

## LED Step Lighting - Installation Guidelines

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## LED Step Lighting - Installation Guidelines

### Introduction

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This installation guide provides information about how to install each different type of Gradus LED Step Lighting profile and LED Lighting system, including adhesive fixing.

It is important to locate the type of LED System that will be installed with the Step Lighting and match it to the relevant section below. Please take note and adhere to the input and output voltage ranges, frequency and power rating on the Power Supplies.

More than one installation method may be applicable to certain profiles or in instances where more than one type of LED System will be used – in this instance it is the installer's responsibility to follow all applicable installation methods. A qualified and competent electrician must install the Power Supply Unit and install a cable to the junction box to allow the LED Step Lighting to be connected.

To ensure future repairs or maintenance can be completed, consider accessibility to LED Lighting components.

Failure to adhere to the correct installation method provided may void the product's warranty.

## LED Step Lighting - Installation Guidelines

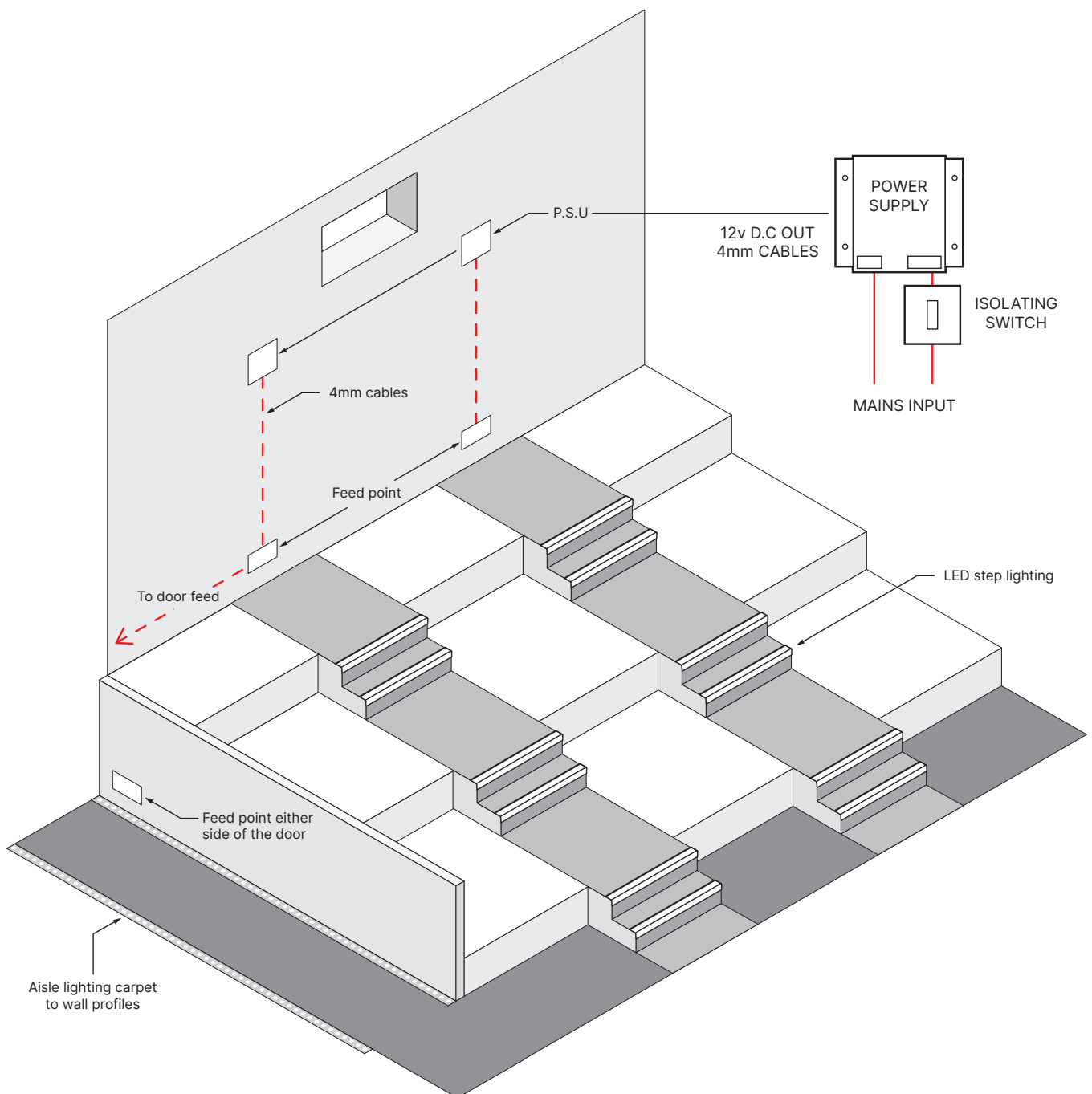
### Typical Wiring Diagram

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The below diagram shows an example of how to power and wire an auditorium.

Two Power Supply Units (PSU's) are installed in this auditorium. Depending on the loading, a Power Supply Unit can typically power one full flight of steps in an auditorium. The floor lighting can also be linked to one of the Power Supply Units that are powering a flight of steps.

The Power Supply Units are usually mounted inside the projection room.



