

# Architectural Manual

Thermally Improved

## ALUMINUM SERIES

Windows & Patio Doors



## Instructions on how to use this manual:

This document has been designed for easy navigation and to quickly click to the section you need. Here's some important tips on using this document:

- Any item print in **red**, will click through to the corresponding item.
- Click to any item in the Table of Contents on **page 3**. Click on the Milgard logo at the top of any page to return to the Table of Contents - FULL MANUAL ONLY.
- From each section's Quick Links page, click to any Drawing listed.
- From any Drawing page, click the "Go Back to Quick Links" box on the bottom right of the page to return to the list of drawings.
- Click on the links on the bottom of the page to go to Revit, SketchUp . PDF and .DWG files. Please note that you must have internet access for these links and you will be re-directed to the Milgard site.
- This document can also be navigated from Adobe Acrobat Bookmarks.

Revit, SketchUp, .PDF and .DWG files can be accessed at [milgard.com/professionals](http://milgard.com/professionals) or clicking here:

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# About Thermally Improved Aluminum Series



Milgard Thermally Improved Aluminum windows consist of extruded aluminum, where a “channel” is cut through the aluminum and polyurethane is poured into this channel to separate the interior from exterior extrusion. This process is done to reduce thermal transfer and improve energy efficiency.

Features and benefits of Thermally Improved Aluminum Windows:

- Sealed, mechanically-joined corners stay square and true over years of use, helping to keep homes dry.
- Clean, narrow sight lines for contemporary designs and maximum view area.
- Milgard SunCoat® Low-E glass for excellent energy savings and protection against fabric fading.
- Industry-leading Full Lifetime Warranty.
- Anodized coating helps to prevent against rusting, pitting and corroding.

*Not all locations manufacture or sell Thermal Break aluminum. Check with your Milgard Dealer.*

## Energy Packages

Milgard adheres to ENERGY STAR® v6 requirements to meet or exceed U-Factor and Solar Heat Gain Coefficient (SHGC) criteria for all ENERGY STAR® zones.

Milgard also offers high energy performance options for the ultimate in energy efficiency. Energy efficient windows could include one or more of the following features based on your climate.

- SunCoat® or SunCoatMAX®
- EdgeGardMAX®
- Argon

For more details on Milgard Energy Efficient packages, visit [www.milgard.com/learn/energy-efficiency/energy-efficient-components](http://www.milgard.com/learn/energy-efficiency/energy-efficient-components)

**To check the energy performance of all Milgard windows and doors, use our Energy Calculator at:**

[milgard.com/energy-calculator](http://milgard.com/energy-calculator)

## Test Standards

Contact your Milgard Representative for specific test data.

*CAUTION: The use of petroleum based fuels or solvents as release agents in stucco wall installations or glass cleaning will chemically attack materials used in seals and other components, and voids the Milgard Full Lifetime Warranty. The use of wax-based release agents is recommended.*

*Expanding foam for insulation purposes should not be used. Non-expanding foam or loose packed batt insulation is recommended.*

## Thermally Improved Aluminum Options

### Hardware



Casement and Awning Handle



Spring action lock for Single Hung and Horizontal Slider

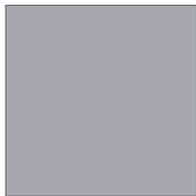


Sliding Door Handle - interior



Sliding Door Handle - exterior

### Colors



Clear Anodized



Bronze Anodized

### Grids



5/8" Flat Grid



1-1/16" Sculpted

## Full Lifetime Warranty

At Milgard, we build our windows and doors to last. With the dedication to quality that we put into building the best windows in the business, it wouldn't make sense to back them with anything but the best warranty in the business. That's why we back every properly installed window and door for as long as the homeowner owns their home—including parts and labor. It's why you can be sure you won't find any windows better than Milgard.

For complete warranty details, visit [milgard.com](http://milgard.com).



## Why Milgard?

Milgard is one of the largest and most trusted names in windows and doors. For the last 50 years, we've demonstrated our commitment to innovation, quality and service.

While our coverage is extensive, our service is local. Milgard has multiple locations throughout the Western U.S. and Western Canada. Our belief is that by being close to our customers, we can provide them better service. This means faster lead and delivery time, as well as faster response to any warranty situations. We're there for you long after the job has been completed. Milgard also has a comprehensive network of qualified dealers and offers some of the best training in the industry.

