



# **Duralite<sup>®</sup> and Duraseal<sup>®</sup> Muntin Installation Manual**

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## **Introduction**

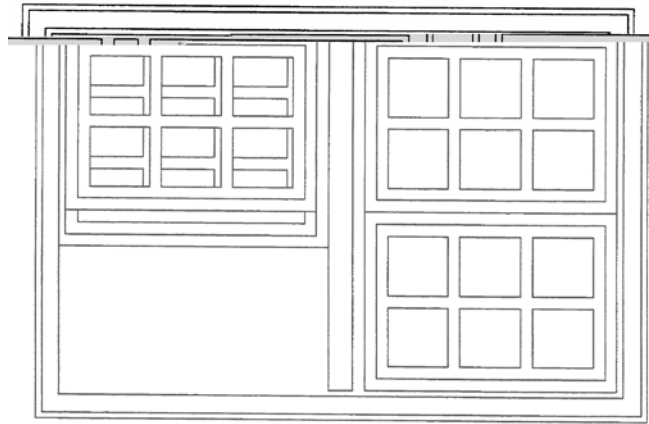
The purpose of this manual is to demonstrate and explain the correct procedures in fabricating Duraseal® or Duralite® IG units with internal muntins. It is our intent to demonstrate that efficient production of quality IG units containing muntins only requires following these guidelines.

This text details the following aspects of manufacturing Duraseal® or Duralite® IG units with internal muntin assemblies:

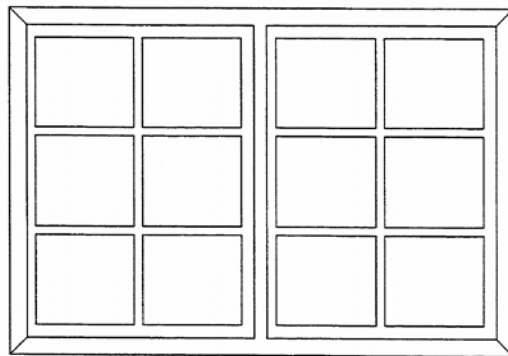
1. Muntin cutback
2. Muntin Assembly and Installation
3. Muntin alignment methods
4. Specials assembly (Non-rectangular windows)
5. Source for GridLoc™ endclips

It is our contention that the success of a muntin operation relies on following the procedures outlined in this manual, all of which contribute to the productivity and quality of your finished muntin units.

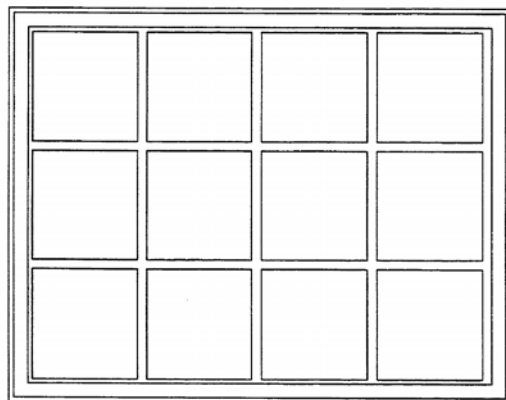
## TYPICAL WINDOW TYPES USING MUNTINS



**Double/Single Hung Window**



**Casement Window**



**Picture Window**

## Muntin Cutback

The muntin cutback is the difference between the glass dimensions and the muntin length. The muntin cutback will be determined by three factors.

1. Duraseal<sup>®</sup> or Duralite<sup>®</sup> size used (height),
2. Duraseal<sup>®</sup> or Duralite<sup>®</sup> inset from the glass edge, and
3. GridLoc<sup>™</sup> end clip flange thickness.

Cutbacks range from 3/4" to 13/16" (19 to 21mm). The greater the undercut beyond this, the further the Duraseal<sup>®</sup> or Duralite<sup>®</sup> will be inset from the glass edge when using the same spacer height.

The muntin should be cut so that when the completed muntin assembly is set into the Duraseal<sup>®</sup> or Duralite<sup>®</sup> IG unit, the muntin end clips nearly contact the spacer (about 1/64" clearance on each side). This will ensure good wet-out of the Duraseal<sup>®</sup> or Duralite<sup>®</sup> to the Gridloc<sup>™</sup> end clip once heated and compressed.