## LED Step Lighting - Installation Guidelines

### Tools & Equipment Required

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Prior to beginning installation, please ensure you have the following tools and equipment:

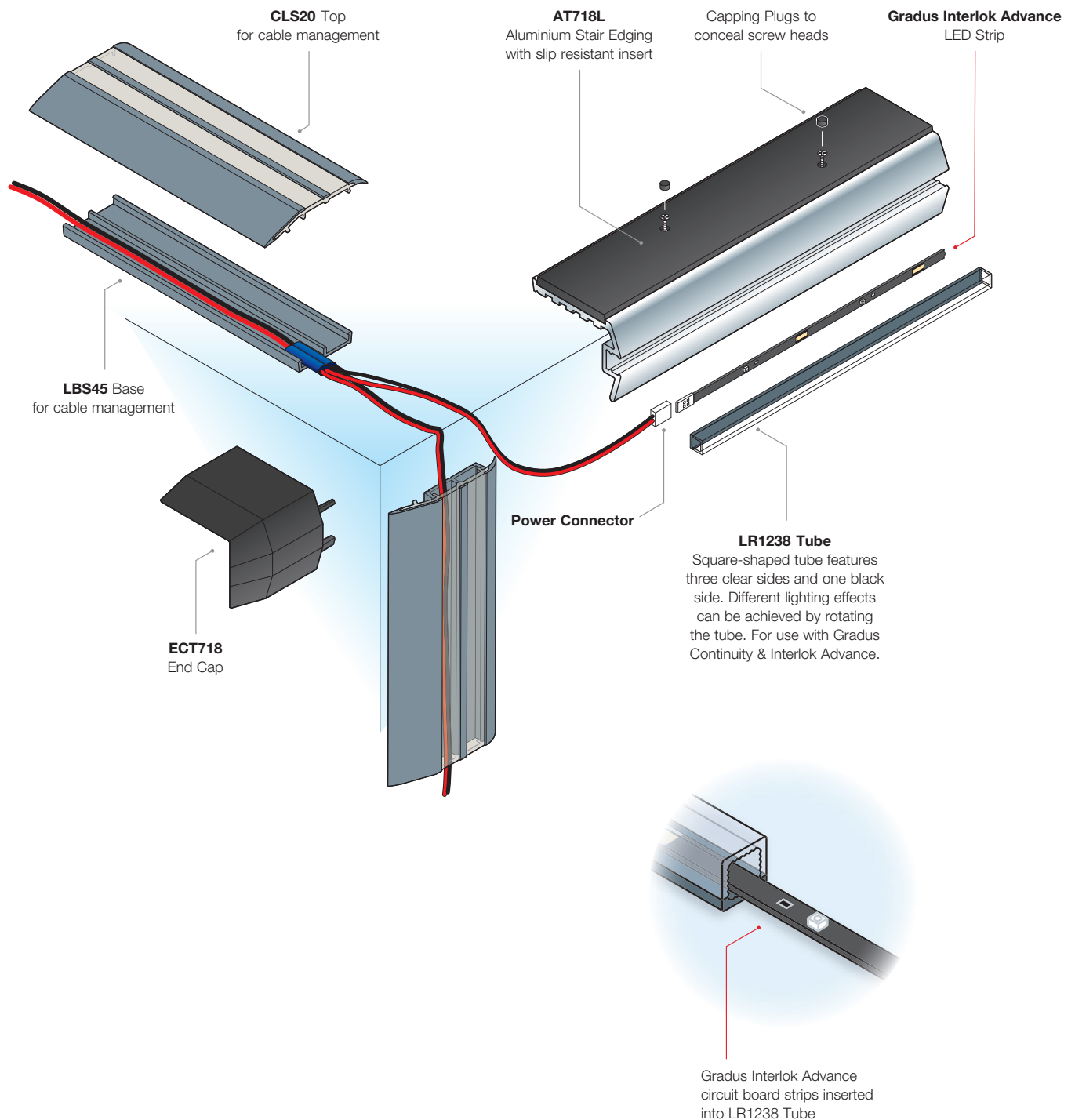


- Gloves
- Tape measure
- Marker pen
- Adhesive + adhesive gun
- Nylon hammer
- Set square
- Wire crimps
- Wire stripper
- Cutting tool
- Electric drill
- Screwdrivers

## LED Step Lighting - Installation Guidelines

### Interlok Advance - LED Step Lighting - Product Diagram

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## LED Step Lighting - Installation Guidelines

### Interlok Advance - LED Step Lighting - Installation

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These installation guidelines apply to the following Gradus Stair Edging profiles with Interlok Advance LED Lighting:

Step Lighting Profiles:
RXT1218L PVC-u Stair Edging with Interlok Advance LED Lighting
RNT718L PVC-u Stair Edging with Interlok Advance LED Lighting
RNT1218L PVC-u Stair Edging with Interlok Advance LED Lighting
ATF71L Aluminium Stair Edging with Interlok Advance LED Lighting
ATD71L Aluminium Stair Edging with Interlok Advance LED Lighting
ATD121L Aluminium Stair Edging with Interlok Advance LED Lighting
AT718L Aluminium Stair Edging with Interlok Advance LED Lighting
ATNG71L Aluminium Stair Edging with Interlok Advance LED Lighting
AS1106L Aluminium Stair Edging with Interlok Advance LED Lighting
ELAF2350 Aluminium Stair Edging with Interlok Advance LED Lighting
ELAF5150 Aluminium Stair Edging with Interlok Advance LED Lighting

#### Installation

1. Surface preparation: Prior to application ensure that all surfaces are smooth, sound, clean and free of laitance, dust and contamination. If a levelling compound or repair mortar is required ensure that the manufacturer's instructions are followed to ensure the material is ready to provide a strong surface. The product to be adhered should also be clean and free from contamination such as oil, grease etc. that may impair adhesion.

