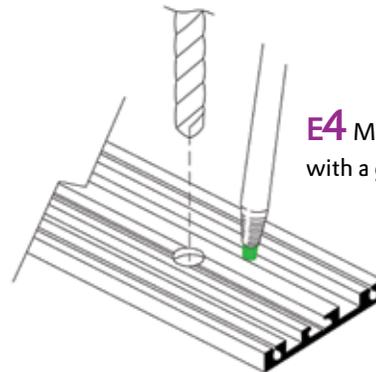
E2 Measure off and drill $\frac{1}{32}$ " holes through centre line.



E3 Cut gasket #948 to length required. Slide gasket into position $\frac{3}{4}$ " back from each end.

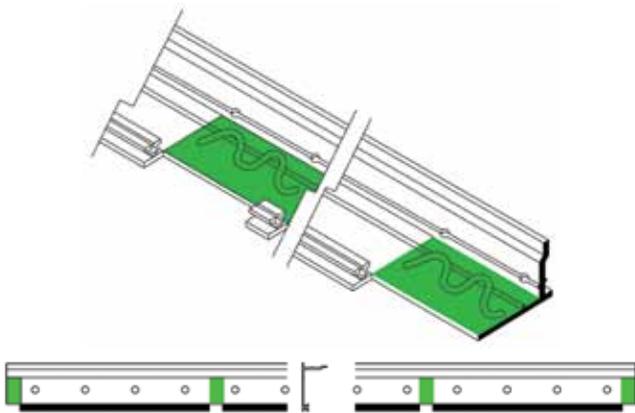


E4 Mark this piece 'E' with a grease pencil.



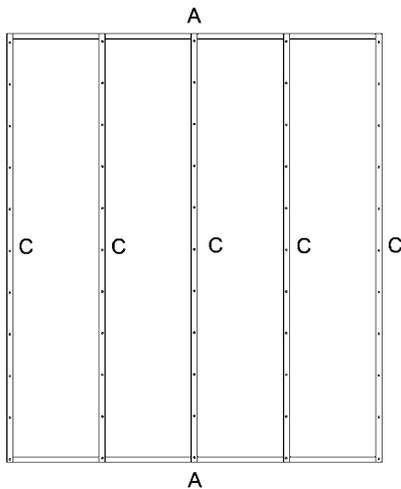
Assembly

AGS Glazing System



1 Spread silicone sealant on Bar 'A' as per diagrams above.

4 Lift assembly into place and square it with the superstructure.



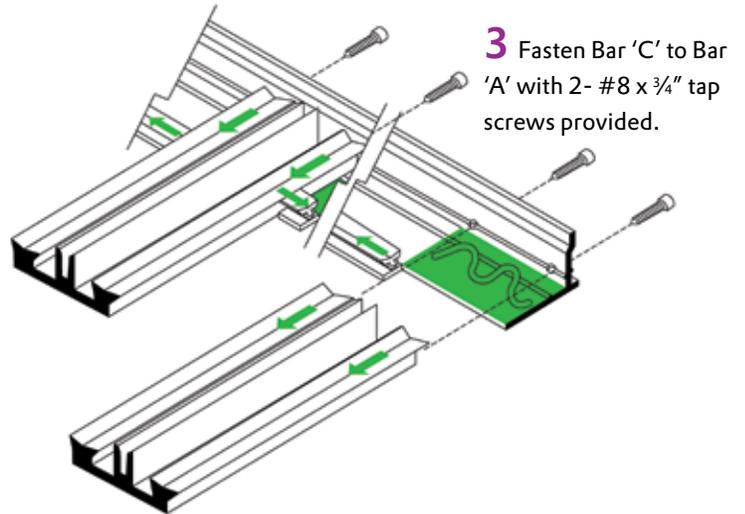
5 Double check for squareness. See diagonal check chart 5A.

