



STRUCT-U-RAIL SYSTEM

 **LIVERS**
BRONZE

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PRODUCT DESCRIPTION

The Livers Bronze Struct-U-Rail system Offers architects and builders an exceptional solution for structural glass railing. The system features the Livers-Lock mechanical glass locking mechanism and laminated tempered glass with PVB or SGP interlayers. The combination of strength, durability, and aesthetic appeal makes this system an ideal choice for a wide range of architectural applications. With the Livers Bronze commitment to quality and customization, the Struct-U-Rail system provides a reliable and visually striking solution for any project.



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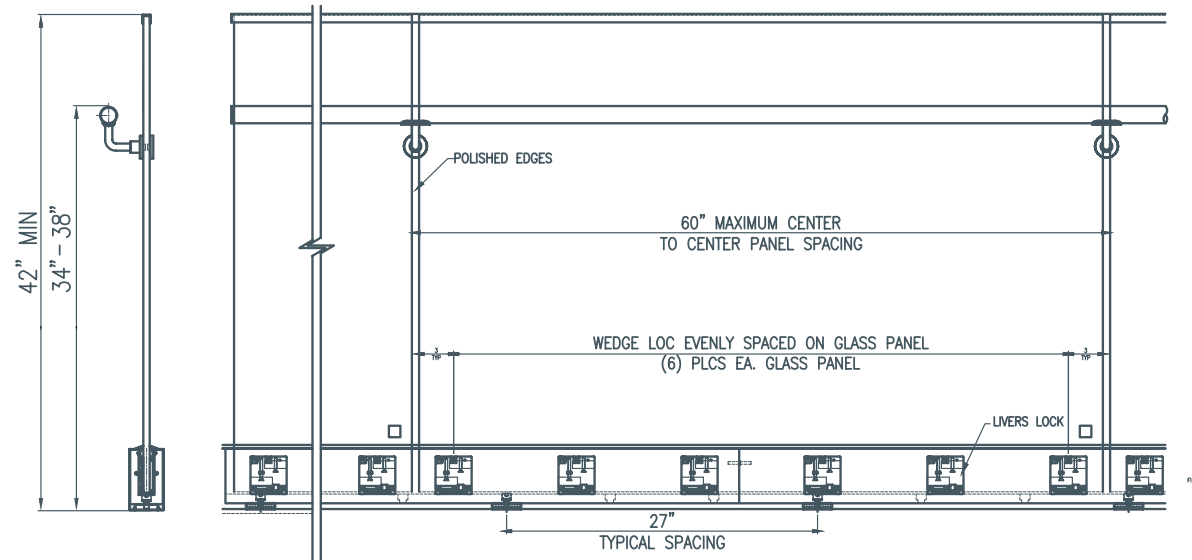
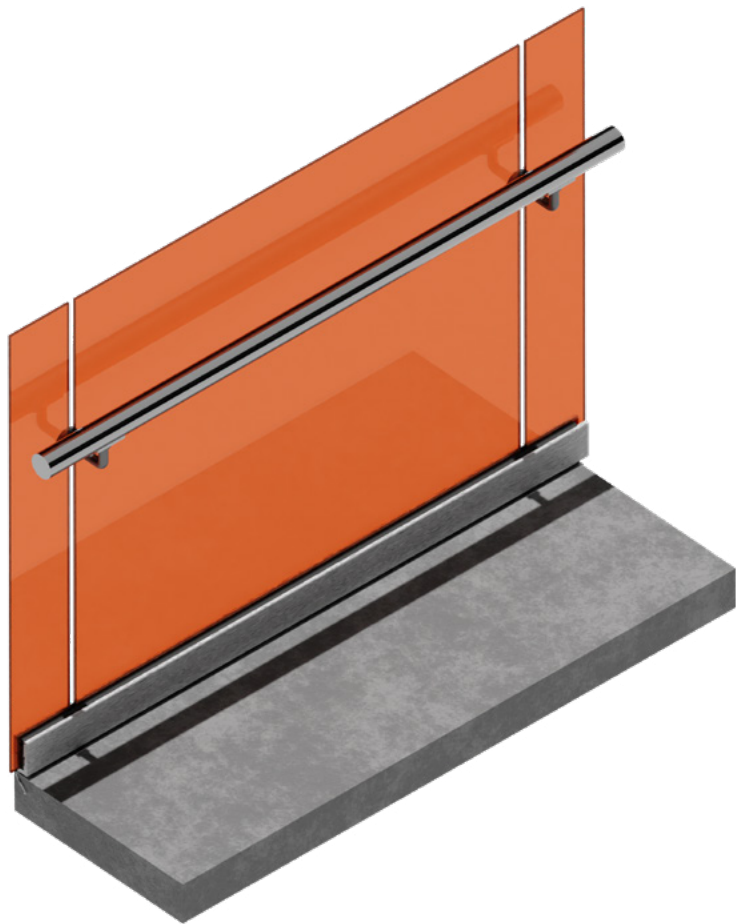


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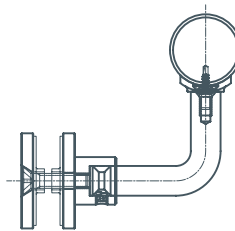


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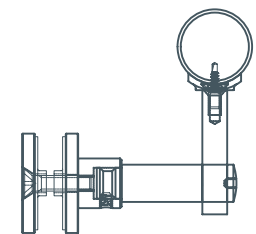
PRODUCT DESCRIPTION



RB1053



RB2000



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Struct-U-Rail

PRODUCT DESCRIPTION

Sterling Heights
Michigan



PRODUCT DESCRIPTION

	MATERIAL	FINISH	SIZE AND SPACING
BASE	Aluminum BASE – mill finish	Mill finished aluminum	2.875" x 4.75" Aluminum Base Mounted to embedded steel, steel stair tubes/channels and concrete
INFILL	Laminated / Tempered Glass thickness as required to meet loading requirements per applicable codes and glass requirements as changed in 2015 IBC and later versions	Clear, Low Iron, Frosted, Frit and Colored Interlayers	9/16" laminated glass, 11/16" laminated glass or 13/16" laminated glass Glass laminated using .060 PVB or .060 SGP interlayer
TOP RAILING	Stainless Steel channel cap	#4 or #6 Satin, #7 Polished, Powder Coated or Blackened	3/4" or 1" Tall cap railing channel
	Bronze channel cap	#4 Satin, #7 Polished, Antique finish, all with clear lacquer	3/4" or 1" Tall cap railing channel
	Round or Square cap railings, Custom Metal cap railings Contact Livers Bronze for these options	All metal finishes are available for these options depending on the material selection	



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PRODUCT DESCRIPTION

	MATERIAL	FINISH	SIZE AND SPACING
TOP RAIL	Hardwood top railings are available in all species of wood.	Sanded only – final staining and finishing is not included	Round, square and complex profiles are available.
HAND RAIL	Stainless Steel Tube	#4 or #6 straight grain, #6 circular grain, #7 polished, Powder Coat, Blackened	1.5" diameter tube, 2" diameter tube 1.5" diameter tube with linear LED lighting 1.5" diameter with Individual LED Puck lighting Square tubes, rectangular tubes, oval tubes are available
	Stainless Steel Bar, Steel Bar	#4 or #6 Satin, #7 Polished, Powder Coated or Blackened	Stainless Steel and Steel Bars in all available sizes
	Bronze	#4 Satin / Lacquered Polished / Lacquered Antique / Lacquered	Bronze round tubes, square tubes, rectangular tubes, bars and traditional shaped bronze extrusions. LED bronze railings are available

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PRODUCT DESCRIPTION

	MATERIAL	FINISH	SIZE AND SPACING
HAND RAIL	Hardwood hand railings are available in all species of wood.	Sanded only – final staining and finishing is not included	Round, square and complex profiles are available.
TRIM	Stainless Steel sheet	#4 or #6 straight grain, #7 polished, Powder Coat, Blackened	Stainless Steel sheet metal trim to cover the aluminum base profile and anchor system. Stainless Steel sheet metal trim custom fabricated to any dimension and layout.
	Bronze	#4 Satin / Lacquered Polished / Lacquered Antique / Lacquered	Bronze sheet metal trim to cover the aluminum base profile and anchor system. Bronze sheet metal trim custom fabricated to any dimension and layout.