Suitable Substrates:*	Non-suitable Substrates:
Electroplated Metal	Weak, friable, dusty concrete / screed etc.
Concrete / Powerfloat	Asphalt / Bitumen
Floor Smoothing Compounds	Polyethylene / Polypropylene
Repair Mortars (Cement and Epoxy)	Oil / grease contaminated surfaces
Terrazzo / Marble / Ceramics / Engineering Brick	
Fibre Glass	
Plywood / OSB / Chipboard / MDF / Wood	
Plaster / Plaster Board	
Paint/ Epoxy / PU Coatings and Screeds	

*\*This table is a guide only and you may encounter different substrates and other factors that will affect the suitability such as undulations, flaking paint or weak plaster.*

## LED Step Lighting - Installation Guidelines

### Interlok Advance - LED Step Lighting - Installation

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2. Prior to installing the floorcovering, position the endcap of the stair edging onto the end of the step and mark the position of the endcap. Ensure you mark the top and bottom edges of the end cap, as well as the width of the endcap to help determine the length of the cable management needed. Remove end cap from step.



3. Measure between the back of the end cap that you have just marked on the tread to the front edge of the tread. This measurement determines the length of cable management required.



4. Measure the distance between the only mark you made on the riser to the bottom of the riser. This measurement determines the length of cable management required.
5. Measure the distance between the start of the next tread to the mark you made for the next end cap. This measurement determines the length of cable management required.

## LED Step Lighting - Installation Guidelines

### Interlok Advance - LED Step Lighting - Installation

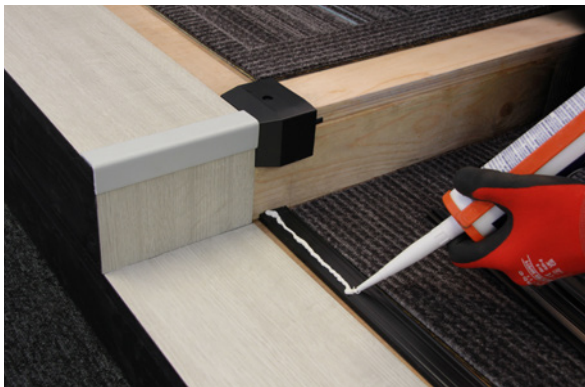
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- Mitre the end of the cable management 45° and then cut the straights as measured in step 3, 4 & 5.



- Repeat this process for all additional steps.
- Apply an 8mm bead of gap filling adhesive to the centre of the base of the cable management system and position onto the left or right hand edge of the steps. Once positioned correctly, these can be mechanically fixed as appropriate.



- Measure the width of each step from end cap to end cap, or end cap to the wall and cut the step profile appropriately along with any backing plates.





## LED Step Lighting - Installation Guidelines

### Interlok Advance - LED Step Lighting - Installation

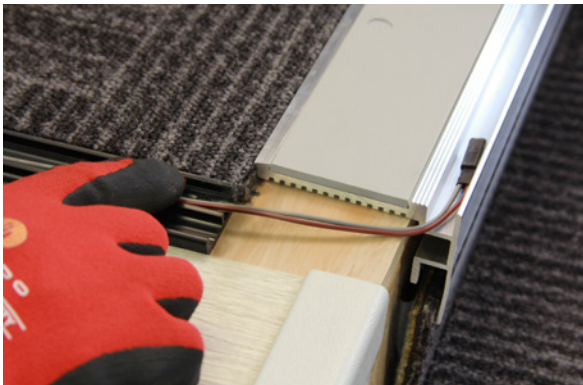
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10. Apply three 8mm beads of adhesive evenly spaced to the back of the tread of the nosing. Mechanically fix the nosings before the adhesive has cured to allow for correct positioning.  
**Please note:** concrete steps require sealant for adhesive to adhere to.
11. Place pips/plugs into inserts to cover screw heads.



12. Place wiring into the appropriate cable management channel from the feed point.



13. Cut the circuit board to required length.  
**Please note:** Cut points are every 50mm or 100mm depending on the LED Lighting System purchased.



## LED Step Lighting - Installation Guidelines

### Interlok Advance - LED Step Lighting - Installation

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14. Insert the circuit board into IAVC1 (input)



15. Cut PVC tube to required length.



16. Insert lighting circuit into the PVC tube ensuring the lighting tube strip is facing the correct way. Insert tube into stair nosing.



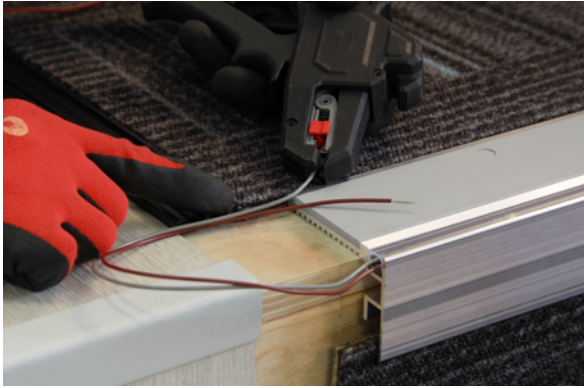
## LED Step Lighting - Installation Guidelines

### Interlok Advance - LED Step Lighting - Installation

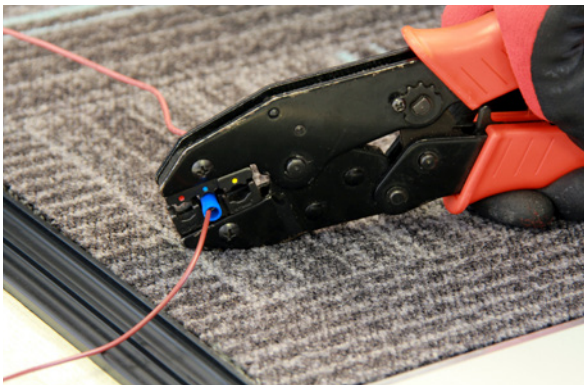
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17. Cut and strip the wires ensuring the correct polarity required.