Awards give you added assurances and Milgard has been named "Best Quality in the Nation" eight times and the nation's "Most Used Vinyl Window" four times by Builder magazine. Both Professional Remodeler and Professional Builder magazines have named us "Most Preferred Vinyl Window" three times.

# Picture Windows

*Please also see:*

[TI Aluminum Options](#)

[Full Lifetime Warranty](#)

## Overview

All 920 Series Casement and Awning windows are available in both standard and custom sizes to match virtually any design, either new or retrofit.

## Components

### FRAME

Frame components are made from 6063-T5 aluminum alloy with a structural wall thickness of .078", and non-structural wall thickness of .062". The 920 Series utilizes a thermal break for added insulation value. The poured in polyurethane insulator is approximately 1/4" wide at the most narrow point and is used in all frame members. The frame is available in clear and bronze anodized finishes with a standard .4" mil coating thickness. Wide screw spacing on the mechanically joined corners ensure a rigid connection with a consistent dimension. Corners are sealed for added protection from the weather.

The 920 Series is available with either a standard frame with nail-on fin. The standard frame is 2-1/4" in width. Both types utilize 1" overall glazing for either fixed or vented sections.

### NAIL-ON FIN

An integral nailing fin extends 1" around the perimeter of the standard frame and is used to attach the window into the rough opening. The fin is scored for complete removal for retrofit/wood stop installations. The fin is set back 1-5/16" from the exterior edge of the frame.

### WEEP SYSTEM

The rectangular weep holes are located in the frame sill for effective drainage and moisture control.

### GLAZING MATERIAL

AAMA approved glazing tape adheres glass to the fixed and vent frame and seals and cushions the glass. Rigid vinyl setting blocks are used to support the glass-unit, preventing glass slip-page and glass-to-metal contact.

### GLASS

Glass options are available in 1" overall insulating units in clear, tinted, reflective, obscure, Low-E, and safety glass. Other specialty glass is available upon request.

## Options

### GRIDS

Available in 5/8" standard or 1-1/16" sculptured aluminum pro-files sealed between panes.

### WARM EDGE SPACER

Spacer available in a standard clear finish or optional bronze or champagne finish in the airspace of the insulating glass units. PGG Intercept™ warm-edge steel spacer available in certain regions (standard in some areas.) Contact your Milgard Representative for spacers used in your area.

### TRUE DIVIDED LITE

True divided lite configurations are available, subject to production approval.

### TEST STANDARDS

Contact your Milgard Representative for specific test data.

*CAUTION: The use of petroleum based fuels or solvents as release agents in stucco wall installations or glass cleaning will chemically attack materials used in seals and other components, and voids the Milgard Full Lifetime Warranty. The use of wax based release agents is recommended. Expanding foam for insulation purposes should not be used. Non-expanding foam or loose packed batt insulation is recommended.*

# Radius Windows

*Please also see:*

[TI Aluminum Options](#)

[Full Lifetime Warranty](#)

## Overview

The R-20 Series features a frame designed to blend well architecturally with other Milgard windows. One extrusion is used for all radius and round windows. Attaching bars are used to join the radius tops with other variations. Please refer to the appropriate product description for examples of vents, weeping system, and other detailed information. The R-20 is attached to the 920 with a stacking bar by mechanical joining, pop riveting, or welded connections depending on the type of application. The minimum diameter for the R-20 Series is 2'6".

## Components

### FRAME

Frame components are made from 6063-T5 aluminum alloy with a structural wall thickness of .060" and a non-structural wall thickness of .050". The R-20 Series utilizes a thermal break for added insulation value. The poured in polyurethane insulator is approximately 1/4" wide at the most narrow point and is used in all frame members. The frame is available in clear and bronze anodized finishes with a standard .4" mil coating thickness. The R-20 Series is designed for clean lines and high visual appeal with maximum glass exposure.

Wide screw spacing on the mechanically joined corners ensure a rigid connection with a consistent dimension. Corners are sealed for added protection from the weather. The standard frame is 2-1/4" in width.

### NAIL-ON FIN

An integral nailing fin extends 1" around the perimeter of the standard frame and is used to attach the window into the rough opening. The fin is scored for complete removal for retrofit/wood stop installations. The fin is setback 1-5/16" from the exterior edge of the frame.

### GLAZING MATERIAL

AAMA approved glazing tape adheres the glass to the frame members glazing leg. The bedding seals and cushions the glass. Rigid vinyl setting blocks are used to support the unit above the frame sill, preventing glass slippage and glass-to-metal contact. Anodized bead 3/4" x 3/4", with a wall thickness of .050" is fastened down into the perimeter frame member on all radius sections.