Struct-U-Rail

**ANCHORED
TO CONCRETE**

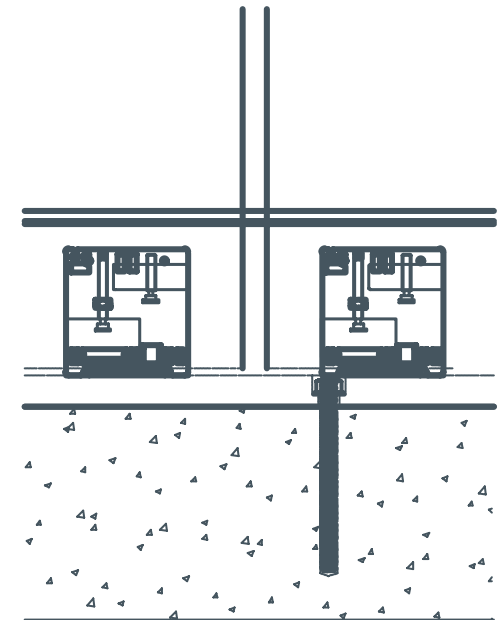
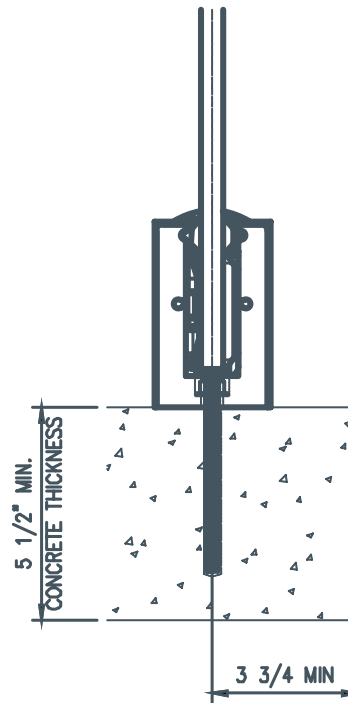
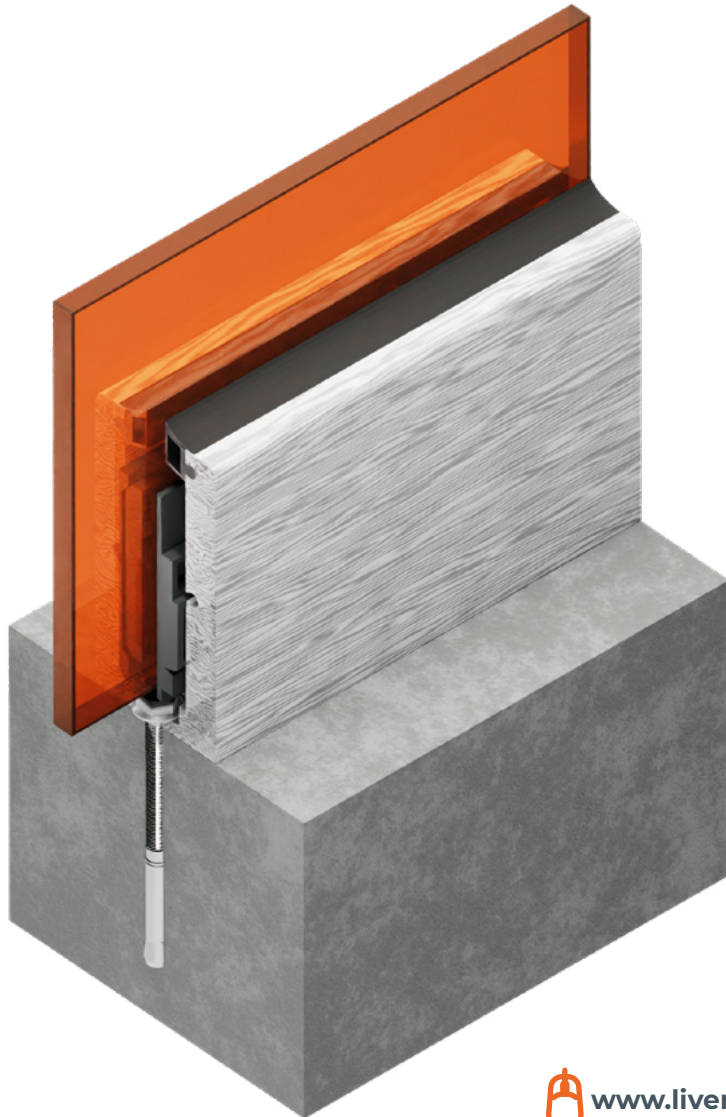
Des Moines, Iowa



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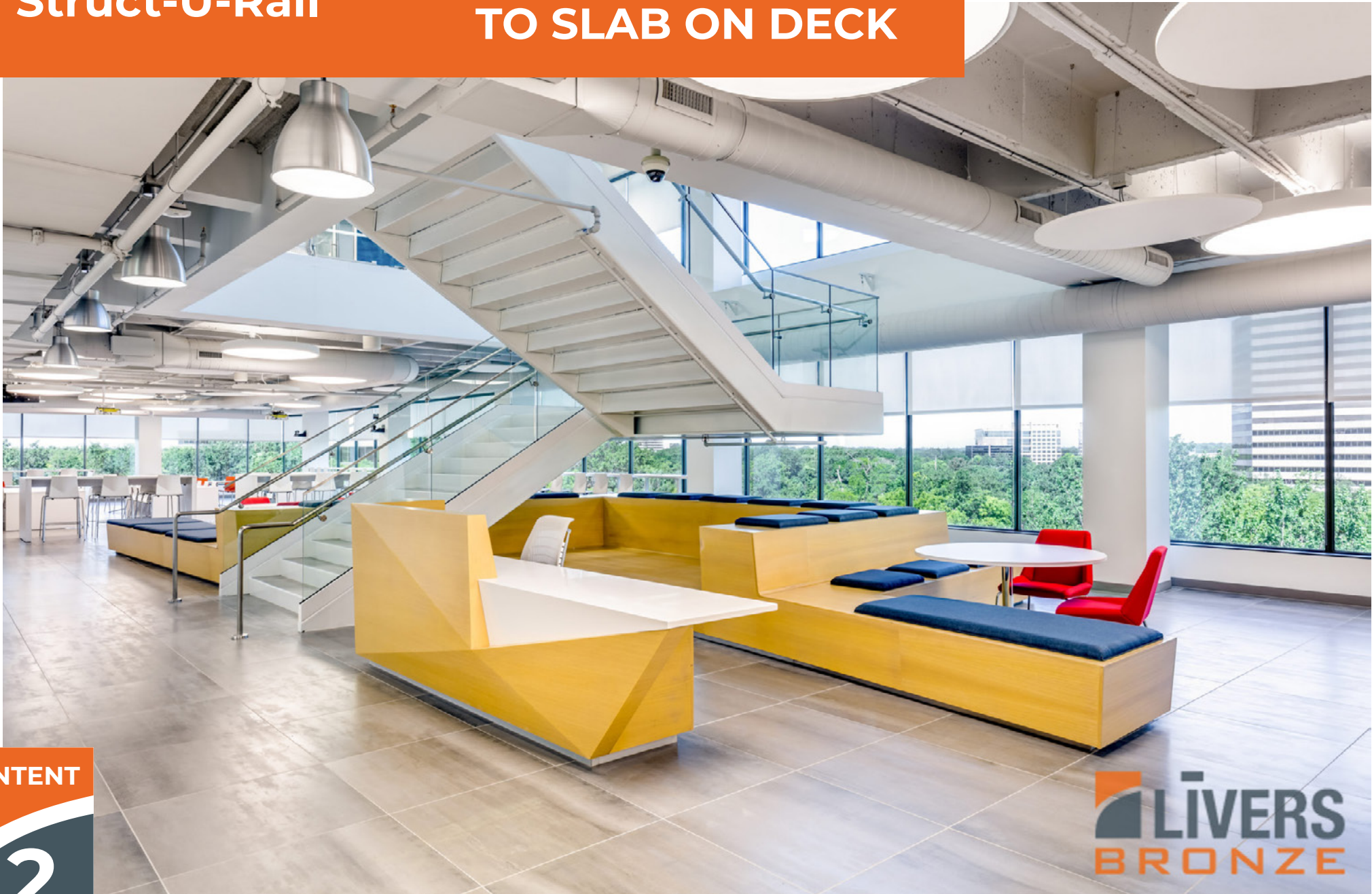
**LIVERS
BRONZE**



