

# TAPER-LOC<sup>®</sup>

Install glass with ease...

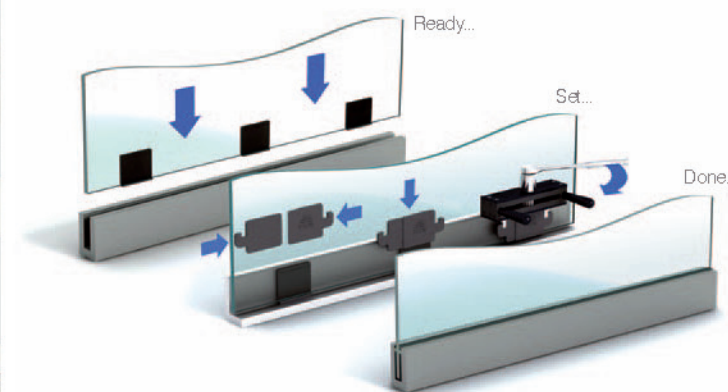
Frameless Glass Balustrade System



# Install glass with ease

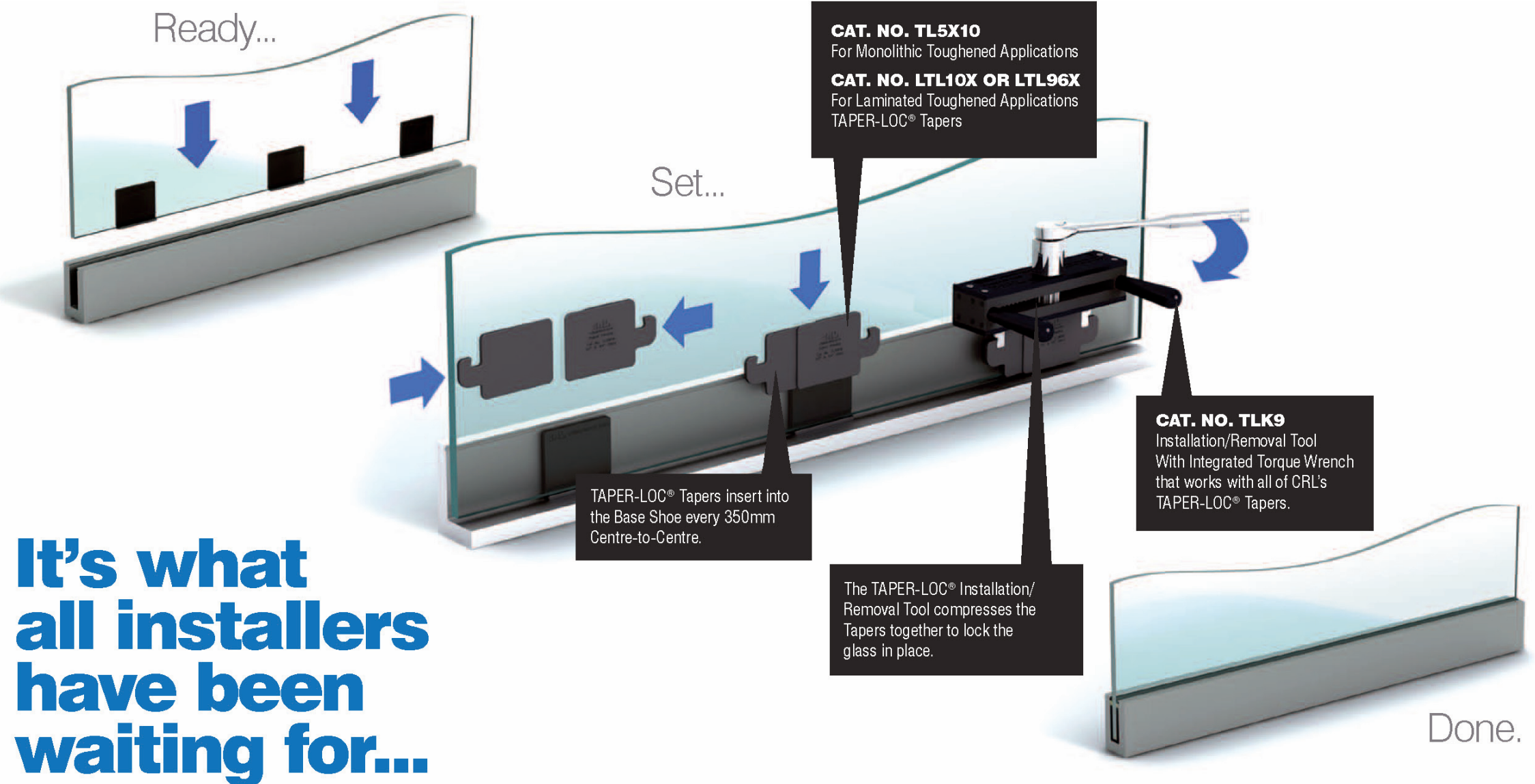
**NDS** proudly presents the innovative Dry Glaze **TAPER-LOC®** Glass Balustrade System designed for quick, easy and secure installations.