### GLASS

Glass options are available in 1" overall insulating units in clear, tinted, reflective, obscure, Low-E, and safety glass. Other specialty glass is available upon request.

## TOLERANCE

Due to unique material properties and manufacturing processes, tolerances on R-15 windows are  $\pm 1/4"$  on full round windows; partial rounds may vary  $\pm 1/8"$  in width and  $\pm 1/4"$  in height.

## Options

### GRIDS

Available in  $5/8"$  standard or  $1-1/16"$  sculptured aluminum pro-files sealed between panes.

### SPACER

Spacer available in a standard clear finish or optional bronze or champagne finish in the airspace of the insulating glass units. PGG Intercept™ warm-edge steel spacer available in certain regions.

Contact your Milgard representative for spacers used in your area.

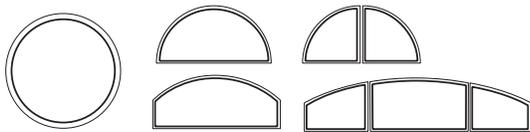
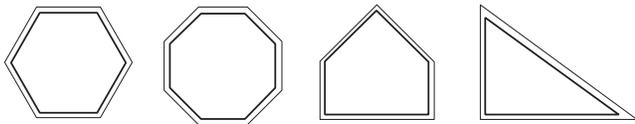
### TEST STANDARDS

Contact your Milgard Representative for specific test data.

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# Picture & Radius Windows

## Configurations



## Minimum/Maximum Sizes

### PICTURE

- Min 1<sup>0</sup>1<sup>0</sup> Max 8<sup>0</sup>6<sup>0</sup>

### PICTURE - OCTAGON

- Min 2<sup>0</sup>2<sup>0</sup> Max 6<sup>0</sup>6<sup>0</sup>

### PICTURE - FULL ROUND

- Min 2<sup>6</sup>2<sup>6</sup> Max 6<sup>0</sup>6<sup>0</sup>

### PICTURE - HALF ROUND

- Min 2<sup>6</sup>1<sup>3</sup> Max 8<sup>0</sup>4<sup>0</sup>

### PICTURE - QUARTER ROUND

- Min 1<sup>3</sup>1<sup>3</sup> Max 6<sup>0</sup>6<sup>0</sup>

## Available Frame Styles

- 1-3/8" Setback
- No Fin (Block Frame)

*NOTE: For engineering approval contact your Milgard representative for any configuration over 40 square feet. Each Milgard Manufacturing plant reserves the right to alter or change sizes and configurations according to location capabilities. Ask your Milgard rep about specialty applications. Windows over 40 square feet shipped open for field glazing. Varies by location.*

*Not all frame styles available at all Milgard locations. Contact your Milgard Representative for more information.*

# Drawings - Quick Links

## Picture Window

35—1-5/16" Nailfin Setback

36—Block Frame

## Radius Window

37—1-5/16" Nailfin Setback

Revit, SketchUp, .PDF and .DWG files can be accessed at [milgard.com/professionals](http://milgard.com/professionals) or clicking here:

[Thermally Improved Aluminum Architectural Library](#)

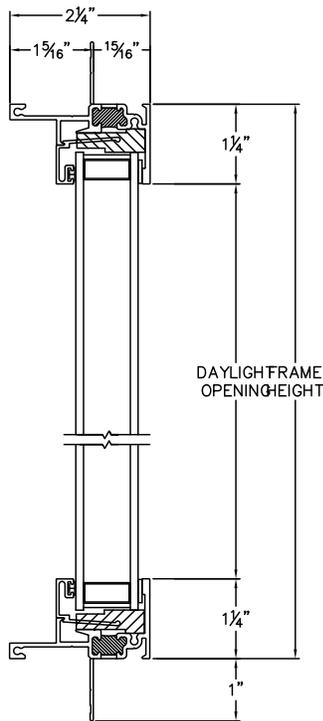
# Thermally Improved Aluminum Picture Window