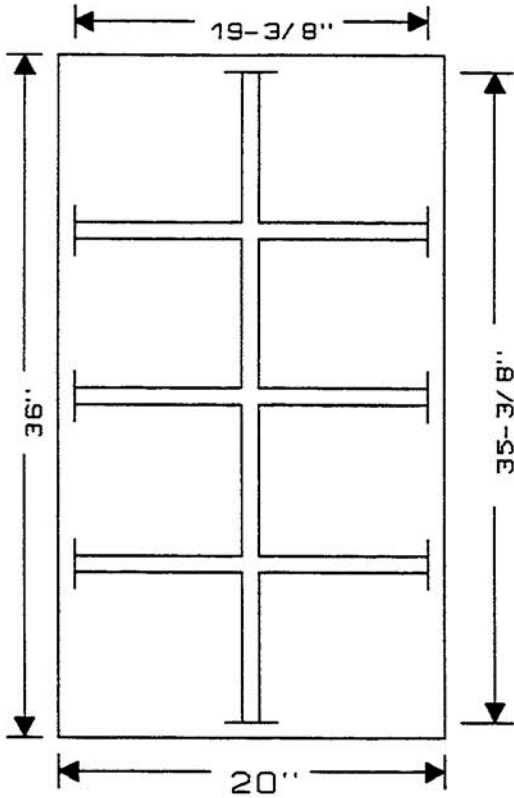
If the muntin cutback is too great, the following may occur:

1. Little or no contact with the Duraseal<sup>®</sup> or Duralite<sup>®</sup>, thus creating the potential for muntin movement.
2. Possibility of muntin misalignment due to difficulty in centering or squaring the muntin assembly.
3. Reduced MVP and/or sight-line infringement due to the propensity of applicators to push the Duraseal<sup>®</sup> or Duralite<sup>®</sup> inward to gain initial contact with the end clip, thereby causing the spacer to lean toward the airspace.

If the muntin cutback is too small, the following may occur:

1. The muntin assembly may not fit, and if forced into the Duraseal<sup>®</sup> or Duralite<sup>®</sup> unit it may bow. Once the unit is heated and compressed, this bowing will be more pronounced.

## MUNTIN CUTBACK EXAMPLES



**EXAMPLE #1: 25H with 1/16" inset**

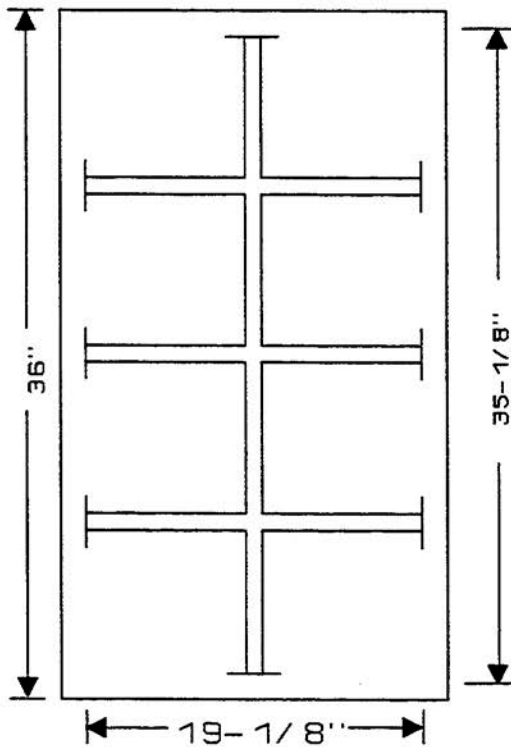
Duraseal® or Duralite® height  
 $= 0.251'' \times 2 = 0.502''$  (12.8mm)

Duraseal® or Duralite® inset  
 $= 0.077'' \times 2 = 0.154''$  (3.9mm)

End clip thickness  $= 0.063'' \times 2 = 0.125''$  (3.2mm)

Clearance (1/32")  $= 0.031''$  (0.8mm)

Total Muntin Cutback:  $= 0.812''$  or 13/16" (20.6mm)



**EXAMPLE #2: 50H with 0.125" inset**

Duraseal® or Duralite® height  $= 0.266'' \times 2$   
 $= 0.532''$  (13.5mm)

Duraseal® or Duralite® inset  $= 0.063'' \times 2$   
 $= 0.125''$  (3.2mm)

End clip thickness  $= 0.063'' \times 2 = 0.125''$

Clearance (1/32")  $= 0.031''$  (0.8mm)

Total Muntin Cutback:  $= 0.813''$  or  
 13/16" (20.7mm)