- 50% faster to install than traditional alternatives
- For toughened/toughened laminated glass from 12mm-25.52mm thick
- Dry glaze system, no need for cement
- Tested to meet the strictest building code requirements BS6180:1999, BS6399-1:1996 and AbZ
- The product is completely unique because it uses a horizontal TAPER-LOC® design, which allows the system to be adjusted, dismantled and re-set
- Ideal for replacing scratched and broken panels in existing applications



**TAPER-LOC X**  
DRY GLAZE RAILING SYSTEM

# TAPER-LOC®



## It's what all installers have been waiting for...

- Reduces Installation Time by 50%, with no need for wet cement.
- For use with Monolithic and Laminated Toughened Glass
- Easy installation with one compact Installation/Removal Tool
- Designed by CRL for Commercial and Residential Applications

The System includes an Installation/Removal Tool and CRL TAPER-LOC® Tapers for 12mm, 15mm, and 19mm toughened monolithic glass applications, and 13.52mm, 17.52mm, 21.52mm, and 25.52mm laminated toughened glass. Unique because they use a horizontal taper lock design, TAPER-LOC® Tapers are simply installed with CRL's exclusive TLK9 Installation/Removal Tool.

**TAPER-LOC®**  
DRY GLAZE RAILING SYSTEM

## Easy Installation

The process of installing Glass Balustrades is now easier with CRL's new and innovative TAPER-LOC® system.

TAPER-LOC® has a unique design that lets you apply precision tension to lock it in place, securing the glass in your aluminium base shoe without the use of messy cement. Your installation time is reduced by up to 50% while still exceeding code standards.



### STEP 1

Adhere the L-Setting Blocks to the bottom of the glass panel.



### STEP 2

Insert the Taper set half way down into the Base Shoe as shown, opposite the L-Setting Block, and then squeeze the Tapers together finger tight.



### STEP 3


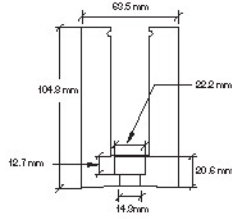
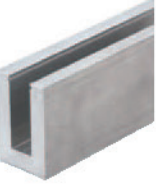
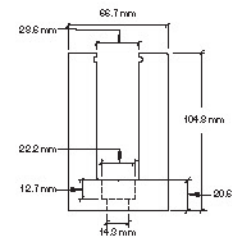

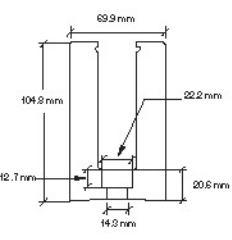

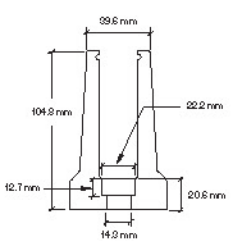

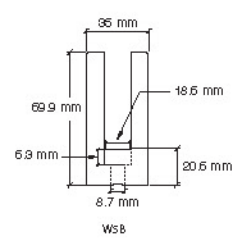
Place Installation/Removal Tool into position onto the Tapers and push them down into the Base Shoe.



### STEP 4

Crank the Torque Wrench until the wrench clicks and breaks for a few degrees, letting you know the Tapers are locked to the correct measured torque.