1-5/16" Nailfin Setback

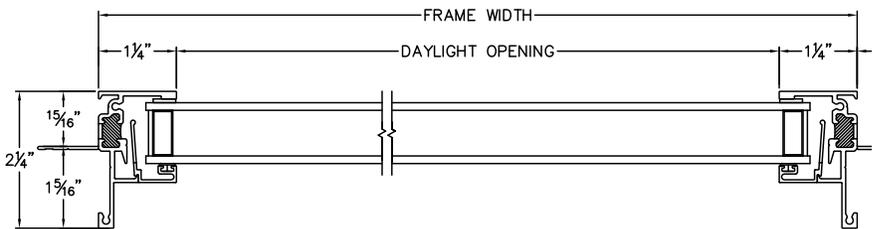
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NTS	Horizontal & Vertical	Aluminum_TIE_920C_PW_1in	Inch

More Technical Documents can be found at [milgard.com/professionals](http://milgard.com/professionals)  
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## PICTURE WINDOW SERIES 920C



HEAD & SILL



JAMBS

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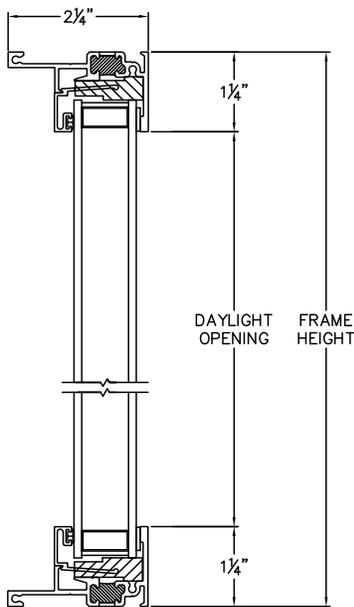
[Go back to Quick Links](#)

Thermally Improved Aluminum  
**Picture Window**  
Block Frame

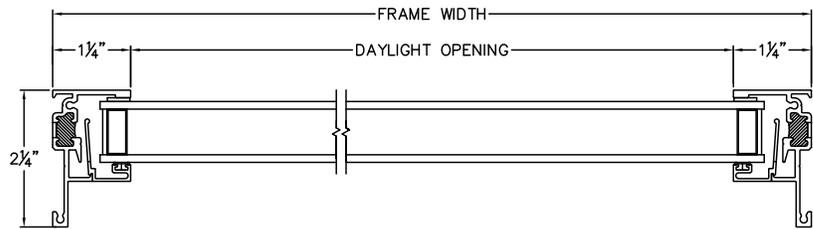
CAD File Scale	View	File Name	Units
NTS	Horizontal & Vertical	Aluminum_TIE_920_PW_Block	Inch

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**PICTURE WINDOW  
SERIES 920**



HEAD & SILL



JAMBS

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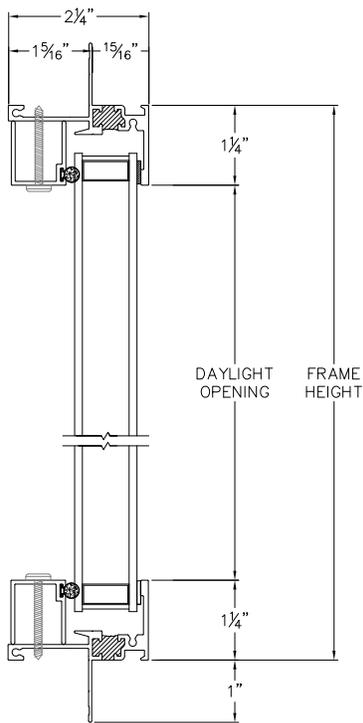
Thermally Improved Aluminum  
**Radius Window**

1-5/16" Nailfin Setback

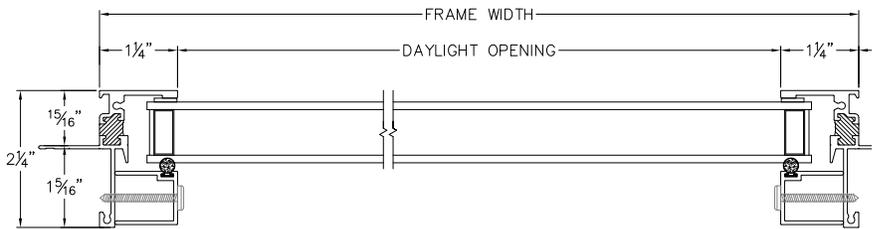
CAD File Scale	View	File Name	Units	Revision
NTS	Horizontal & Vertical	Aluminum_TIE_R-20_PW_1.313in	Inch	8/2016

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**ARCHED PICTURE WINDOW  
SERIES R-20**



HEAD & SILL



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