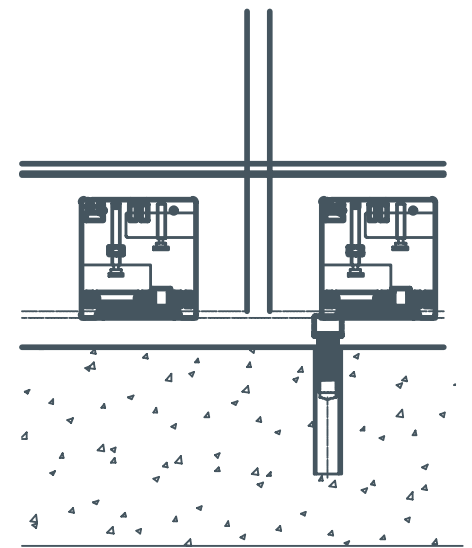
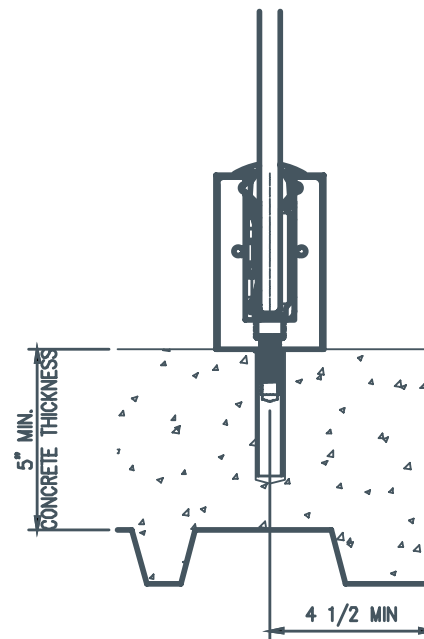
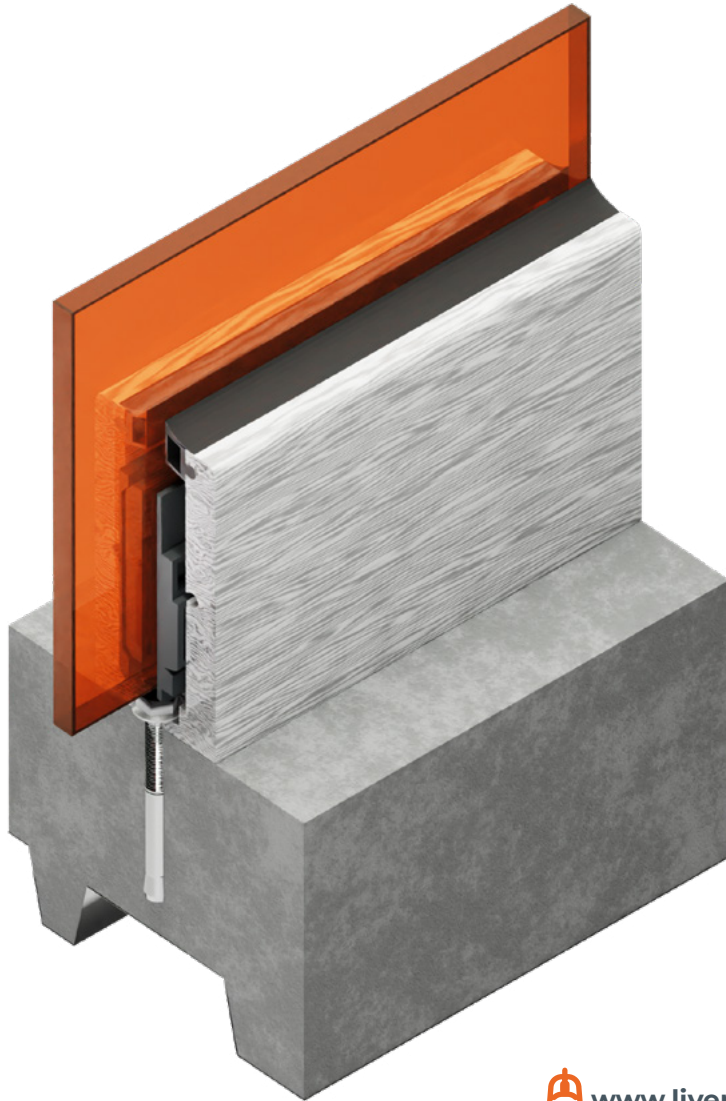
Struct-U-Rail

ANCHORED
TO SLAB ON DECK

Overland Park, KS



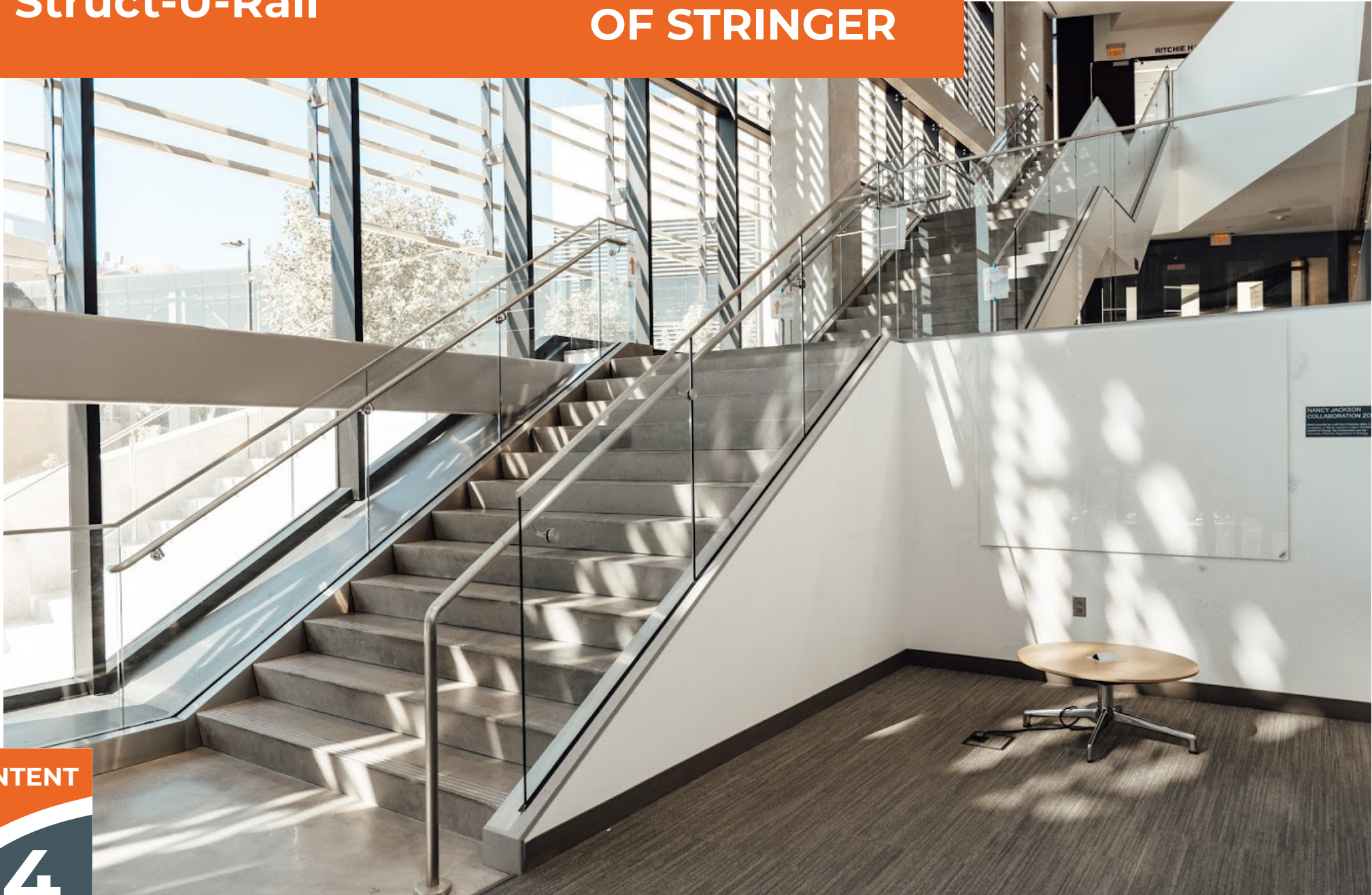
TO SLAB ON DECK



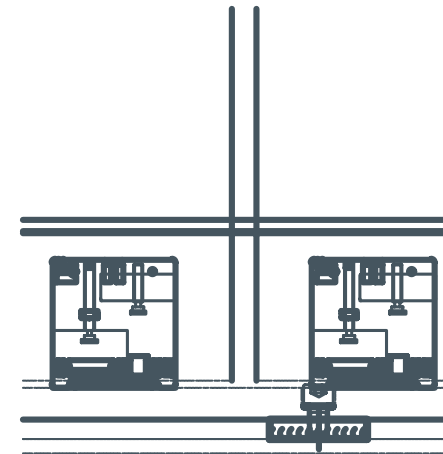
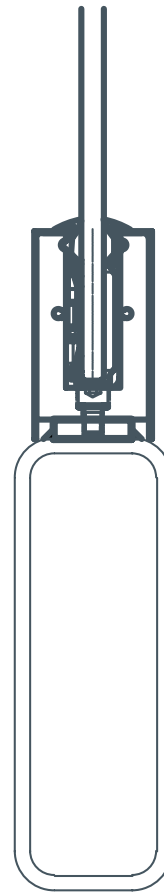
Struct-U-Rail