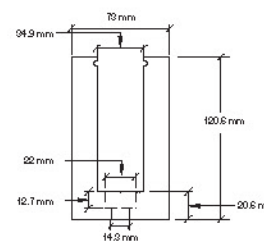

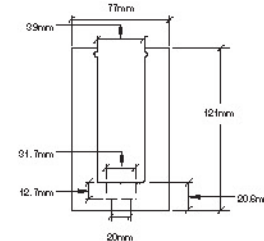

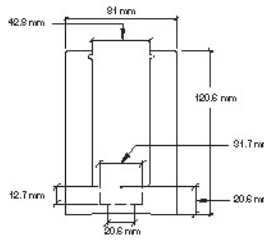

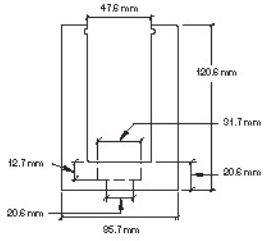
## Monolithic Toughened Glass

Base Shoe	To Suit Glass Thickness	Description	Measurements
	12mm	<b>CRL B5S Series Standard Square Base Shoe</b> <ul style="list-style-type: none"> <li>• Pre-drilled</li> <li>• Works with TL5X10 TAPER-LOC® Taper Sets</li> </ul>	 <p>Stock Length: 3.05m Hole Size: 14.3mm Counter Bore: 22mm Depth: 12.7mm Centre to Centre: 305mm</p>
	15mm	<b>CRL B6S Series Standard Square Base Shoe</b> <ul style="list-style-type: none"> <li>• Pre-drilled</li> <li>• Works with TL5X10 TAPER-LOC® Taper Sets</li> </ul>	 <p>Stock Length: 3m Hole Size: 14.3mm Counter Bore: 22mm Depth: 12.7mm Centre to Centre: 300mm</p>
	19mm	<b>CRL B7S Series Heavy-Duty Square Base Shoe</b> <ul style="list-style-type: none"> <li>• Pre-drilled</li> <li>• Works with TL5X10 TAPER-LOC® Taper Sets</li> </ul>	 <p>Stock Length: 3.05m Hole Size: 14.3mm Counter Bore: 22mm Depth: 12.7mm Centre to Centre: 305mm</p>
	12 to 16mm	<b>CRL B5T Series Tapered Base Shoe</b> <ul style="list-style-type: none"> <li>• Typically used as the Base Channel for Glass Railing Systems requiring a Flush Installation Embedded in Concrete</li> <li>• Works with TL5X10 TAPER-LOC® Taper Sets</li> </ul>	 <p>Stock Length: 3.05m Hole Size: 14.3mm Counter Bore: 22mm Depth: 12.7mm Centre to Centre: 305mm</p>
	10 or 12mm	<b>CRL W5B Series Small Profile Windscreen Base Shoe</b> <ul style="list-style-type: none"> <li>• Pre-drilled</li> <li>• Works with TL3W10 TAPER-LOC® Taper Sets</li> <li>• Ideal for Windscreens and Privacy Partitions</li> </ul> <p><b>NOTE: NOT SUITABLE FOR STRUCTURAL APPLICATIONS</b></p>	 <p>Stock Length: 3.05m Hole Size: 9mm Counter Bore: 18.6mm Depth: 6.3mm Centre to Centre: 305mm</p>

Base Shoe codes end with either 'D' or 'F' to determine Surface or Side Mounted.  
D = Surface Mounted Base Shoe  
F = Side Mounted Base Shoe

NOTE: Undrilled and fascia drilled base shoe available and in stock - contact Technical Sales for details. Minimum order: 1 each. All Base Shoe can be combined for quantity pricing. Must ship common carrier. Stock lengths have a tolerance of plus or minus 19mm.

## Laminated Toughened Glass

Base Shoe	To Suit Glass Thickness	Description	Measurements
	13.52mm	<b>CRL L56S Series Standard Square Base Shoe</b> <ul style="list-style-type: none"> <li>• Pre-drilled</li> <li>• Works with LTL96X TAPER-LOC® Taper Sets</li> </ul>	 <p>Stock Length: 3.05m Hole Size: 14.3mm Counter Bore: 22mm Depth: 12.7mm Centre to Centre: 305mm</p>
	17.52mm	<b>CRL L68S Series Standard Square Base Shoe</b> <ul style="list-style-type: none"> <li>• Pre-drilled</li> <li>• Works with LTL96X TAPER-LOC® Taper Sets</li> </ul>	 <p>Stock Length: 3m Hole Size: 20mm Counter Bore: 31.7mm Depth: 12.7mm Centre to Centre: 305mm</p>
	21.52mm	<b>CRL L21S Series Standard Square Base Shoe</b> <ul style="list-style-type: none"> <li>• Pre-drilled</li> <li>• Works with LTL10X TAPER-LOC® Taper Sets</li> </ul>	 <p>Stock Length: 3m Hole Size: 20.6mm Counter Bore: 31.7mm Depth: 12.7mm Centre to Centre: 300mm</p>
	25.52mm	<b>CRL L25S Series Heavy-Duty Square Base Shoe</b> <ul style="list-style-type: none"> <li>• Pre-drilled</li> <li>• Works with LTL10X TAPER-LOC® Taper Sets</li> </ul>	 <p>Stock Length: 3m Hole Size: 20.6mm Counter Bore: 31.7mm Depth: 12.7mm Centre to Centre: 300mm</p>