18. Crimp the wires using the correct size crimps.



19. Place into the cable management system.



## LED Step Lighting - Installation Guidelines

### Interlok Advance - LED Step Lighting - Installation

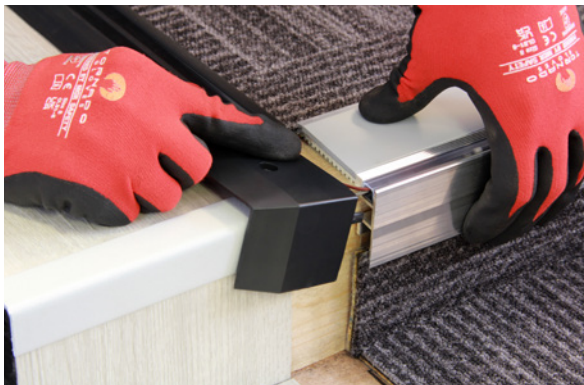
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20. Secure the top of the cable management system into the base.



21. Install the end caps, inserting the lugs into the appropriate retainers.



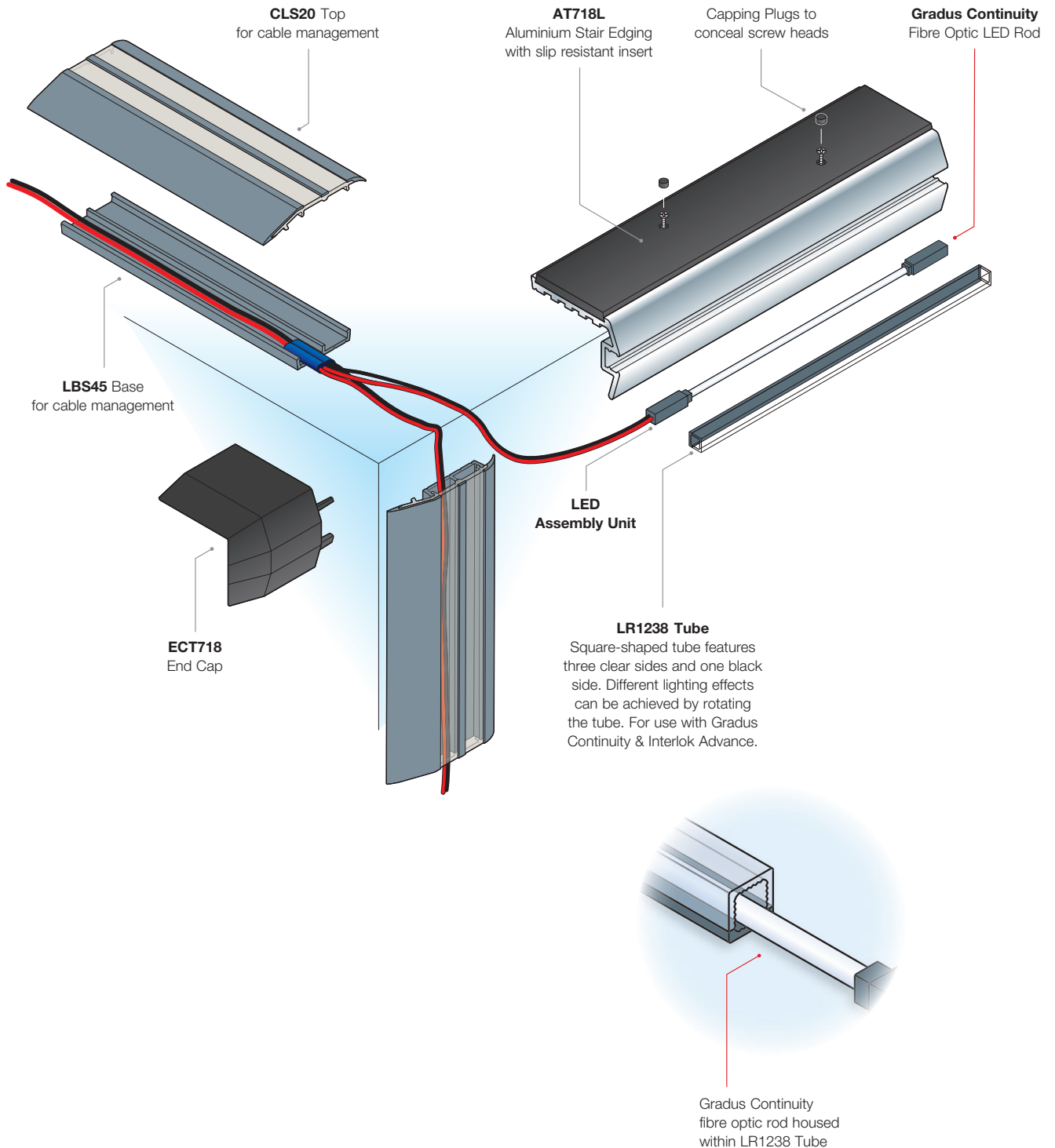
22. Secure the end cap with a screw and place the pip to cover the screw head.