**WELDED TO TOP
OF STRINGER**

Lawrence, Kansas



TO TOP OF STRINGER

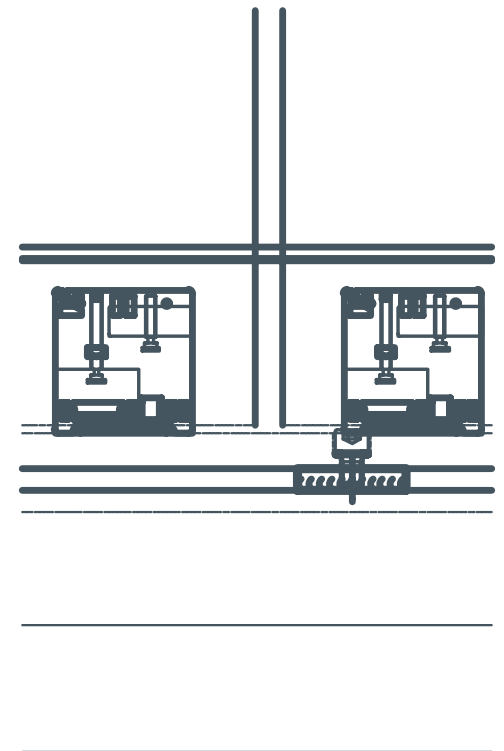
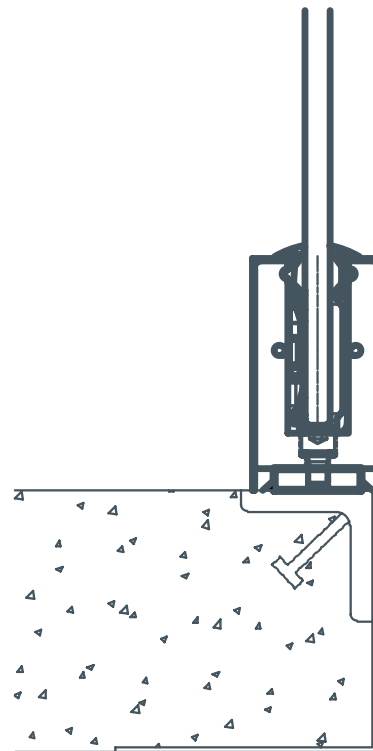
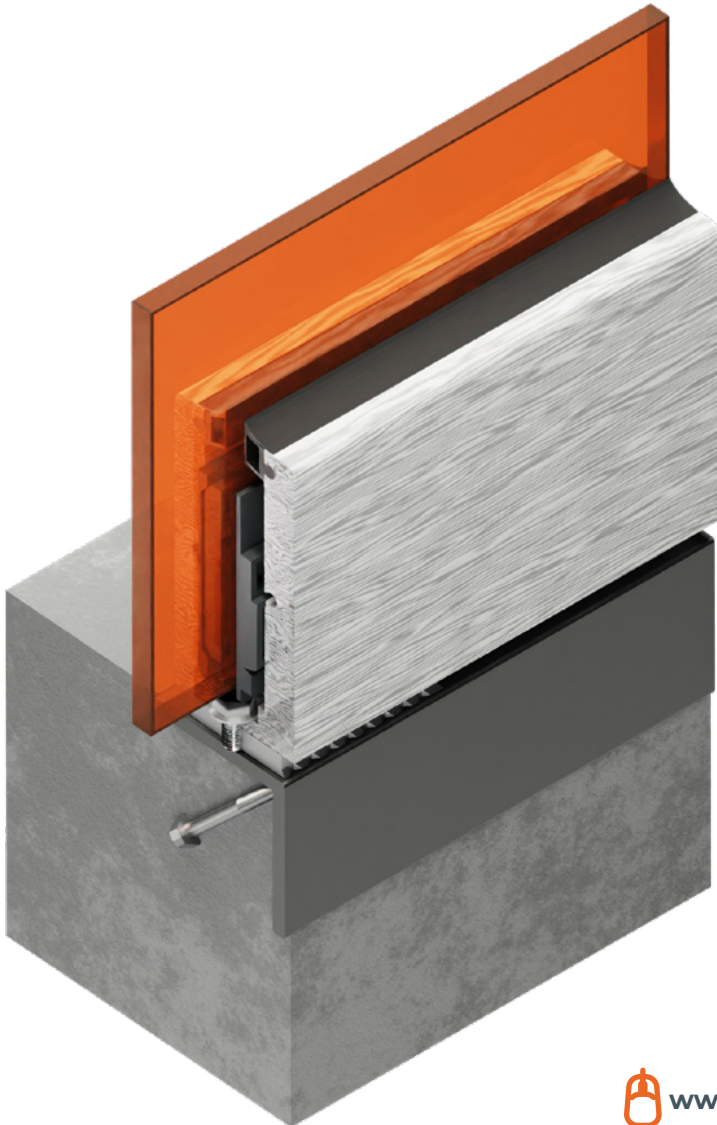


Struct-U-Rail

WELDED TO TOP
OF EMBED ANGLE



TO TOP OF EMBED ANGLE



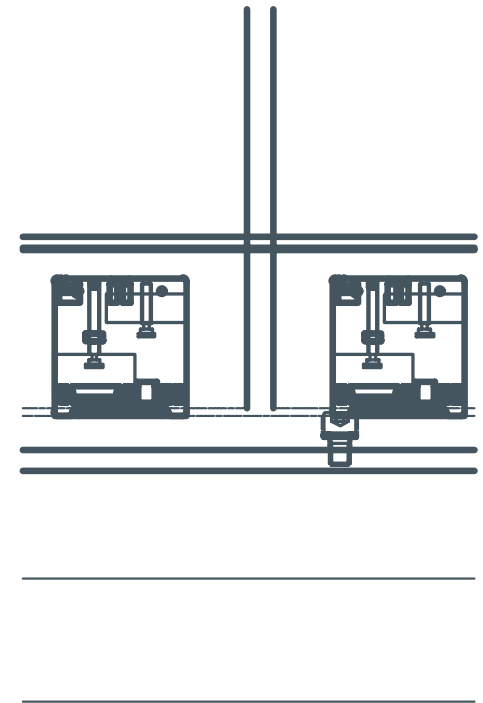
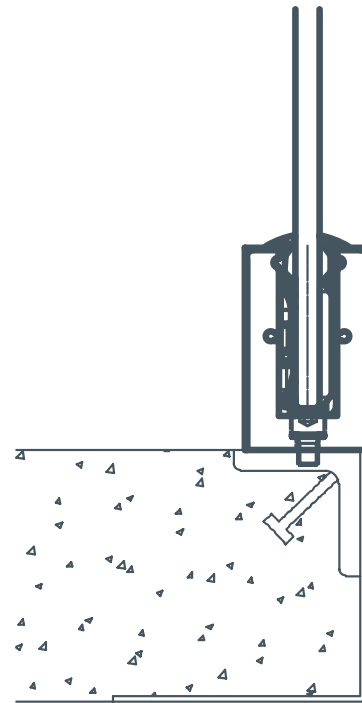
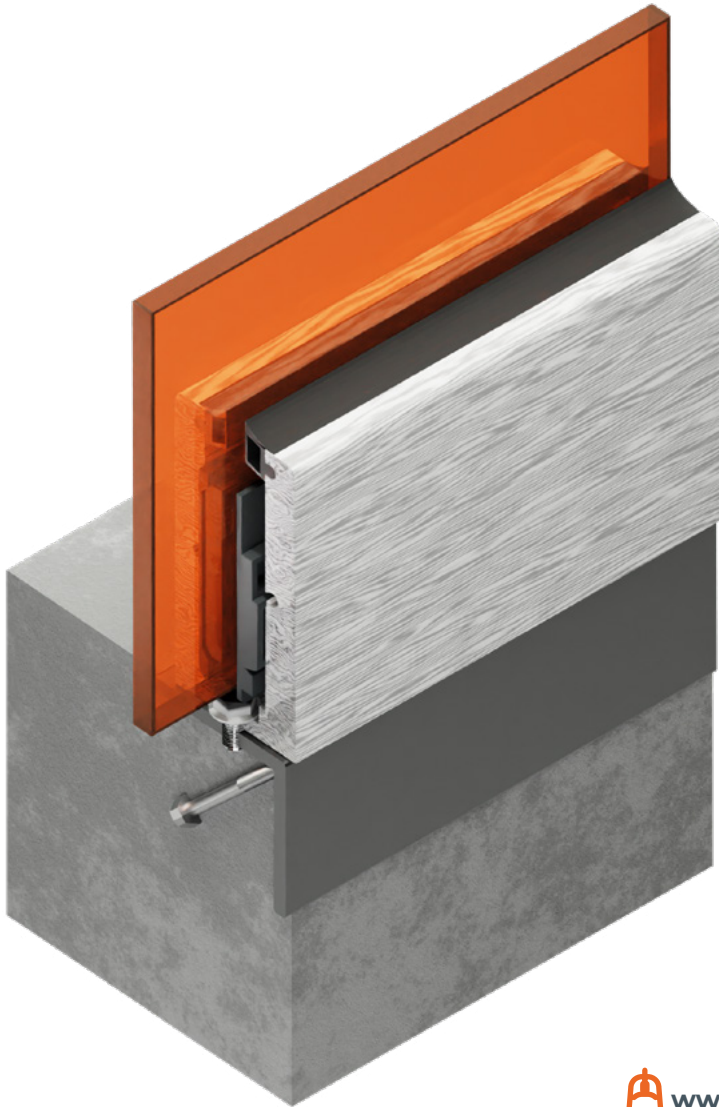
Struct-U-Rail