Base Shoe codes end with either 'D' or 'F' to determine Surface or Side Mounted.  
D = Surface Mounted Base Shoe  
F = Side Mounted Base Shoe

NOTE: Undrilled and fascia drilled base shoe available and in stock - contact Technical Sales for details. Minimum order: 1 each. All Base Shoe can be combined for quantity pricing. Must ship common carrier. Stock lengths have a tolerance of plus or minus 19mm.

# Taper Sets



## CRL TAPER-LOC® Taper Set for Monolithic Toughened Glass

CRL's TAPER-LOC® Taper Set for 12 to 19mm glass is made up of two Tapers and one L-Setting Block. Tapers are made of high strength reinforced nylon. They expand in thickness when compressed together with the Cat. No. TLK9 Installation/Removal Tool, mechanically locking the glass panel into the base shoe. Not designed for Laminated Glazing.



CAT NO.	Description	Application
<b>TL5X10</b>	For 12, 15 and 19mm monolithic toughened glass For use with CRL's B5S, B5A, B5T, B6S and B7S glass balustrade base shoes	Great for glass balustrade and windscreen applications

NOTE: Minimum order: 10 sets.

## CRL TAPER-LOC® Taper Set for Laminated Toughened Glass

Great for stadiums, apartments and shopping centres, or any areas trying to avoid the hazard of broken glass falling to lower levels. CRL's TAPER-LOC® Laminated Taper Set is made up of four Tapers and one L-Setting Block. Tapers are made of high strength reinforced nylon. They expand in thickness when compressed together with the Cat. No. TLK9 Installation/Removal Tool, mechanically locking the glass panel into the base shoe.



CAT NO.	Description	Application
<b>LTL10X</b>	LTL10X designed for 21.52mm laminated toughened glass (10mm x 1.52mm x 10mm) and 25.52mm laminated toughened glass (12mm x 1.52mm x 12mm)	For use with CRL's laminated toughened glass balustrade base shoes only
<b>LTL96X</b>	LTL96X designed for 13.52mm laminated toughened glass (6mm x 1.52mm x 6mm) and 17.52mm laminated toughened glass (8mm x 1.52mm x 8mm)	For use with CRL's laminated toughened glass balustrade base shoes only

NOTE: Minimum order: 10 sets.

## CRL TAPER-LOC® Taper Set for Monolithic Toughened Glass (Windscreens Only)

CRL's TAPER-LOC® Taper Set for 10mm glass is made up of two Tapers and one L-Setting Block. Tapers are made of high strength reinforced nylon. They expand in thickness when compressed together with the Cat. No. TLK9 Installation/Removal Tool, mechanically locking the glass panel into the base shoe. Not designed for Balustrade Applications or Laminated Glazing.



CAT NO.	Description	Application
<b>TL3W10</b>	For 10mm monolithic toughened glass 914mm recommended maximum glass height	Great for glass windscreen applications <b>Not suitable for balustrade applications</b>

NOTE: Minimum order: 10 sets.

# System Tools



## CRL TAPER-LOC® Installation / Removal Tool Kit

The Installation/Removal Tool is used for tightening TAPER-LOC® Tapers in the channel of the base shoe. The tool has an Integrated Torque Wrench that applies the precise lock-up force necessary to set the glass panels. Simply set in place and turn the wrench until a clicking sound is heard. This assures the Tapers have been locked together. It can also remove Tapers when glass panels need to be reset or replaced.