### ***Internal Muntin Cutback Chart***

Airspace	Spacer Height	Inset for 13/16" (20.65mm) Cutback	Inset for 7/8" (22.23mm) Cutback
25H	0.250" (6.38mm)	0.078" (1.98mm)	0.109" (2.77mm)
31H	0.250" (6.38mm)	0.078" (1.98mm)	0.109" (2.77mm)
37H	0.250" (6.38mm)	0.078" (1.98mm)	0.109" (2.77mm)
43H	0.250" (6.38mm)	0.078" (1.98mm)	0.109" (2.77mm)
50H	0.266" (6.76mm)	0.062" (1.57mm)	0.093" (2.36mm)
56H	0.266" (6.76mm)	0.062" (1.57mm)	0.093" (2.36mm)
62H	0.266" (6.76mm)	0.062" (1.57mm)	0.093" (2.36mm)
68H	0.266" (6.76mm)	0.062" (1.57mm)	0.093" (2.36mm)
75H	0.266" (6.76mm)	0.062" (1.57mm)	0.093" (2.36mm)
81H	0.266" (6.76mm)	0.062" (1.57mm)	0.093" (2.36mm)

**Note:** The cutback includes 0.063" (1.57mm) for the flanges of the end clips to be used and is rounded to the nearest 1/32" (0.8mm).

## Muntin Assembly and Installation

Once cut and notched correctly, the muntins are ready to be assembled. Proper sizing of the muntin joiner clip and Gridloc™ end clip is imperative for proper assembly and placement of the muntin into the Duraseal® or Duralite® IG unit.

The muntins should lie flat once assembled. If severe bowing is noted, the muntin may touch the glass once the IG unit is complete. If the muntin is white, you could see a gray area at the muntin to glass contact point.

**NOTE ABOUT TOUCH-UP PAINTING:** Touch up paint should be avoided. When used, apply sparingly and allow solvent to dry before unit assembly. Volatiles contained in paints may cause a chemical fog inside the IG unit. Allowing solvent flash time will eliminate this risk.

### ***Muntin GridLoc™ End Clip Selection***

There are numerous combinations of muntins and end clips available. It is important that the end clip is sized to fit both into the end of the muntin and properly inside the air space.

#### **Purpose of the GridLoc™ end clips:**

1. To center the muntin in the IG Unit air space, and
2. To hold the muntins in place.

The GridLoc™ end clips are designed to adhere to Duraseal® and to mechanically lock into the air space. Adhesion of the GridLoc™ end clip is through contact with Duraseal® or Duralite®. Once the IG unit is heated and compressed, the Duraseal® or Duralite® gains adhesion to the end clip.

GridLoc™ end clips are recommended for use with Duraseal® or Duralite®. ***End clips with pins should not be used.*** Also a perimeter frame should not be used.

GridLoc™ end clip size is vital to a quality muntin installation. Use the proper clip for the given airspace. This selection should be from a size selection chart available through Quanex I.G. Systems.



When the unit is compressed the lites of glass will come in contact with the end clip. This will prevent the end clip and muntin from rotation and movement.

Using an end clip that is too large may result in inadequate wet out, reduced MVP of the Duraseal<sup>®</sup> or Duralite<sup>®</sup>, or glass breakage. Conversely, using an end clip that is substantially smaller than the designated airspace, may cause muntin bar movement or an improperly centered muntin assembly.

### ***Duraseal<sup>®</sup> or Duralite<sup>®</sup> Application***

When applying spacer, it is important to:

1. Apply the tape straight,
2. Ensure the tape is perpendicular to the glass surface, and
3. Maintain a consistent inset from the glass edge.

The use of the Flexible Spacer Application Pro hand tool will ensure a more constant, proper tape application.

### ***Insertion of the Muntin Assembly into the IG Unit***

If the preceding steps are followed, inserting and aligning of the muntin assembly into the IG unit should not take longer than 20 seconds. This cycle time is based on the use of recommended equipment.

The muntin assembly should fit inside the applied Duraseal<sup>®</sup> or Duralite<sup>®</sup> with minimal clearance between the muntin and Duraseal<sup>®</sup> or Duralite<sup>®</sup>. Use care when positioning muntin (Note: clip has positioning feet that help with alignment before contact is made with surface of tape). After the muntin is positioned and pressure is applied to GridLoc<sup>™</sup> end clip, muntin will hold in place and top lite can be placed over unit (positioning feet are designed to allow slight compression and will be pushed lower when unit is topped).