FIELD DRILL & TAP TO STEEL

Dallas, Texas



& TAP TO STEEL



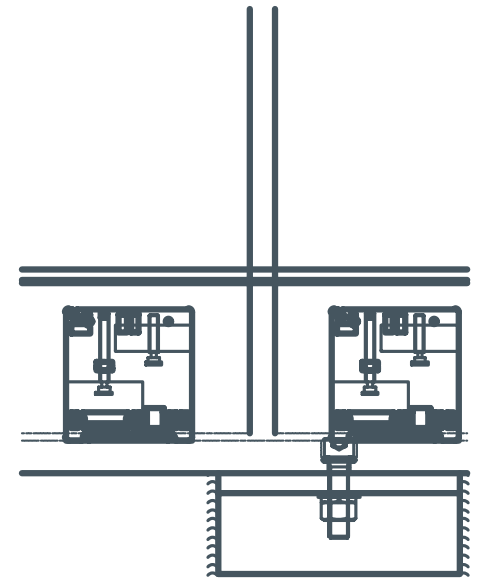
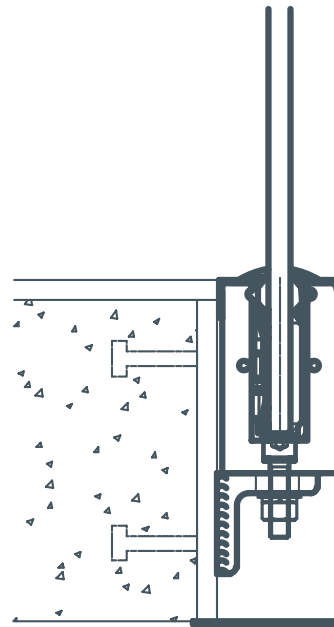
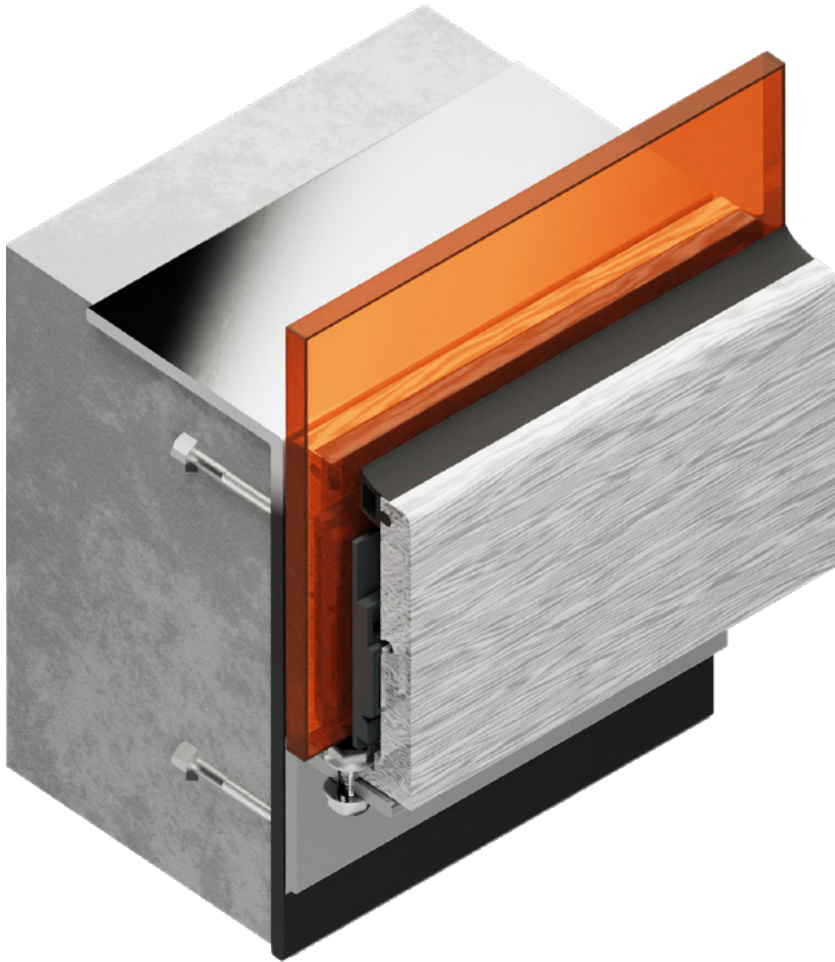
Struct-U-Rail

CLIP WELDED
TO SIDE OF EMBED

Denver CO



TO SIDE OF EMBED



Kansas City, MO

Struct-U-Rail

**WELDED
TO SIDE OF EMBED**

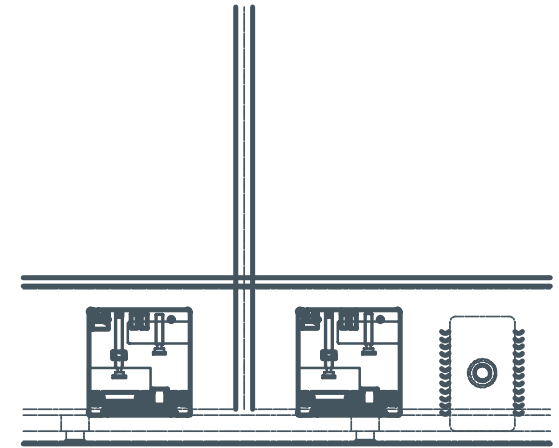
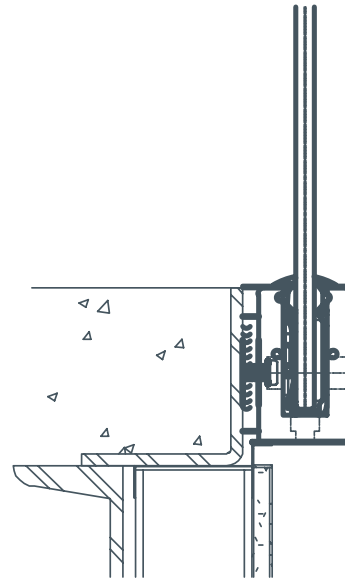
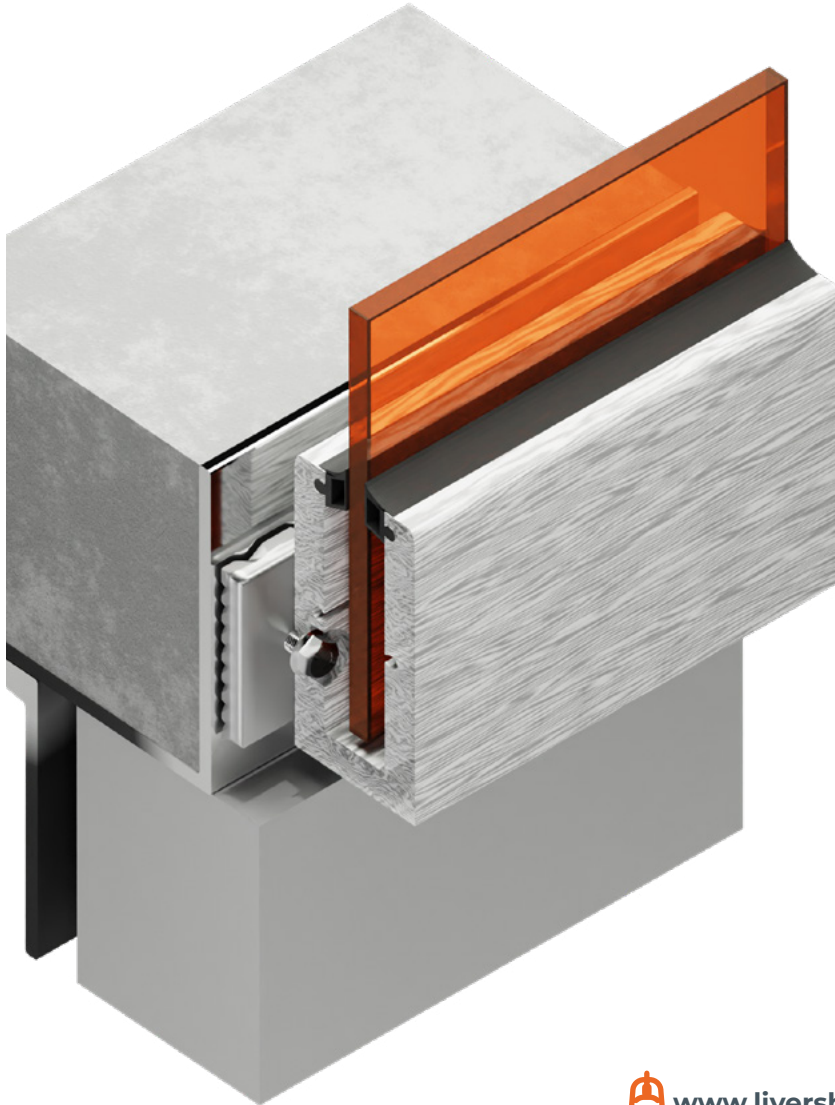


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TO SIDE OF EMBED



PRODUCT DESCRIPTION

LIVERS-LOCK

– Elevating Glass Support in the Struct-U-Rail Railing System

Introducing Livers-Lock, a cutting-edge innovation designed to enhance the Livers Bronze Struct-U-Rail system using laminated glass. The Livers-Lock mechanically clamps the glass into the aluminum base eliminating the use of grout for this product. Spacing is determined by the height of the railing and the thickness of the glass. The product is used for 9/16", 11/16" and 13/16" laminated tempered glass using PVB or SGP interlayers. This product has been tested to exceed current loading requirements for glass supported railing as outlined in the IBC codes relating to glass railings.