AGS System Check Dimension Chart 5A

Number of Sheets	Width X	8' Sheet Length	10' Sheet Length	12' Sheet Length	16' Sheet Length
		Slope Length Y			
		97 3/4"	121 3/4"	145 3/4"	193 3/4"
1	50 3/4"	110 1/8"	131 29/32"	154 1/32"	200 9/32"
2	98 3/4"	138 15/16"	156 3/4"	176 1/16"	217 15/32"
3	146 3/4"	176 5/16"	190 1/16"	206 27/32"	243 1/16"
4	194 3/4"	217 29/32"	229 1/16"	243 3/4"	274 23/32"
5	242 3/4"	261 1/16"	271 9/16"	283 5/32"	310 19/32"

TO READ CHART: Example: 3 sheets x 10'0" long being used. Go across to 10' long sheet. Go down 3 sheets and read dimensional value Z.

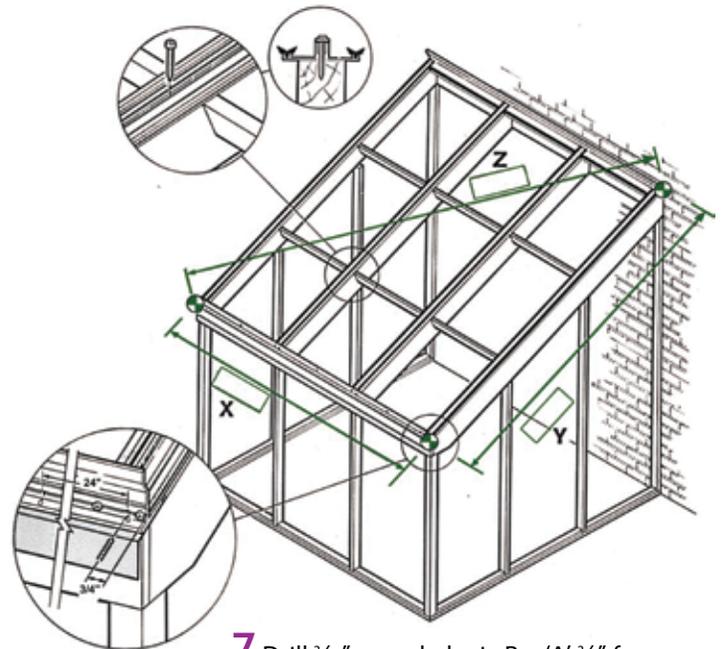
2 Place Bar 'C' in position compressing gas-kets on Bar 'A' and Bar 'C' to allow a snug fit.



3 Fasten Bar 'C' to Bar 'A' with 2- #8 x 3/4" tap screws provided.

6 Mount the frame to the superstructure using #12 x 2 1/2" wood screws supplied by others.

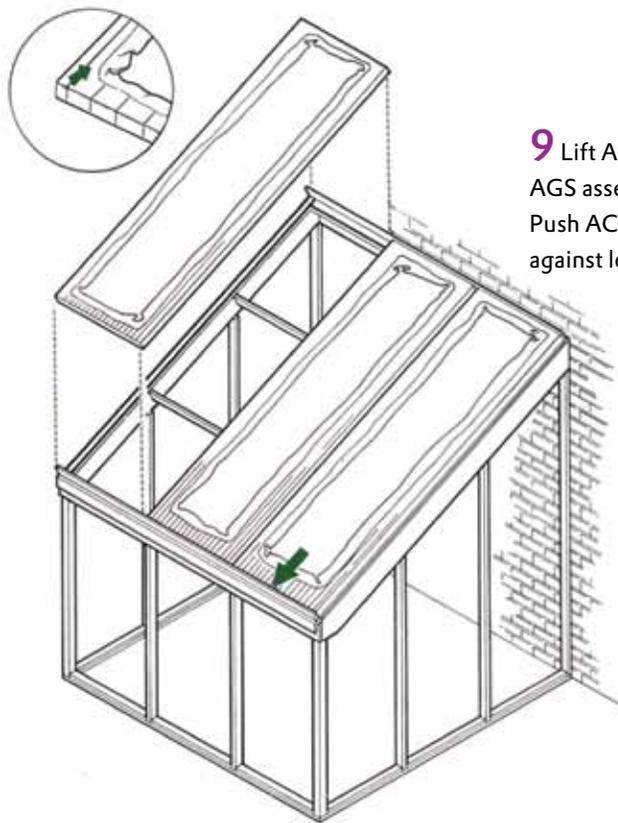
Note: At lower Bar 'A', use a neoprene washer with the screws.