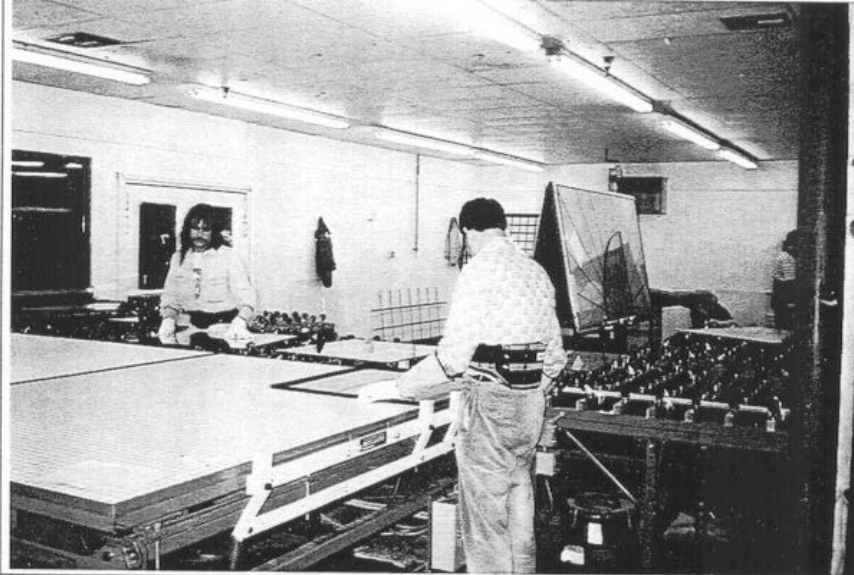
*Note: For higher production efficiencies grid assemblies may be placed by the applicator instead of the topper. This will allow the applicator to pre-insert grids and reduce the topper's cycle time and streamline the process.*

It is important not to touch the glass surface when setting the muntin assembly into the air space. Gloves can be worn to prevent marking the glass surface. Reference Quanex I.G. Systems Technical Bulletin M008, "Hynit gloves".