- KIT CONTENTS:**
- 1 x Integrated Torque Wrench
  - 1 x Glass Balustrade Setting Tools for Monolithic and Laminated Glass
  - 1 x pair of Glass Setting Roller Blocks
  - 1 x Standard and Recessed Blades
  - 1 x Instructions
  - 1 x Moulded Carrying Case



CAT NO.	Description	Application
<b>TLK9</b>	One tool supports all of CRL's different TAPER-LOC® systems Works with monolithic toughened and laminated toughened glazing types	Easily allows you to remove, adjust, or replace glass panels in seconds Complete with a torque wrench designed for precise tension

NOTE: Minimum order: 1 each.

## CRL PAL Plumb / Angle / Level Indicator

The PAL Plumb/Angle/Level Locator Kit is designed to assist you with level and plumb installations of base shoe for balustrade and windscreen installations. This innovative tool levels the base shoe in both the vertical and horizontal orientations. Perfect for use with all TAPER-LOC® installations.



CAT NO.	Description
<b>PAL1K</b>	Great for levelling the base shoe for balustrade and windscreen applications Features include a digital angle, plumb finder, and level locator display

NOTE: Minimum order: 1 each.

# Base Shoes

Glass Thickness:	CRL System:	Fixing To Steel:	Fixing To Concrete:	Typical Installations:
<b>Fixed To Steel Base Mounted</b>				
12mm	B5S Series	M12 S/S Socket Head Cap Screw	M8 x 95mm Hilti Expansion Anchor	Residential including stairs and landings but excluding external balconies and edges of roofs
15mm	B6S Series	M12 S/S Socket Head Cap Screw	M8 x 95mm Hilti Expansion Anchor	Residential external balconies, edges of roofs, stairs and landings
19mm	B7S Series	M12 S/S Socket Head Cap Screw	M8 x 95mm Hilti Expansion Anchor	Residential external balconies, edges of roofs, stairs and landings
17.52mm	L68S Series	M14 S/S Hex Head Screw	M12 x 156mm Hilti Expansion Anchor	Commercial areas susceptible to overcrowding
21.52mm	L21S Series	M14 S/S Hex Head Screw	M12 x 156mm Hilti Expansion Anchor	Commercial areas susceptible to overcrowding
25.52mm	L25S Series	M14 S/S Hex Head Screw	M12 x 156mm Hilti Expansion Anchor	Commercial areas susceptible to overcrowding
<b>Fixed To Concrete Base Mounted</b>				
12mm	B5S Series	M12 S/S Socket Head Cap Screw	M8 x 95mm Hilti Expansion Anchor	Residential including stairs and landings but excluding external balconies and edges of roofs
15mm	B6S Series	M12 S/S Socket Head Cap Screw	M8 x 95mm Hilti Expansion Anchor	Residential external balconies, edges of roofs, stairs and landings
19mm	B7S Series	M12 S/S Socket Head Cap Screw	M8 x 95mm Hilti Expansion Anchor	Residential external balconies, edges of roofs, stairs and landings
17.52mm	L68S Series	M14 S/S Hex Head Screw	M12 x 156mm Hilti Expansion Anchor	Commercial areas susceptible to overcrowding
21.52mm	L21S Series	M14 S/S Hex Head Screw	M12 x 156mm Hilti Expansion Anchor	Commercial areas susceptible to overcrowding
25.52mm	L25S Series	M14 S/S Hex Head Screw	M12 x 156mm Hilti Expansion Anchor	Commercial areas susceptible to overcrowding
<b>Fixed To Steel Side Mounted</b>				
12mm	B5S Series	M12 S/S Socket Head Cap Screw	M8 x 95mm Hilti Expansion Anchor	Residential including stairs and landings but excluding external balconies and edges of roofs
15mm	B6S Series	M12 S/S Socket Head Cap Screw	M8 x 95mm Hilti Expansion Anchor	Residential external balconies, edges of roofs, stairs and landings
19mm	B7S Series	M12 S/S Socket Head Cap Screw	M8 x 95mm Hilti Expansion Anchor	Residential external balconies, edges of roofs, stairs and landings
17.52mm	L68S Series	M14 S/S Hex Head Screw	M12 x 156mm Hilti Expansion Anchor	Commercial areas susceptible to overcrowding
21.52mm	L21S Series	M14 S/S Hex Head Screw	M12 x 156mm Hilti Expansion Anchor	Commercial areas susceptible to overcrowding
25.52mm	L25S Series	M14 S/S Hex Head Screw	M12 x 156mm Hilti Expansion Anchor	Commercial areas susceptible to overcrowding
<b>Fixed To Concrete Side Mounted</b>				
12mm	B5S Series	M12 S/S Socket Head Cap Screw	M8 x 95mm Hilti Expansion Anchor	Residential including stairs and landings but excluding external balconies and edges of roofs
15mm	B6S Series	M12 S/S Socket Head Cap Screw	M8 x 95mm Hilti Expansion Anchor	Residential external balconies, edges of roofs, stairs and landings
19mm	B7S Series	M12 S/S Socket Head Cap Screw	M8 x 95mm Hilti Expansion Anchor	Residential external balconies, edges of roofs, stairs and landings
17.52mm	L68S Series	M14 S/S Hex Head Screw	M12 x 156mm Hilti Expansion Anchor	Commercial areas susceptible to overcrowding
21.52mm	L21S Series	M14 S/S Hex Head Screw	M12 x 156mm Hilti Expansion Anchor	Commercial areas susceptible to overcrowding
25.52mm	L25S Series	M14 S/S Hex Head Screw	M12 x 156mm Hilti Expansion Anchor	Commercial areas susceptible to overcrowding