7 Drill 3/16" weep holes in Bar 'A' 3/4" from end continuing on 24" centers.

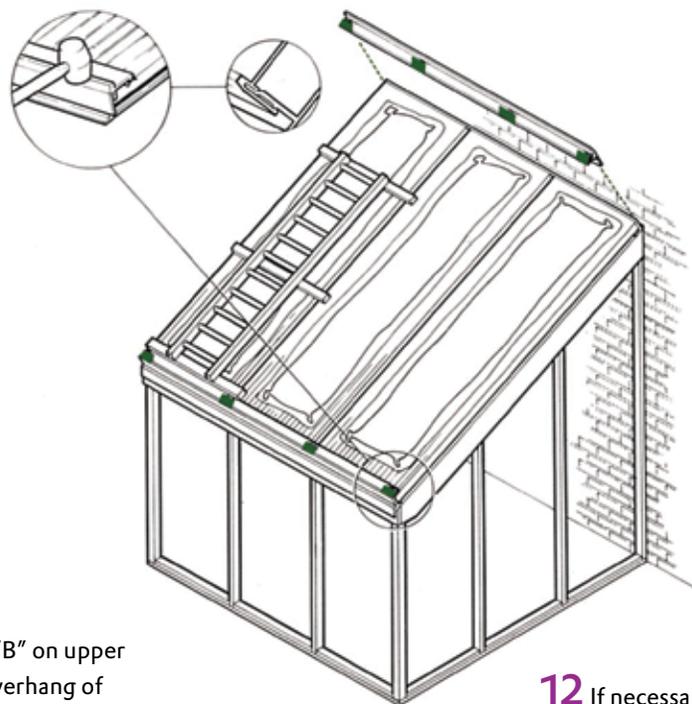
For vertical installations drill weep holes in lower bar A BEFORE installing the assembly.

8 Peel back masking on ACRYLITE® sheet about 4" from all 4 edges on each side. Remove tape from both ends. Tape off top end of all sheets with aluminum foil tape.



9 Lift ACRYLITE® sheet onto the AGS assembly and drop in place. Push ACRYLITE® sheet down against lower Bar "A".

10 Center lower Bar "B" on lower Bar "A" with an equal overhang of Bar "A" ($\frac{3}{32}$ ") on each end. Tap Bar "B" with white rubber mallet until secure. Snap on.



11 Center upper Bar "B" on upper Bar "A" with an equal overhang of Bar "A" ($\frac{3}{32}$ ") on each end. Snap on as above with white rubber mallet.