With over 50 years of experience in designing and manufacturing glass railings, Livers Bronze brings a wealth of expertise to the table. The Livers-Lock is a result of meticulous research, design, and testing, ensuring that it meets the high standards that Livers Bronze is renowned for.



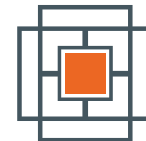
Designed for straight level and sloped conditions



Allows for glass to be adjusted for plumb during the installation process



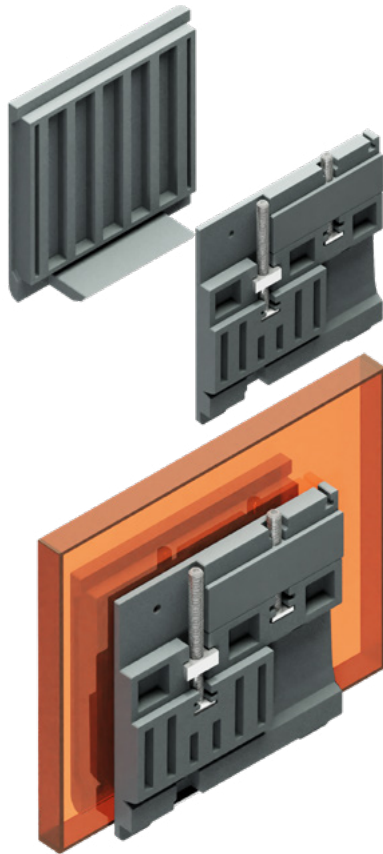
Simple tools required for installation



Single source engineered product



Made in the USA like all Livers Bronze products



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INSTALLATION INSTRUCTIONS

FOR GLASS RAILING WITH ALUMINUM BASE PROFILE USING LIVERS-LOCK

NOTE: These instructions assume that you have already measured and prepared the necessary materials and tools required for the installation. This should include a final set of prepared shop drawings and glass drawings from Livers Bronze. Ensure that you have the appropriate safety equipment and consult local building codes and regulations before proceeding if necessary.

SUGGESTED INSTALLATION EQUIPMENT.



Glass Wedge Tool SUR5110

Torque screwdriver – 11 to 29 in./lbs. SUR5006

Flexible Bit Adaptor SUR5007

Hex Bit for SS Screws – 1/4" Shank, 1/8" Size SUR5008

1. PREPARE THE WORK AREA:

- Clear the installation area of any debris or obstructions.
- Ensure the building structure is complete and ready to install the glass railing.
- Verify that the shipment is complete and that all the components and hardware are in the shipment. Glass should be checked to ensure all glass panels have been received and are marked and free of damage.

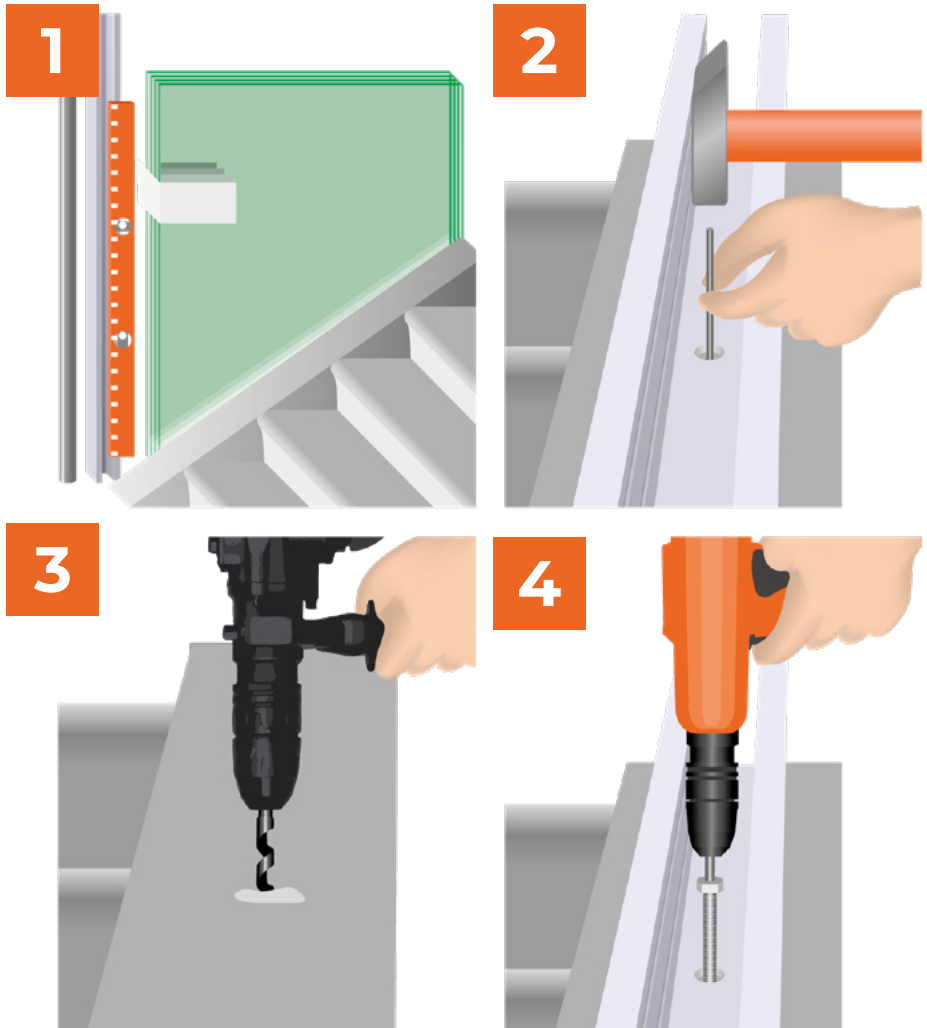


INSTALLATION INSTRUCTIONS

FOR GLASS RAILING WITH ALUMINUM BASE PROFILE USING LIVERS-LOCK

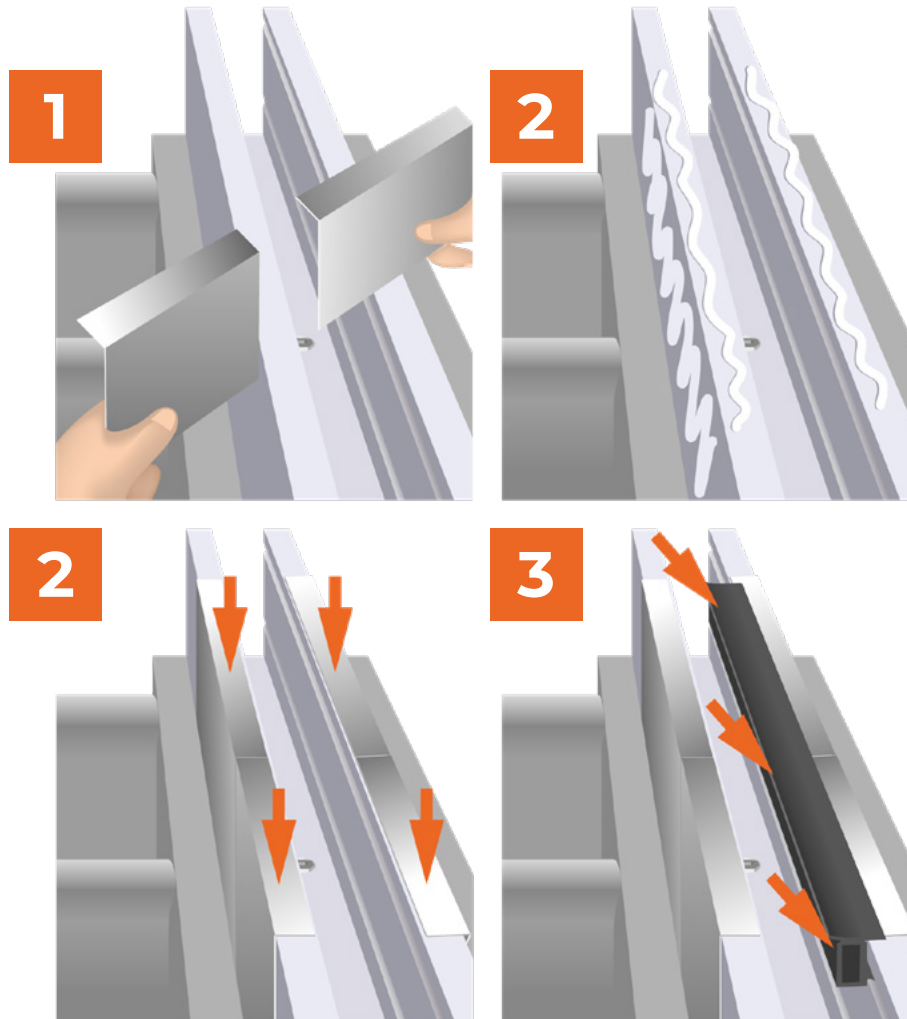
2. ATTACH THE ALUMINUM BASE PROFILE:

- Position the aluminum base profile against the building structure in the location that matches the shop drawings. Use the mounting details and hardware shown on the shop drawings for attaching the aluminum base to the building structure.
- Use a level to ensure the base profile is straight and plumb.
- Mark the location of the mounting holes on the building structure through the pre-drilled holes in the base profile.
- Drill pilot holes into the building structure at the marked locations, using an appropriate drill bit or position the steel mounting blocks and weld them to the structure. Securely attach the base profile to the building structure using appropriate fasteners, such as screws or bolts. Ensure the base profile is firmly secured.



