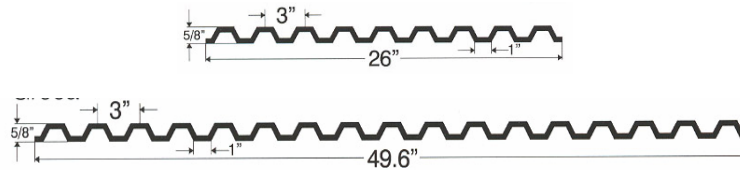


H & F Manufacturing Corp. Greca 76 Installation

Profile Dimensions



Distance Between Purlins

Sheet Thickness	Weight/ square foot	Load/ square foot	Distance between Roof Purlins	Distance Between Wall Purlins
1/32"	4 oz/ft ²	10.24 lb/ft ²	3.61 ft	3.94 ft
		16.39 lb/ft ²	3.28 ft	3.61 ft
		22.53 lb/ft ²	2.96 ft	3.28 ft

* Note: Other intermediate thickness up to 1/16" are available upon request. Distance between purlins for those sheets to be arrived by extrapolation.

1. The dimensions depicted above do not supersede the requirements of local construction codes. The distances depicted above are based on the structural properties with the following factors being taken into consideration: sheet deflection, potential wind load, potential snow load, hail and application load according to usual construction practice.
2. When designing a new roof, it is strongly recommended that the slope be above 10%. The maximum recommended panel length is 20'.
3. The recommended maximum distance between the edge and first purlin is 900 mm or the value dictated by the design engineer. (See the drawing at the bottom of page 1)

Positioning of Sheets

1. The sheets should be laid down on the roof against the primary direction of rain. (See Figure 2)
2. Stepping ladders and other devices required for safe work should be used.
3. **Do not step on the sheets between purlins.**
4. Never leave sheets untended until all the required screws have been properly tightened.

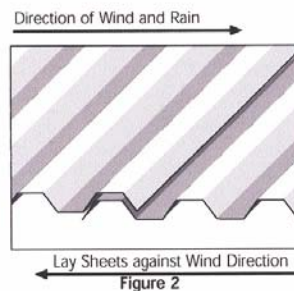


Figure 2



Figure 3

Overlap

Width overlap (sheet edge):

Minimum overlap: 4.73”

Minimum distance of 2.37” of each sheets edge from center-line of supporting purlins (line of screws).

Maximum overlap: 7.88”

Length overlap:

One corrugation

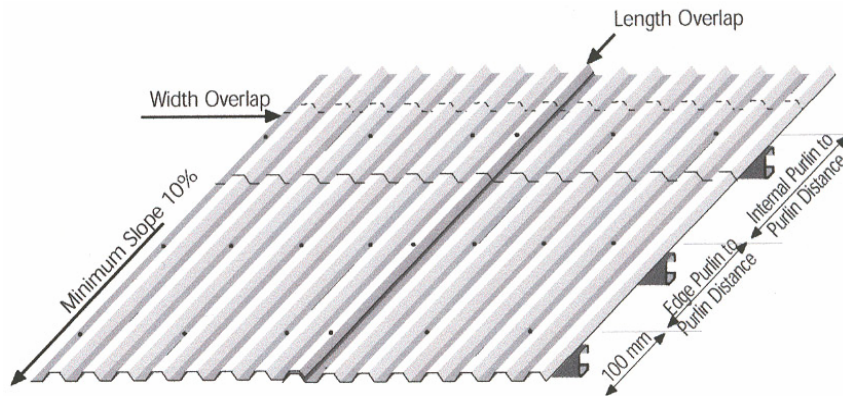
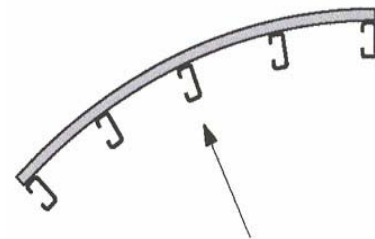


Figure 4

Roofs Edge: Sheets at the roof’s edge should extend over the edge by not more than 3.94”

Arching Radius:

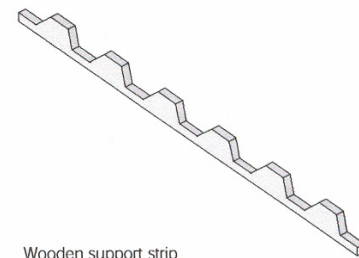
When covering curved structures, it is possible to set the sheets on an arched framework so that they will arch within the range of elasticity of the sheets without inducing stress. The minimum radius of the arch created is 19.5’.