12 If necessary to remove Bar "B", pry off with flat screwdriver.



13 Spread silicone sealant on overlapping ends of Bar "E" and "D" before assembly.

14 Slide weatherseal washers onto all 1/4" machine screws.

15 Position Bar "D" onto side Bar "C". Compress gaskets to fit. Fasten with 1/4" machine screws.

16 Position Bar "E" onto Bar "C". Compress gaskets to fit. Fasten with 1/4" machine screws.

17 Wipe area to be silicone sealed with white vinegar.

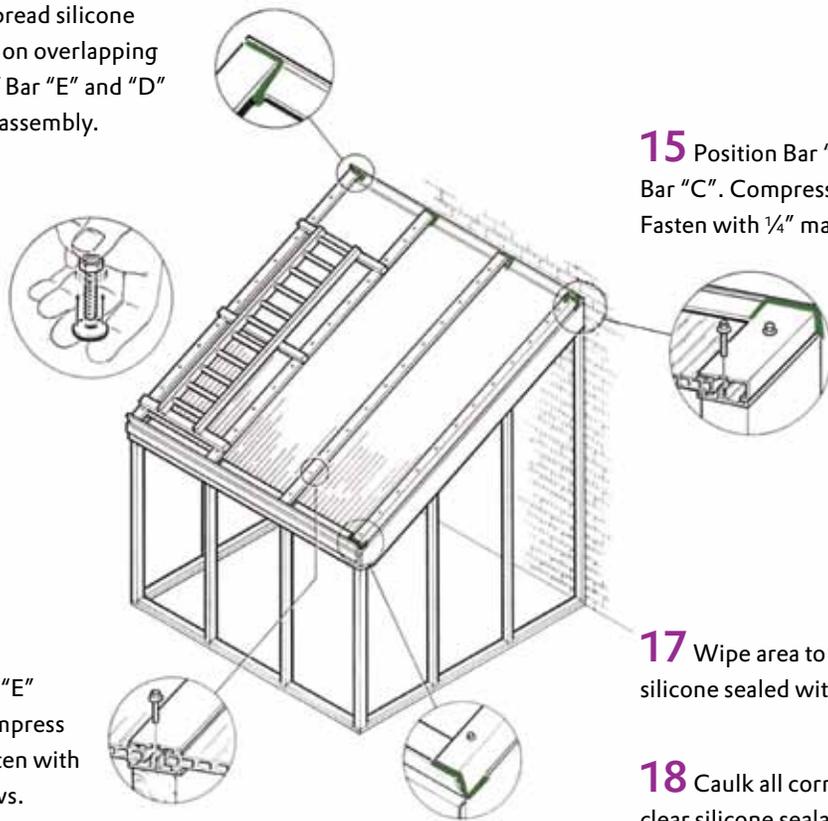
18 Caulk all corners with clear silicone sealant.

19 Install top and bottom flashing as required.

20 Peel off masking from both sides of ACRYLITE® panels.

21 Install eavestrough under eave flashing.

22 Apply silicone sealant around perimeter.

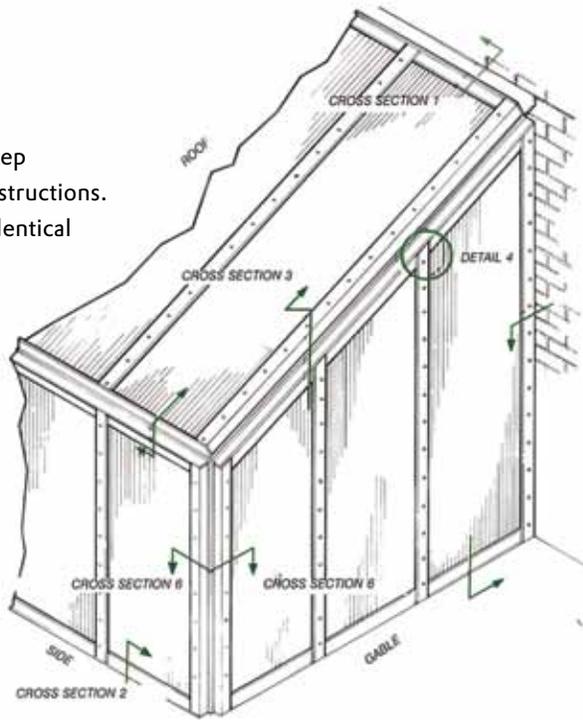


Flashing Details

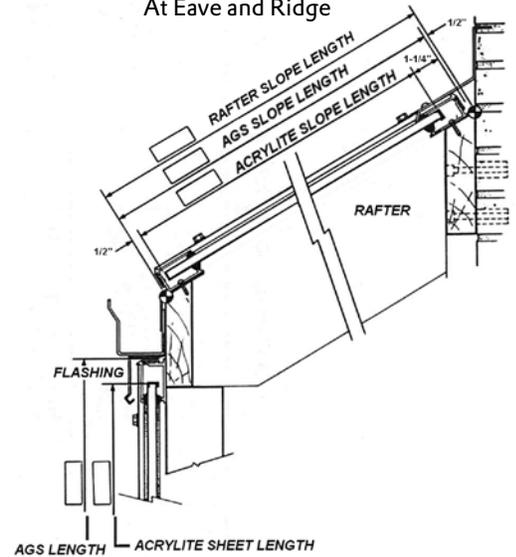
Perspective of Side and Gable Installation