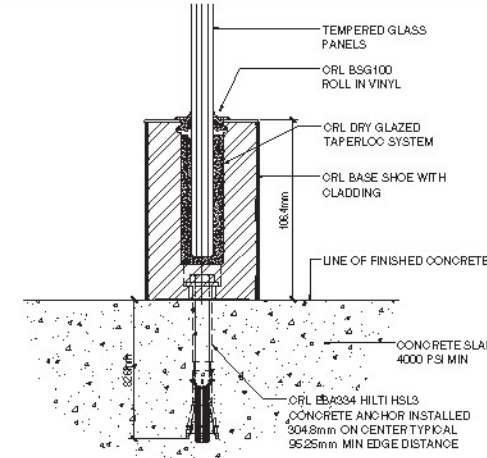


All the data included within this table is dependant on correct installation of the base shoe plus actual glass strengths.  
Based on 1100mm Balustrade Heights anchored 300mm on center to concrete or steel substrates.

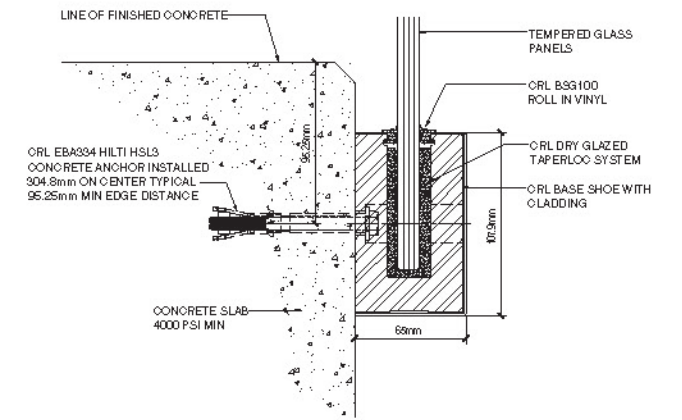
# Typical Installations



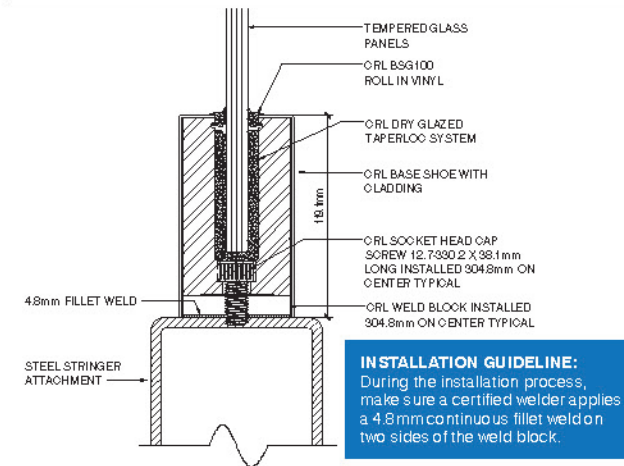
Concrete Substrate Typical Surface Mount Detail