## LED Step Lighting - Installation Guidelines

### Continuity - LED Step Lighting - Product Diagram

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## LED Step Lighting - Installation Guidelines

### Continuity - LED Step Lighting - Installation

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These installation guidelines apply to the following Gradus Stair Edging profiles with Continuity Lighting:

Step Lighting Profiles:
RXT1218L PVC-u Stair Edging with Continuity LED Lighting
RNT718L PVC-u Stair Edging with Continuity LED Lighting
RNT1218L PVC-u Stair Edging with Continuity LED Lighting
ATF71L Aluminium Stair Edging with Continuity LED Lighting
ATD71L Aluminium Stair Edging with Continuity LED Lighting ( <i>Gradus Continuity suitable for use in up light only</i> )
ATD121L Aluminium Stair Edging with Continuity LED Lighting ( <i>Gradus Continuity suitable for use in up light only</i> )
AT718L Aluminium Stair Edging with Continuity LED Lighting
ATNG71L Aluminium Stair Edging with Continuity LED Lighting
AS1106L Aluminium Stair Edging with Continuity LED Lighting
ELAF2350 Aluminium Stair Edging with Continuity LED Lighting
ELAF5150 Aluminium Stair Edging with Continuity LED Lighting

#### Installation

1. Surface preparation: Prior to application ensure that all surfaces are smooth, sound, clean and free of laitance, dust and contamination. If a levelling compound or repair mortar is required ensure that the manufacturer's instructions are followed to ensure the material is ready to provide a strong surface. The product to be adhered should also be clean and free from contamination such as oil, grease etc. that may impair adhesion.

Suitable Substrates:*	Non-suitable Substrates:
Electroplated Metal	Weak, friable, dusty concrete / screed etc.
Concrete / Powerfloat	Asphalt / Bitumen
Floor Smoothing Compounds	Polyethylene / Polypropylene
Repair Mortars (Cement and Epoxy)	Oil / grease contaminated surfaces
Terrazzo / Marble / Ceramics / Engineering Brick	
Fibre Glass	
Plywood / OSB / Chipboard / MDF / Wood	
Plaster / Plaster Board	
Paint / Epoxy / PU Coatings and Screeds	

*\*This table is a guide only and you may encounter different substrates and other factors that will affect the suitability such as undulations, flaking paint or weak plaster.*

## LED Step Lighting - Installation Guidelines

### Continuity - LED Step Lighting - Installation

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2. Prior to installing the floorcovering, position the endcap of the stair edging onto the end of the step and mark the position of the endcap. Ensure you mark the top and bottom edges of the end cap, as well as the width of the endcap to help determine the length of the cable management needed. Remove end cap from step.



3. Measure between the back of the end cap that you have just marked on the tread to the front edge of the tread. This measurement determines the length of cable management required.



4. Measure the distance between the only mark you made on the riser to the bottom of the riser. This measurement determines the length of cable management required.
5. Measure the distance between the start of the next tread to the mark you made for the next end cap. This measurement determines the length of cable management required.

## LED Step Lighting - Installation Guidelines

### Continuity - LED Step Lighting - Installation

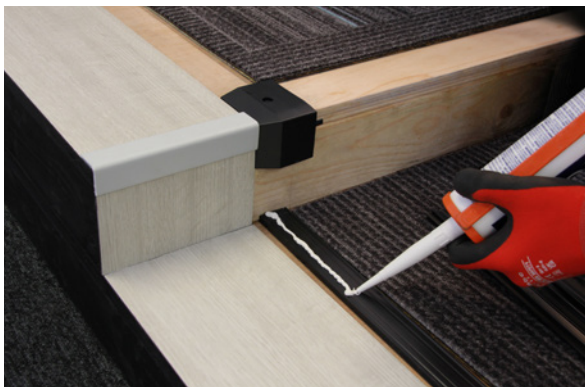
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- Mitre the end of the cable management 45° and then cut the straights as measured in steps 3, 4 & 5.



- Repeat this process for all additional steps.
- Apply an 8mm bead of gap filling adhesive to the centre of the base of the cable management system and position onto the left or right hand edge of the steps. Once positioned correctly, these can be mechanically fixed as appropriate.



- Measure the width of each step from end cap to end cap, or end cap to the wall and cut the step profile appropriately along with any backing plates.





## LED Step Lighting - Installation Guidelines

### Continuity - LED Step Lighting - Installation

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10. Apply three 8mm beads of adhesive evenly spaced to the back of the tread of the nosing. Mechanically fix the nosings before the adhesive has cured to allow for correct positioning.  
**Please note:** concrete steps require sealant for adhesive to adhere to.
11. Place pips/plugs into inserts to cover screw heads.



12. Place wiring into the appropriate cable management channel from the feed point.
13. Measure the fitted stair edging between end caps.
14. Using a PVC Conduit Cutter (or similar), cut the LR1238 TUBE to the required length of the recess, minus the length of the LEDCHAM + BLANK (as illustrated below).



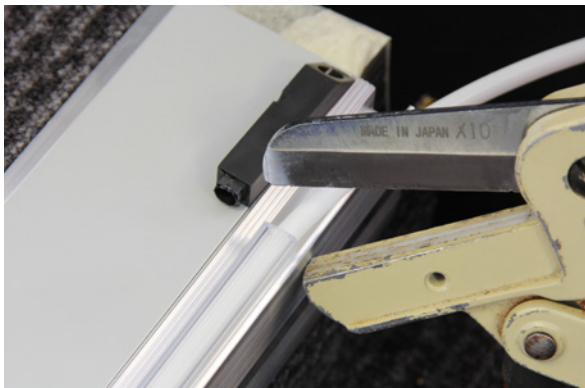
## LED Step Lighting - Installation Guidelines

### Continuity - LED Step Lighting - Installation

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15. Feed the CONTINUITY FIBRE OPTIC ROD through the LR1238 TUBE, then cut the CONTINUITY FIBRE OPTIC ROD with PVC Conduit Cutters (or similar), making sure there is 12mm excess at each end of the LR1238 TUBE.