Vertical Installation

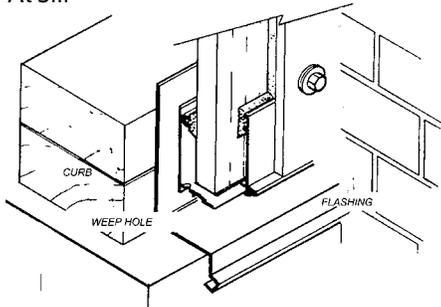
Follow preceding step-by-step Fabrication and Assembly instructions. Vertical glazing details are identical to sloped details with the exception of flashing and drilling of weep holes.



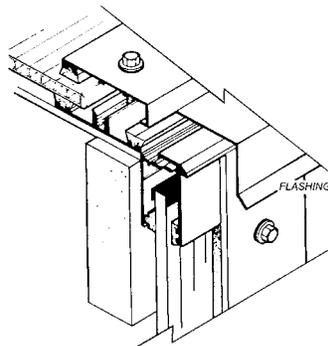
Cross Section 1
At Eave and Ridge



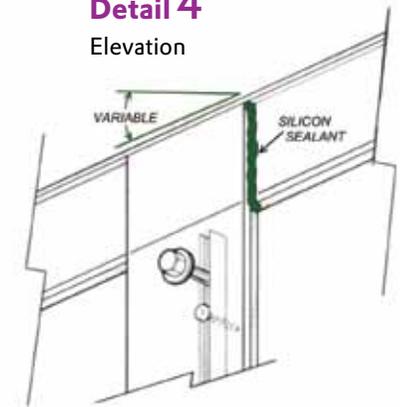
Cross Section 2
At Sill



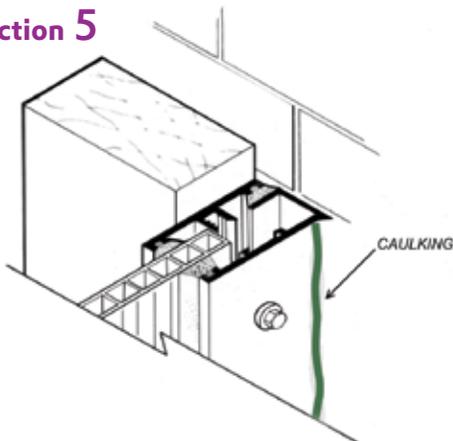
Cross Section 3
Roof End Bar at Gable



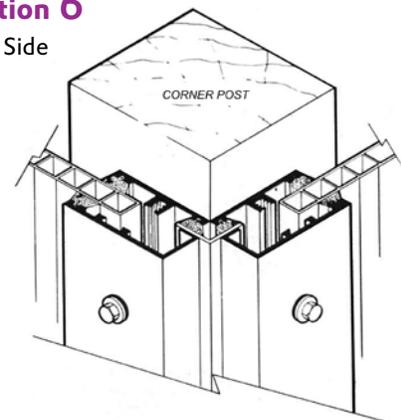
Detail 4
Elevation



Cross Section 5
At Wall



Cross Section 6
At Corner of Side and Gable





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ACRYLITE®

Fire Precautions:

ACRYLITE® acrylic sheet is a combustible thermoplastic. Observe fire precautions similar to those used for other combustible materials like wood or paper. When using ACRYLITE sheet, be sure to observe the relevant building codes and other regulations that may apply to your application.

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