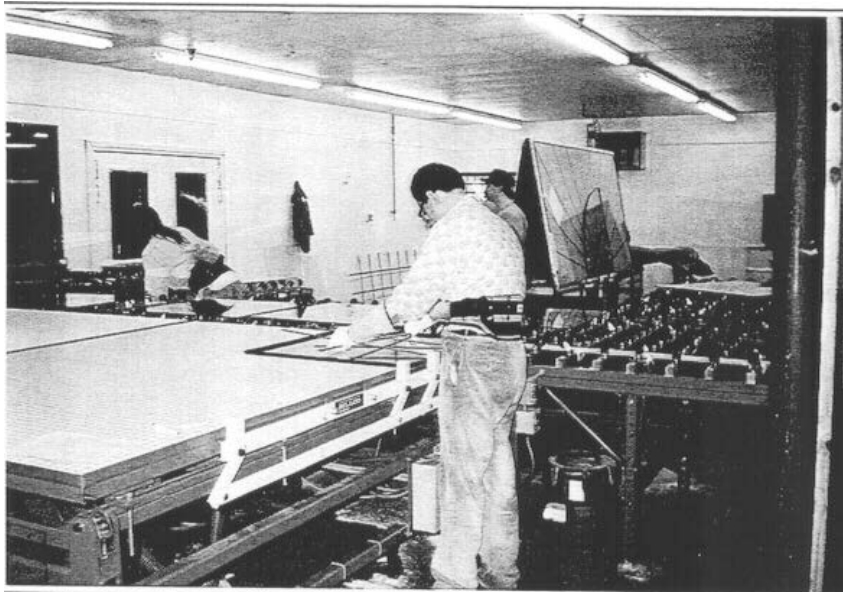
## Muntin Alignment Methods

### *Vertical and Horizontal Grid Boards*

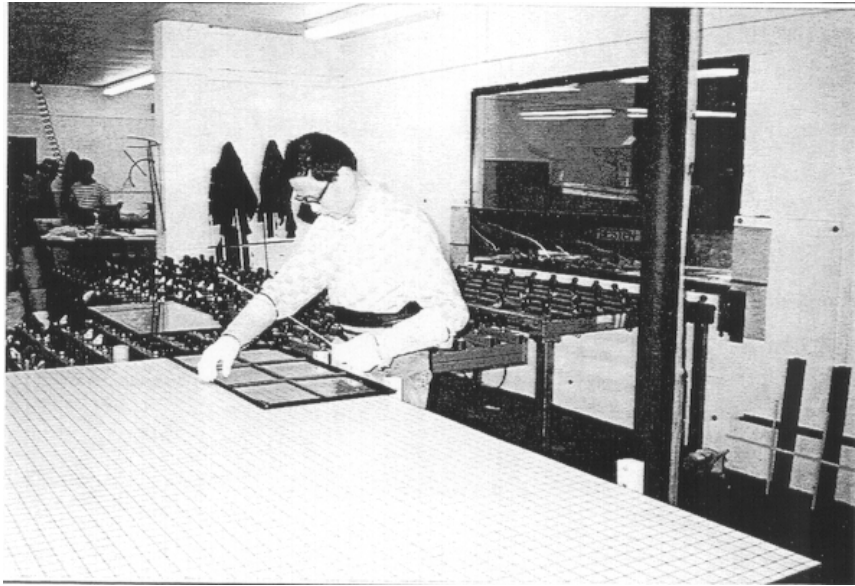
The following is a step by step procedure for using a horizontal grid board or muntin application table. The same principals apply to vertical grid boards.



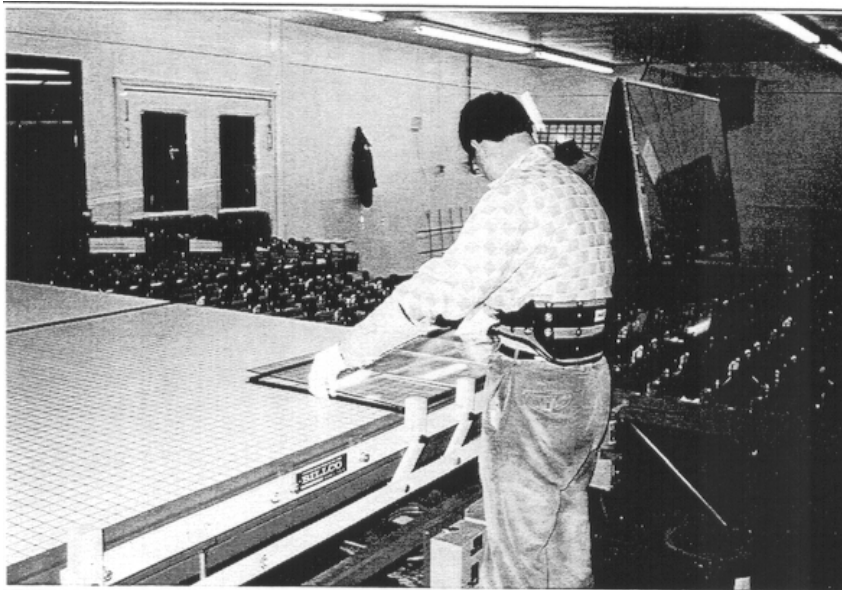
1. Place lite with Duraseal<sup>®</sup> or Duralite<sup>®</sup> against squaring stops on the table and turn off table air float.



2. Insert muntin assembly into unit. If proper inset of Duraseal<sup>®</sup> or Duralite<sup>®</sup> is maintained and the cutback is correct, the muntin assembly should fit snugly inside the spacer without bending the tape.



3. Use the grid pattern on the tabletop to align the muntins. When the muntin assembly is aligned as desired, apply gentle pressure to the outside of the Duraseal<sup>®</sup> or Duralite<sup>®</sup> at the end clip contact points.