INSTALLATION INSTRUCTIONS

FOR GLASS RAILING WITH ALUMINUM BASE PROFILE USING LIVERS-LOCK



3. INSTALL STAINLESS STEEL TRIM:

- Position the stainless steel trim over the aluminum base profile – using the piece marks on the trim for the correct location.
- Attach the trim securely to the base profile using appropriate glue or hardware.
- Install the outboard neoprene trim into the aluminum base profile.

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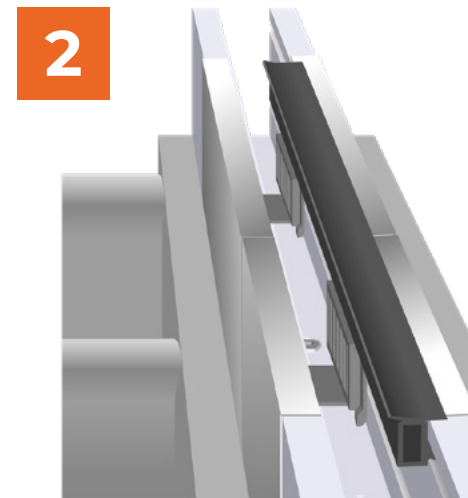
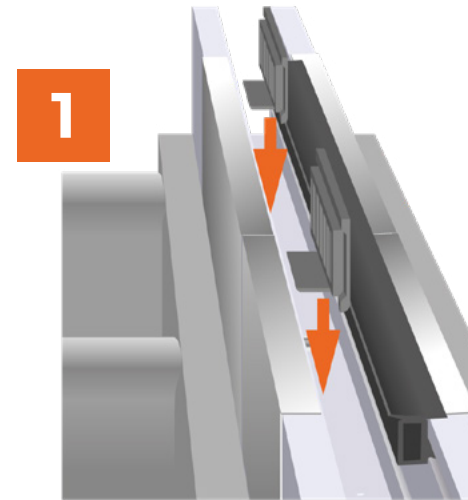
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INSTALLATION INSTRUCTIONS

FOR GLASS RAILING WITH ALUMINUM BASE PROFILE USING LIVERS-LOCK

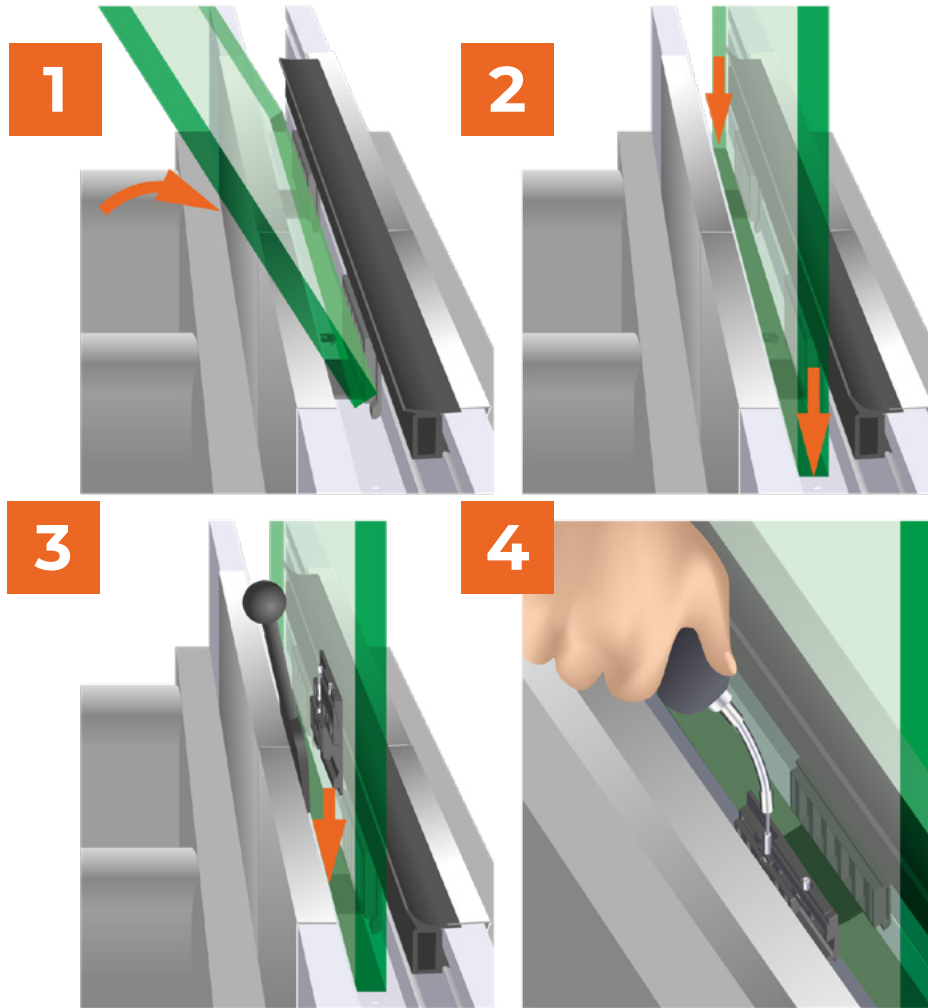
4. INSTALL LIVERS-LOCK DEVICES:

- Slide the mechanical locking devices into the aluminum track on the base profile.
- Position the locking devices at appropriate intervals along the track, for support of the glass panels.
- Use the following part numbers for Livers-Lock as necessary - for sloped conditions remove adhesive tape and attach to the side of the aluminum base profile.
 - SUR5000: Livers-Lock for level conditions using 9/16" and 13/16" laminated glass
 - SUR5000-1: Livers-Lock for sloped conditions using 9/16" and 13/16" laminated glass
 - SUR5000-2: Livers-Lock for level conditions using 11/16" laminated glass
 - SUR5000-3: Livers-Lock for slope conditions using 11/16" laminated glass



INSTALLATION INSTRUCTIONS

FOR GLASS RAILING WITH ALUMINUM BASE PROFILE USING LIVERS-LOCK



5. PLACE THE GLASS PANELS:

- Carefully lift the laminated glass panels into position.
- Insert the edge of each glass panel into the mechanical locking devices inside the aluminum track.
- Apply pressure evenly along the length of the glass panel to ensure a secure fit within the locking devices.
- Repeat this step for each glass panel completing the area where the railing is being installed.
- Using the Livers-Lock devices plumb and adjust the glass as necessary to align the glass top and adjust the vertical joints.
- Attach the top railing to the glass if required.
- Attach the hand railing to the glass if required.
- Using the torque wrench tighten all of the Livers-Lock devices to 11 ft/lbs/ Do not over torque these fasteners as it may cause failure of the device.

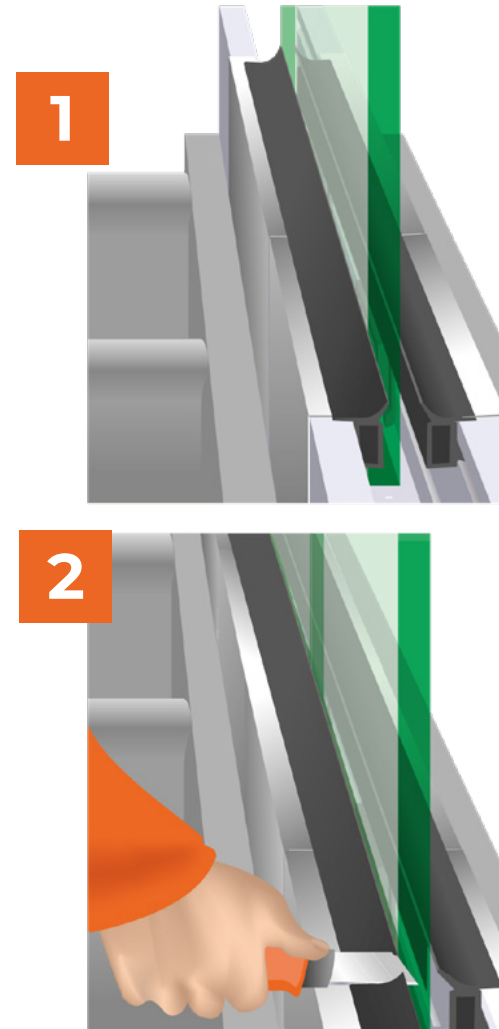


INSTALLATION INSTRUCTIONS

FOR GLASS RAILING WITH ALUMINUM BASE PROFILE USING LIVERS-LOCK

6. APPLY NEOPRENE GASKET:

- Place neoprene gaskets between the glass panels and the aluminum base profile on the inboard side of the aluminum base profile.
- Carefully insert the gaskets into the gaps between the glass and the profile, ensuring a tight seal.
- Trim any excess gasket material if necessary, ensuring a neat and clean finish.
- Caulk the joints between glass panels as required.