16. Insert the CONTINUITY FIBRE OPTIC ROD into the LEDCHAM, then slide the LR1238 TUBE in place.



17. Fit the BLANK into the open end of the LR1238 TUBE.



## LED Step Lighting - Installation Guidelines

### Continuity - LED Step Lighting - Installation

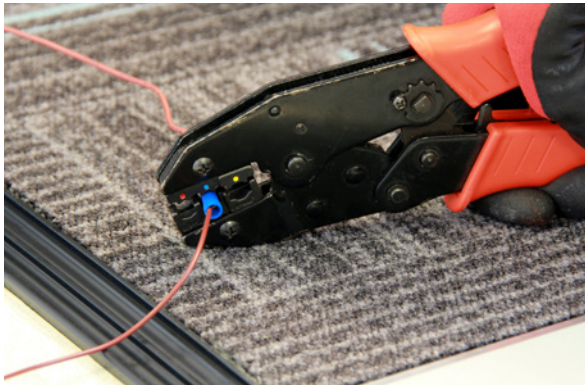
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18. Install the fully assembled LR1238 TUBE into the recess. When using in conjunction with an aluminium stair edging profile, use a bead of silicone behind the lighting to adhere the LR1238 TUBE to the profile.
19. Cut and strip the wires ensuring the correct polarity required.



20. Crimp the wires using the correct size crimps.



21. Place into the cable management system.



## LED Step Lighting - Installation Guidelines

### Continuity - LED Step Lighting - Installation

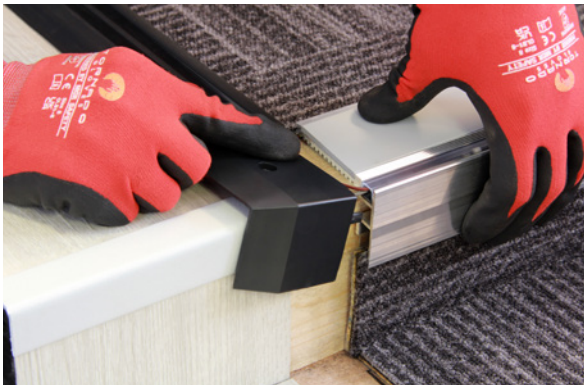
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22. Secure the top of the cable management system into the base.



23. Install end caps, inserting the lugs into the appropriate retainers.



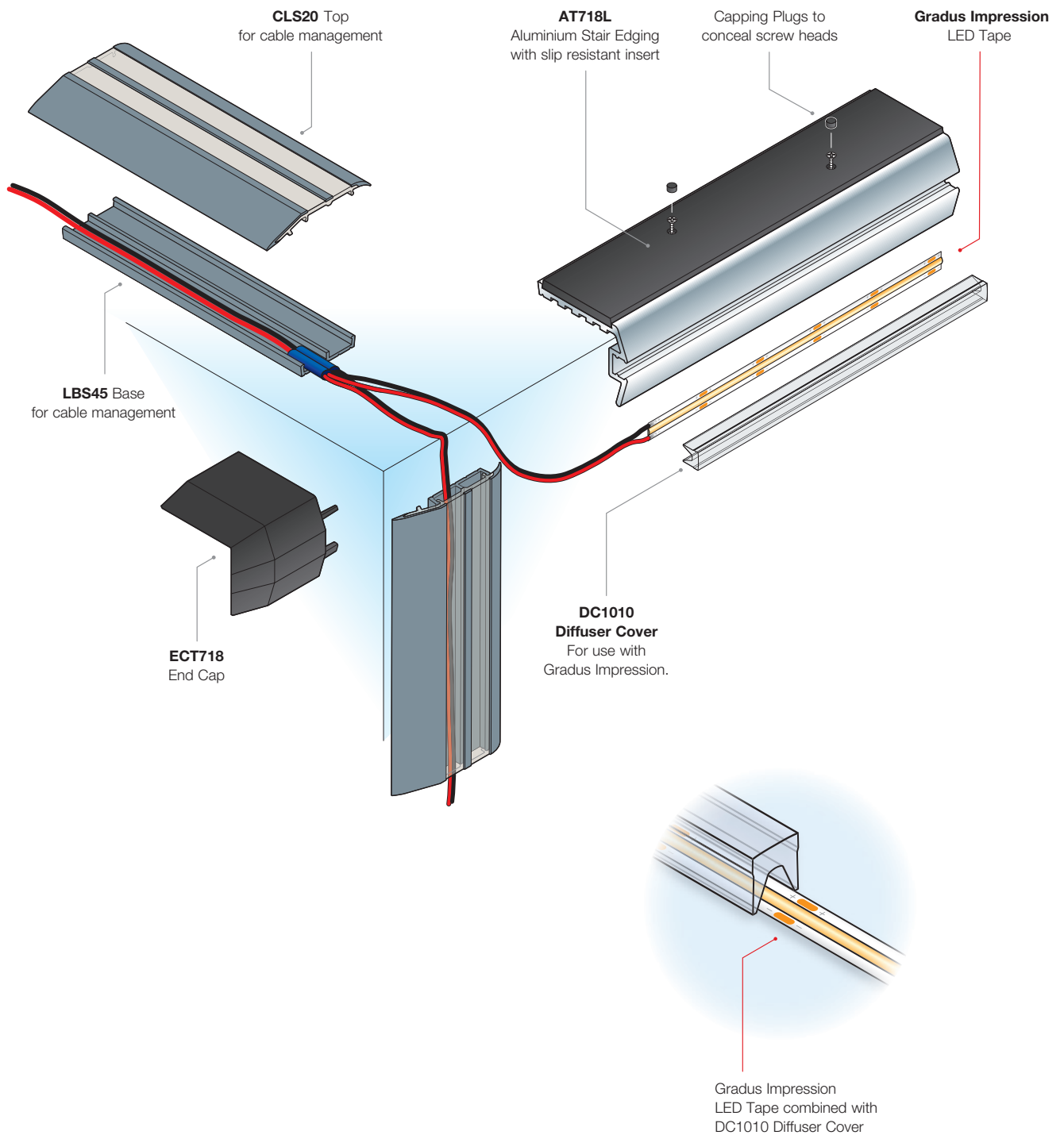
24. Secure the end cap with a screw and place the pip to cover the screw head.