Minimum Radius = 6.00 meter
Figure 5

Roof Fastener Location:

1. When using shaped rigid support strips (made of wood or plastics) a fastening screw should be inserted into every third corrugation crest at each internal purlin. If support strips are not used, fastening screws should be positioned every third corrugation valley. (fig. 6a)
2. When using shaped rigid support strips along the edge purlin, the screws are to be inserted into alternate corrugation crests. If not - the screws are positioned every alternate corrugation valley. (f i g . 6b)
3. A hole must be pre - drilled into each screw location. The diameter of the hole must be .08” larger than that of the screw.
4. The screws should be tightened with an electric screw driver with an adjustable clutch, taking care not to over - tighten excess tightening may harm the sheet and cause failure.
5. Along the length of overlapping corrugations, it is recommended that a sheet to sheet fastener be attached between the purlins, at least one for every span (Se the section “Sheet to Sheet Fasteners below)



Wooden support strip
Figure 6a



Positions for fastening roof screws at internal purlin.
Figure 6b

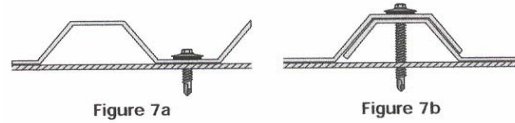


Positions for fastening roof screws at edge purlin.
Figure 6c

Note: Support strips (or spacers), made of wood, sheet steel or rigid plastics, if available, can e used on the purlins to ease and stabilize the installation of the sheets. The fastener positions on the roof should be as instructed above.

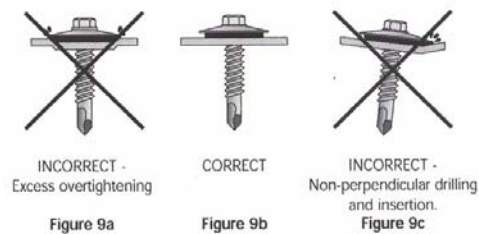
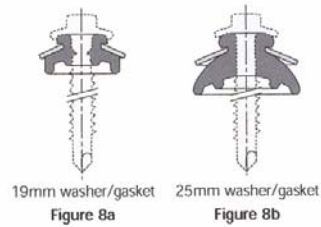
Wall Fastener Location

1. A fastening screw must be inserted into every third corrugation valley, at each internal purlin position. (see fig 6a)
2. Along the edge purlin, the screw is to be inserted into alternate corrugation valleys. (see fig 6b)
3. Along the length of overlapping corrugations, the screw should be inserted through the upper panel at the corrugation crest over each purlin.
4. A hole must be pre - drilled into each screw location. The diameter of the hole must be .08” larger than that of the screw.



Screws, Washers, and Gaskets

1. **General Recommendations:** For optimal long - term maintenance free service, H&F strongly recommends the use of heavy - duty corrosion resistant screws, and special metal washers with profiled 16” (at least) thick EPDM rubber gaskets of .75” (crest) or .99” (valley) diameter, to fasten the sheets to the supporting structure and seal the fastener’s hole.
2. Use of self - tapping screws with pre - drilled holes or self - drilling screws is recommended. For wooden purlins a special wood screw should be used. (See fig 8e)
3. The screw placed into each corrugation crest should be .25” x 1.5”, or a #12 or 14 gage screw. Screws placed in a corrugation valley should be .25” x 1”. Each screw should be fitted with a conical corrosion resistant metal washer at least .04” thick and .75”/1” in diameter. The screw should be tightened moderately without deforming the washer and rubber gasket or distorting the corrugation.
4. Special attention should be given to the insertion of the screws perpendicular to the material face. Oblique insertion could damage the sheet and/or result in leaks



* H&F offers to supply, upon demand, the recommended fastening combinations mentioned above with the Greca 76 sheets.

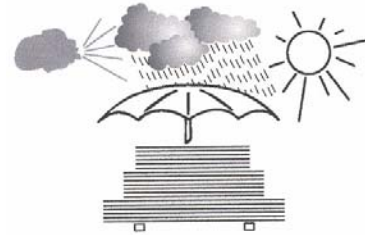
Sheet to Sheet Fasteners

Sheet to sheet fasteners are used to create a seal between overlapping sheets between purlins. When the slope of the roof is less than 15%, it is necessary to insert a fastener every 15.75”. Where the slope is greater than 15%, the spacing is every 19.69”. It is recommended to use 1/4” or 3/4” self - tapping screws **without the need for prior drilling of a hole**



Handling and Storage

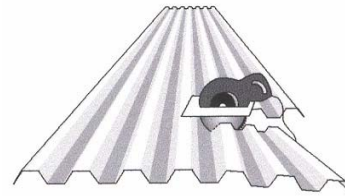
1. H&F corrugated sheets must be transported and stored horizontally on a flat, sturdy pallet whose dimensions are equal to or larger than the sheets themselves. The sheets should be secured and fastened to the pallet. It is possible to store sheets of smaller dimensions on top of larger sheets of the same type. (Never store sheets of larger dimensions on top of smaller sheets!) The sheets must be stored in a cool and shaded location.
2. Important: Never cover the pallet with, or place on the pallet, materials that are conductors of heat (e.g. metal, pipes, clear or dark objects).
3. In cases where it is necessary to store the pallet outdoors, cover it with a white opaque polyethylene sheet, cardboard, or any other material that does not absorb or conduct heat. The entire pallet must be covered.