4. Top unit with second lite. Direct unit into heated roller press.

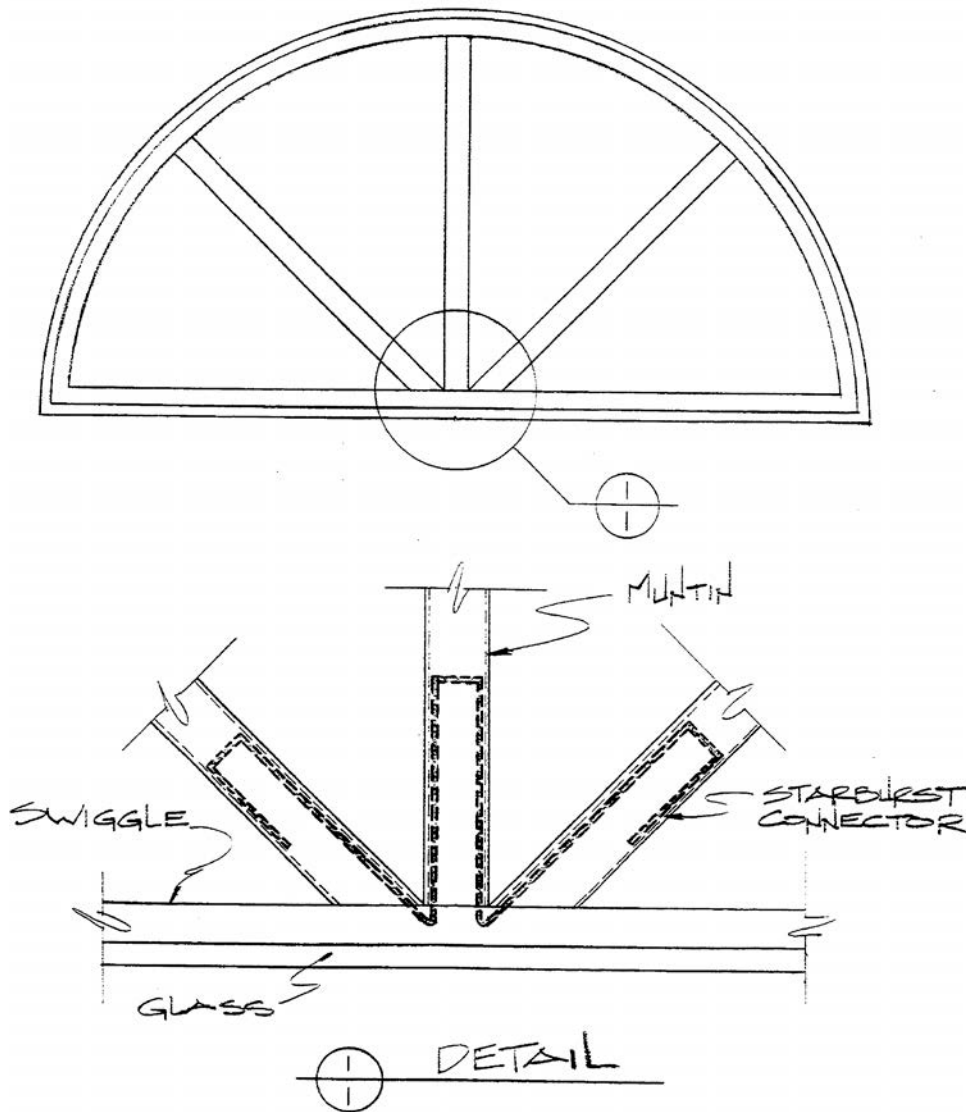
## ***Muntin Alignment using a Pattern for Specials***

The following steps are taken when making and using a pattern unit for the alignment of muntins into a Duraseal® or Duralite® IG unit.

1. Glass should be checked for square.
2. Apply spacer so that it is straight, parallel, and has a consistent inset from the glass edge.
3. Insert the muntin into the Duraseal® or Duralite® unit so that the muntin end clips sit flush against the spacer.
4. Align the muntin by measuring the correct distance from the glass edge and centering the muntin at this point.
5. Alternatively, you may measure the distance from the glass edge to the outside edge of the muntin at its intersecting points, and then use this dimension to set the muntin's ends. Check both sides to ensure that the muntin assembly is centered in the IG unit.
6. Once the pattern is set in place, ensure there is contact between the muntin GridLoc™ endclips and Duraseal® or Duralite®.
7. Top the unit checking that the corners are aligned.
8. Put glass pads on this unit ½" x ½" (12 x 12mm).
9. You are now ready to assemble another IG unit on top of this one.
10. At this point it is not critical that the pattern unit and the lite of glass which will have the Duraseal® or Duralite® applied to it be square with one another. It is important that when applying the spacer you place the tape straight, parallel and with the same inset as the pattern unit.
11. Once the Duraseal® is applied, square this unit with your pattern (**IMPORTANT**), since this is what will align your muntin assembly with the pattern unit assembly.
12. Place the muntin assembly into the Duraseal® or Duralite® unit and align the muntins directly over the pattern assembly. Make sure there is contact between the spacer and muntin GridLoc™ end clips.
13. Top the unit and remove it from the pattern unit. Once you have completed the units to match the pattern, remove the pads from the pattern unit and send it through the heat and compression equipment.

## STARBURST MUNTIN ASSEMBLY

Various muntin connectors and accessories, such as the starburst connector shown in the diagram below are available from fenestration suppliers.



### Muntin GridLoc™ Endclip and Accessory Source

Quanex I.G. Systems Customer Service: 800-233-4383

Or contact your local Quanex Territory Sales Manager

For additional product information,  
visit [www.Quanex.com](http://www.Quanex.com)



**Quanex Building Products**

T 888-910-5280

T 800-233-4383

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