## LED Step Lighting - Installation Guidelines

### Impression - LED Step Lighting - Product Diagram

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## LED Step Lighting - Installation Guidelines

### Impression - LED Step Lighting - Installation

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#### Before Installing – points to consider:

- It's vital that LED Tapes are handled with care – they are delicate. To prevent damage, be careful not to scratch, distort, or irregularly bend/twist the LED tape during installation. Do not bend the LED tape into an arc with a diameter of less than 10mm – doing so could result in damage to the tape, resistors and diodes, as well as reducing its longevity and reliability.
- Attention should be paid to the polarity (positive and ground) of all components as reversing the polarity may damage your product.
- Attention should be paid to the power supply voltage to ensure it matches the LED tape. The LED tape will be damaged if a voltage used exceeds that specified on the tape.
- If the actual length of the LED tape exceeds the specified maximum length, it could lead to overload, overheating and uneven brightness.
- IP20 uncoated and IP65 splashproof LED tapes are suitable for indoor use only.
- Ensure the LED driver is situated away from all direct heat sources.
- The LED driver should have unobstructed airflow, with a minimum area space of 100mm and offer an equal or greater power rating than the LED tape. E.g. 5 meters of 10 Watt tape needs a 50 watt power supply or greater.
- LED tape should be fitted to a thermally conductive material to draw heat away from the LEDs. If installed to a thermally insulative material the lifespan of the LED can be greatly reduced.

These installation guidelines apply to the following Gradus Stair Edging profiles with Impression LED Lighting:

Step Lighting Profiles:
ATF71L Aluminium Stair Edging with Impression LED Lighting (RGBW Colour Changing not suitable)
ATD71L Aluminium Stair Edging with Impression LED Lighting (RGBW Colour Changing not suitable)
ATD121L Aluminium Stair Edging with Impression LED Lighting (RGBW Colour Changing not suitable)
AT718L Aluminium Stair Edging with Impression LED Lighting (RGBW Colour Changing not suitable)
ATNG71L Aluminium Stair Edging with Impression LED Lighting (RGBW Colour Changing not suitable)
AS1106L Aluminium Stair Edging with Impression LED Lighting (RGBW Colour Changing not suitable)
ELAF2350 Aluminium Stair Edging with Impression LED Lighting (RGBW Colour Changing not suitable)
ELAF5150 Aluminium Stair Edging with Impression LED Lighting (RGBW Colour Changing not suitable)

#### Installation

1. Surface Preparation: Prior to application ensure that all surfaces are smooth, sound, clean and free of laitance, dust and contamination. If a levelling compound or repair mortar is required ensure that the manufacturer's instructions are followed to ensure the material is ready to provide a strong surface. The product to be adhered should also be clean and free from contamination such as oil, grease etc. that may impair adhesion..

Suitable Substrates:*	Non-suitable Substrates:
Electroplated Metal	Weak, friable, dusty concrete / screed etc.
Concrete / Powerfloat	Asphalt / Bitumen
Floor Smoothing Compounds	Polyethylene / Polypropylene
Repair Mortars (Cement and Epoxy)	Oil / grease contaminated surfaces
Terrazzo / Marble / Ceramics / Engineering Brick	
Fibre Glass	
Plywood / OSB / Chipboard / MDF / Wood	
Plaster / Plaster Board	
Paint / Epoxy / PU Coatings and Screeds	

\*This table is a guide only and you may encounter different substrates and other factors that will affect the suitability such as undulations, flaking paint or weak plaster.

## LED Step Lighting - Installation Guidelines

### Impression - LED Step Lighting - Installation

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2. Prior to installing the floorcovering, position the endcap of the stair edging onto the end of the step and mark the position of the endcap. Ensure you mark the top and bottom edges of the end cap, as well as the width of the endcap to help determine the length of the cable management needed. Remove end cap from step.



3. Measure between the back of the end cap that you have just marked on the front tread to the edge of the tread. This measurement determines the length of cable management required.



4. Measure the distance between the only mark you made on the riser to the bottom of the riser. This measurement determines the length of cable management required.
5. Measure the distance between the start of the next tread to the mark you made for the next end cap. This measurement determines the length of cable management required.