Storage of sheets.
Figure 11

Cutting

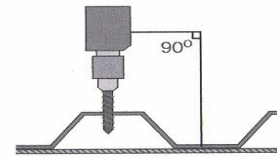
It is possible to cut H&F's corrugated sheets using a circular saw with small teeth, rotating at a high speed, taking care to advance the saw slowly. It is also possible to use a portable electric saw (Jig Saw) or sheet metal shears. In any case, it is important to support the sheet in the vicinity of the cut and clean away the dust and debris generated by cutting.



Cutting the sheet.
Figure 12

Drilling

1. Drilling should be carried out with a drill bit intended for metal. The hole diameter must be .08" greater than the diameter of the screw to be used. It is important to support the sheet in the vicinity where the sheet is being drilled. The dust generated by drilling must be cleared away before the insertion of the screw.
2. **Special attention should be given to drill all the required holes perpendicular to the face of the material.**



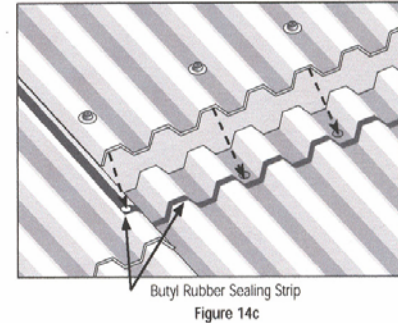
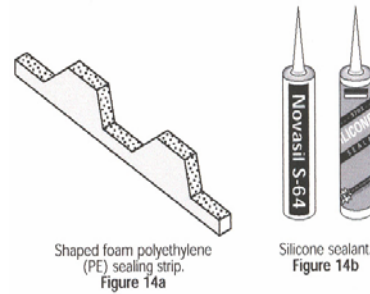
Drilling the sheet.
Figure 13

Chemical Resistance (compatible sealant and adhesive materials)

1. Greca 76 sheets 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 cause damage to the sheet. The degree of damage will depend on the severity of attack and time of exposure.
2. Choose only sealants and adhesives which are compatible with Polycarbonate.
3. **Use of sealants or adhesives not included in the recommended list must receive the Manufacturer's explicit approval. This can be obtained through your distributor. Use of materials not on the list, or which have not received the Manufacturer's explicit approval, may harm the sheet and will void all warranties and any responsibility of the manufacturer for the performance of Greca 76 sheets.**
4. Your local H&F distributor can provide additional information and forward materials for evaluation of their compatibility with Unitrex.

Sealing and Bonding

1. Silicone **Sealant** - H&F Manufacturing Corp. strongly recommends using either Dow Corning 3793 or Novasil S - 64 from Otto Chemie (white or transparent). For other materials, please consult your local sales representative.
2. Corrugated sealing closure strips should be used to prevent the entry of water, wind, insects or other small animals between installed sheets. A seal between the sheet and the edge purlin of the roof can be created using a sealing strip in the form of the profile. This is held in place by the same screw used to fasten the sheet to the purlin.
3. Sealing strip between overlapping sheets should be used where the pitch of the roof is less than 15%. Only Butyl rubber strips should be used. The strip should be placed between overlapping sheets along the length and width of the overlap at both edges. In cases where penetration of wind or fumes must be prevented, a sealing strip should be used irrespective of the slope of the roof. Wherever a sealing strip is inserted, a fastening sheet to sheet screw tightening the seal should be used.



WARNING - Do not use materials which are not recommended by H&F Manufacturing Corp. Specifically, polyurethane foam should not be used to install either PHASE-2 PVC or Unitrex Polycarbonate. Contact with this material will render the sheets fragile. When in doubt, consult your H&F sales representative.

In as much as H & F Manufacturing Corporation's material has many approved uses, any non - standard uses should be tested by the user to determine its suitability. Proper installation techniques must be in accordance with H & F Manufacturing Corporation's procedures, and H & F will not be liable for damages due to improper installation. In accordance with our company's continual product development, you are advised to check with your H & F Manufacturing Corp. supplier to ensure that you have the most up-to-date information.