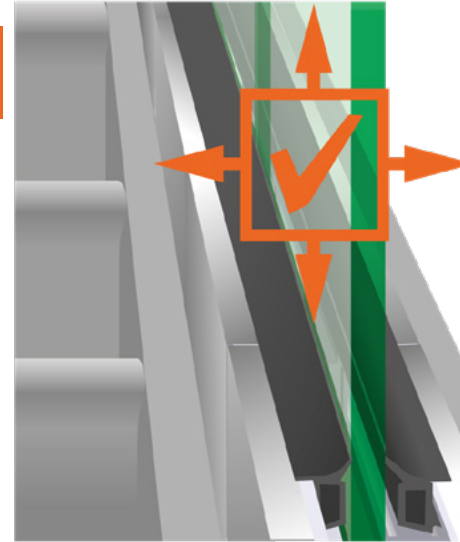
INSTALLATION INSTRUCTIONS

FOR GLASS RAILING WITH ALUMINUM BASE PROFILE USING LIVERS-LOCK

7. FINISHING TOUCHES:

- Inspect the entire glass railing installation for any loose components or imperfections.
- Tighten any fasteners as needed.
- Clean the glass panels, aluminum base profile, and stainless steel trim with an appropriate cleaner to remove any dirt or fingerprints.

1



CONGRATULATIONS!

YOU HAVE SUCCESSFULLY INSTALLED A GLASS RAILING USING AN ALUMINUM BASE PROFILE, MECHANICAL LOCKING DEVICES, STAINLESS STEEL TRIM, AND NEOPRENE GASKETS. ENSURE THAT THE RAILING IS PROPERLY MAINTAINED AND PERIODICALLY INSPECTED TO ENSURE ITS ONGOING SAFETY AND FUNCTIONALITY.





PRODUCT DESCRIPTION

AUXILLARY RAILINGS

Livers Bronze Single Line Railings and Wall Mounted Railings are the obvious companions to any project. Available in all metals and finishes these railings are fabricated to perfectly match the companion railing system. Multiple mounting options for both interior and exterior applications make these railings useful and required throughout your project. To push these railings to another level consider using Livers Bronze ILLUME LED railings – you can customize the layout any way that suits your project requirements. All Livers Bronze railings are made in the USA from the industry leader with over 75 years of experience.

Free standing, Wall mounted, Loop railings, Step railings, Site railings, Single line railings, ramp railings, ADA railings, Cane railings and Double line railings are all available.



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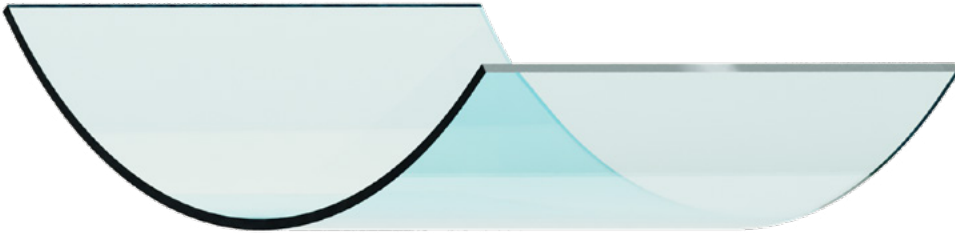
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PRODUCT DESCRIPTION

CURVED LAMINATED GLASS



When using curved tempered laminated glass in the Struct-U-Rail system there are limitations for bending and specific tolerances that can affect design decisions. Navigating these constraints requires a balance between creative vision and engineering precision.

The curved glass, aluminum base and railings all have allowable tolerances and bending limitations that must be taken into consideration in the final design. Additionally, the method used to fix the glass and meet loading requirements is part of this special consideration. Contact Livers Bronze for design assistance when designing curved glass railings.

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PRODUCT DESCRIPTION

LED RAILINGS

What makes LED railings from Livers Bronze truly exceptional is their adaptability to all Livers Bronze railing systems. Whether these railings are freestanding, wall mounted or attached to another Livers Bronze Railing system - the LED railing can be effortlessly integrated. This seamless compatibility ensures that you can maintain design consistency throughout your project while enjoying the benefits of energy-efficient LED lighting. LED railings from Livers Bronze are available in linear form or individual puck lighting along with multiple beam spreads and color temperatures. For more information contact Livers Bronze – the specialist in all things railing.



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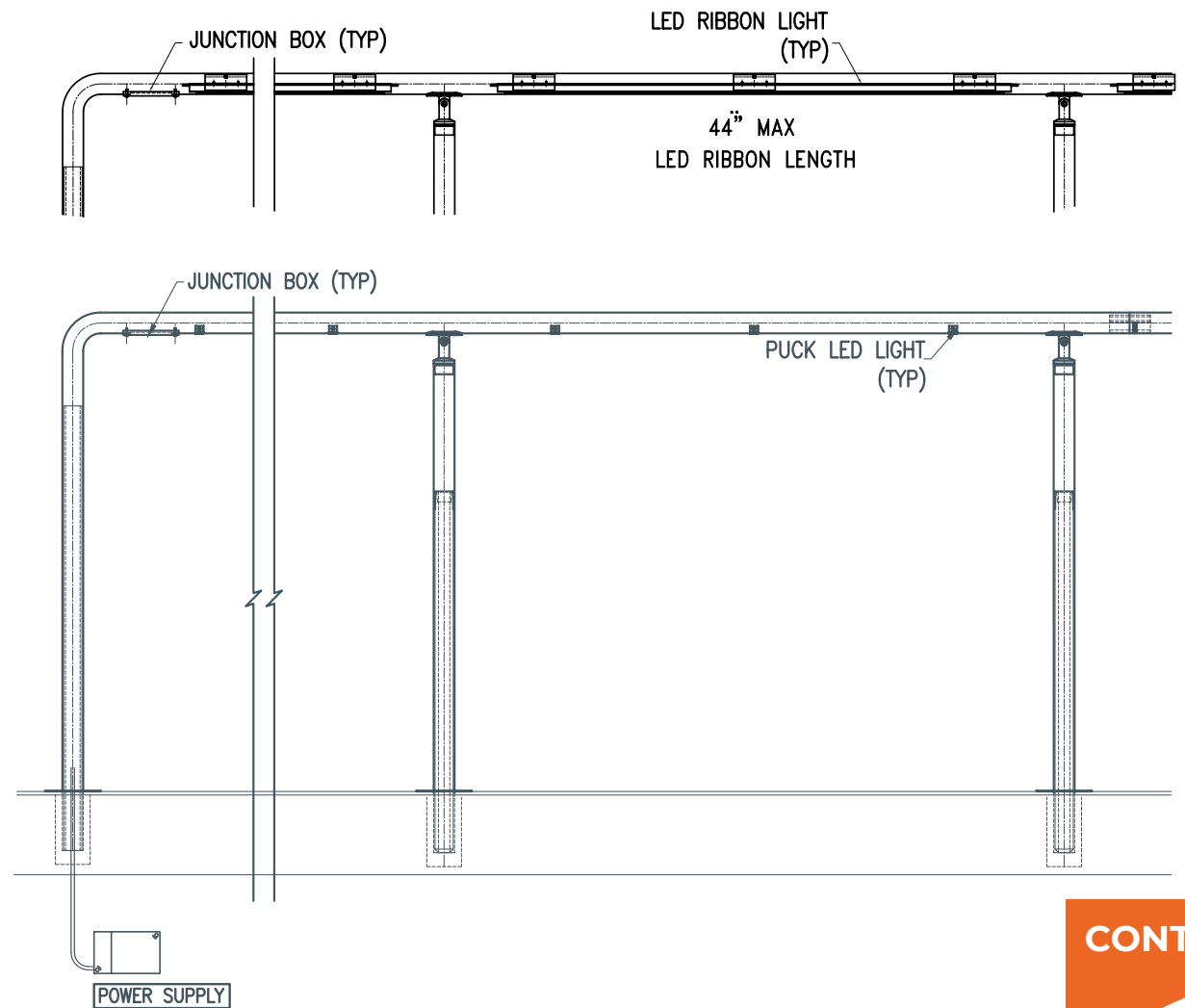
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LED RAILINGS



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