Concrete Substrate Typical Fascia Mount Detail

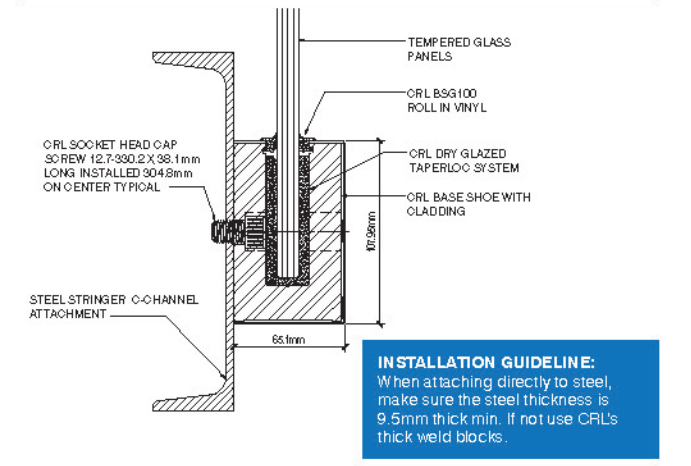


Steel Tube Substrate Typical Surface Mount Detail



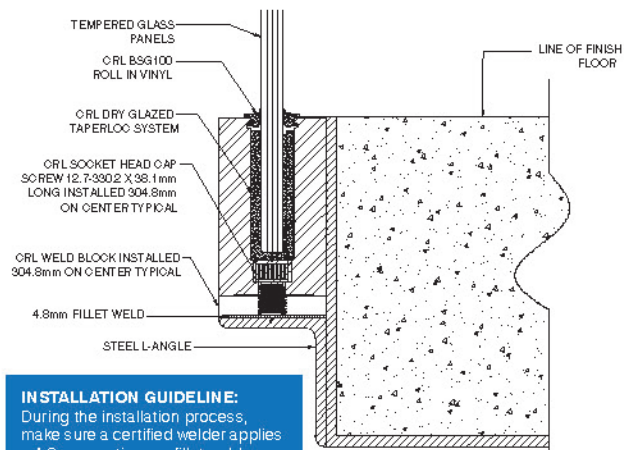
**INSTALLATION GUIDELINE:**  
During the installation process, make sure a certified welder applies a 4.8mm continuous fillet weld on two sides of the weld block.

Steel Tube Substrate Typical Fascia Mount Detail



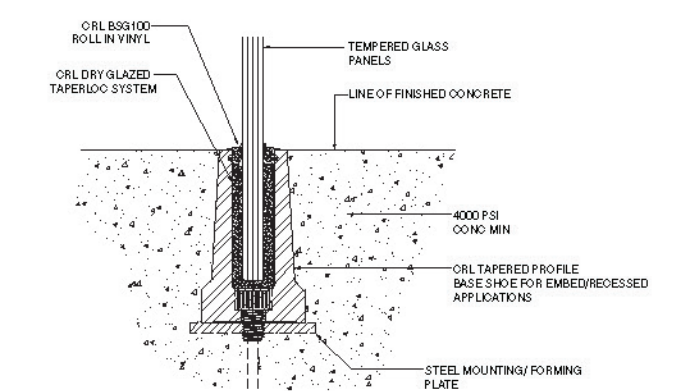
**INSTALLATION GUIDELINE:**  
When attaching directly to steel, make sure the steel thickness is 9.5mm thick min. If not use CRL's thick weld blocks.

Steel L-Angle Substrate Typical Surface Mount Detail



**INSTALLATION GUIDELINE:**  
During the installation process, make sure a certified welder applies a 4.8mm continuous fillet weld on two sides of the weld block.

Concrete Substrate Typical Concrete Inset Detail



**INSTALLATION GUIDELINE:**  
Anchor spacing will depend on mounting substrate and region of project.

**Aluminium Base Shoe for Toughened and Laminated Toughened Glass**

- Typically used as the base channel for glass balustrade systems or windscreens
- Drilled and counter bored, or we will custom drill to your specifications
- Custom cladding and end caps

# Cap Rails

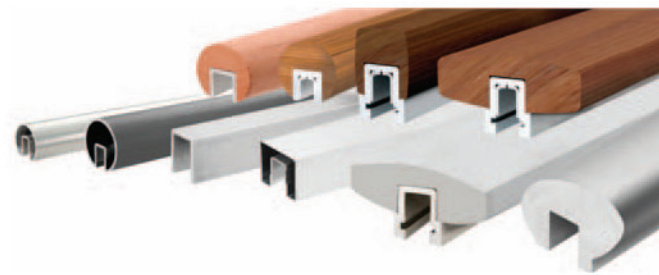


Cap Rails are available to suit a huge range of Glass Thicknesses, please call CRL.