## LED Step Lighting - Installation Guidelines

### Impression - LED Step Lighting - Installation

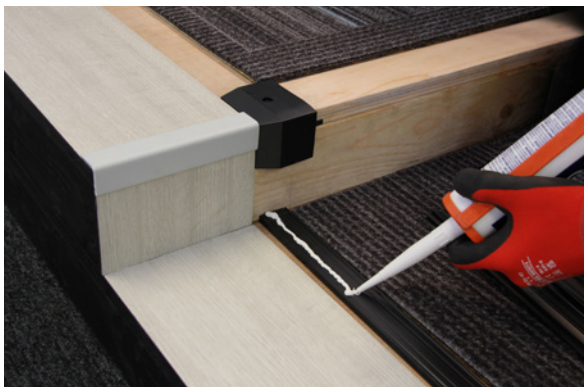
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- Mitre the end of the cable management 45° and then cut the straights as measured in steps 3, 4 & 5.



- Repeat this process for all additional steps.
- Apply an 8mm bead of gap filling adhesive to the centre of the base of the cable management system and position onto the left or right hand edge of the steps. Once positioned correctly, these can be mechanically fixed as appropriate.



- Measure the width of each step from end cap to end cap, or end cap to the wall and cut the step profile appropriately along with any backing plates.





## LED Step Lighting - Installation Guidelines

### Impression - LED Step Lighting - Installation

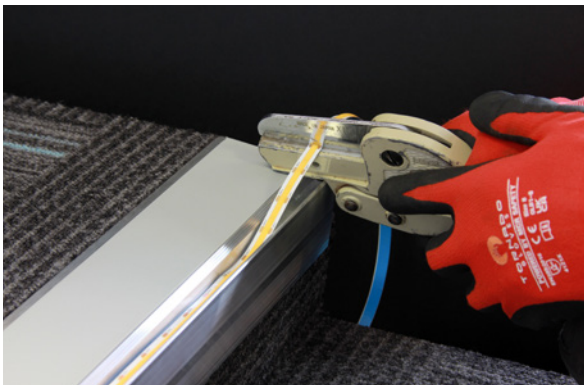
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10. Apply three 8mm beads of adhesive evenly spaced to the back of the tread of the nosing. Mechanically fix the nosings before the adhesive has cured to allow for correct positioning. Please note: concrete steps require sealant for adhesive to adhere to.
11. Place pips/plugs into inserts to cover screw heads.



12. Place wiring into the appropriate cable management channel from the feed point.
13. Ensure that the surface onto which the LED tape is to be installed is clean and free from grease.
14. Test all LED tapes first, prior to installing. Note – always unreel the LED tape before testing (otherwise overheating and damage will occur).
15. When cutting the LED tape to size, use the marked cut points.



## LED Step Lighting - Installation Guidelines

### Impression - LED Step Lighting - Installation

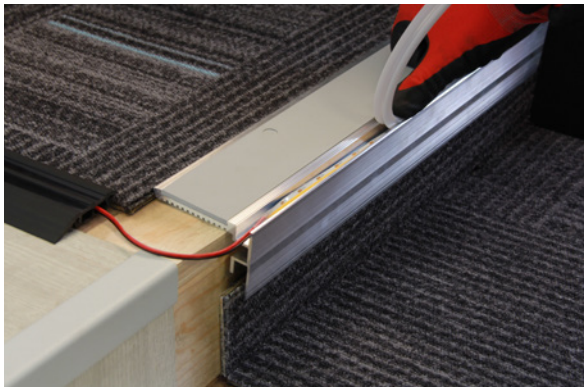
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16. Peel off the LED tapes backing tape. Position the LED tape on the clean surface in the required location and stick it into place using the self-adhesive backing. Ensure the diodes are an equal distance away from each end of the step profile to help prevent dark spots.



17. Cut to size and insert the DC1010 diffuser cover.



18. If the total LED Tape lengths exceed the stated maximum run, then the LEDs must be wired to the power supply as multiple shorter LED Tapes in parallel.

## LED Step Lighting - Installation Guidelines

### Impression - LED Step Lighting - Installation

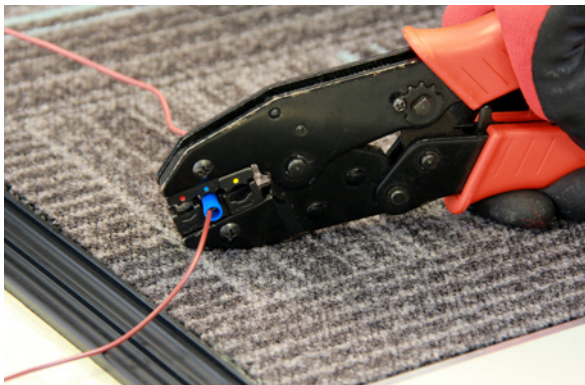
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19. Cut and strip wires ensuring the correct polarity required.



20. Crimp the wires using the correct size crimps.



21. Place into the cable management system.



## LED Step Lighting - Installation Guidelines

### Impression - LED Step Lighting - Installation

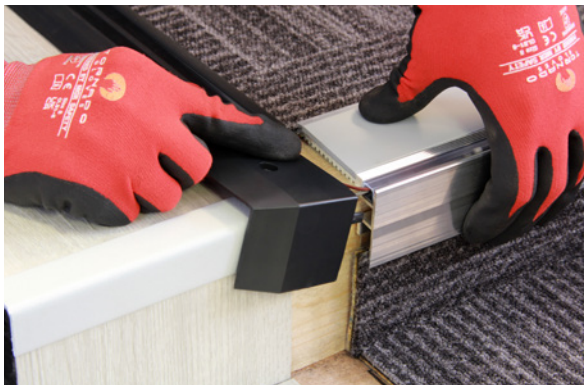
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22. Secure the top of the cable management system into the base.



23. Install end caps, inserting the lugs into the appropriate retainers.



24. Secure the end cap with a screw and place the pip to cover the screw head.