## A Selection of Cap Rails available from CRL

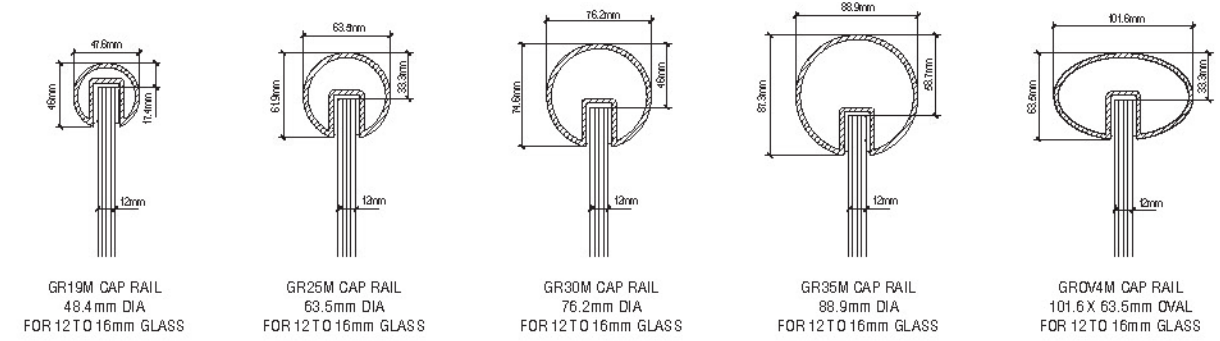
- Premium cap rails are manufactured by bump-forming to ensure reduced spring back
- A variety of sizes and finishes available to accommodate monolithic and laminated toughened glass
- A full line of accessories to complete the installation

CRL Balustrade Cap Rails are our latest innovation to set a standard for quality and cutting edge technical resources. We offer a Bump-Formed Cap rail formed around a radius die, ensuring reduced spring back of the finished rail. CRL Premium Cap Rails are fabricated from 16 and 18 gauge material, depending on the diameter. CRL Extruded Aluminium Cap rails have a standard wall thickness of 3.2mm.

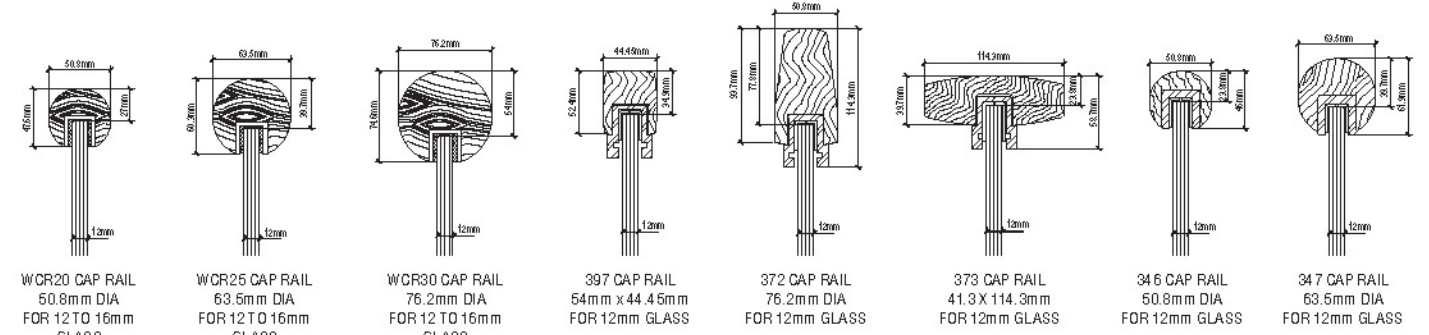


CRL Cap Rails are available in diameters ranging from 38.1 to 101.6mm, as well as oval and square profiles in a wide range of architectural finishes. A full line of accessories to complete the installation are also available.

### POPULAR ALUMINIUM SHAPES



### POPULAR WOOD SHAPES



### POPULAR STAINLESS STEEL SHAPES

