MetalWorks Clip In Installation Guide

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METALWORKS CLIP IN

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Product Description

Armstrong MetalWorks ceilings are **INTERIOR FINISHES ONLY** and conditions during the installation should reflect this. Armstrong recommends during installation that relative humidity should not exceed 99%, within a temperature range of 0º to 49º Celsius and with the absence of any "standing water". Conditions following completion should be maintained as such.

Because of the risk of soiling, the installation of ceiling tiles should only take place after the completion of any work generating large amounts of dust. The wearing of clean gloves is recommended for installation work. The ceiling installer is responsible for the satisfactory installation of the ceiling and adherence to industry best practice and in accordance with AS/NZS2785:2020

Ceiling tiles should only be stored in a dust-free and dry area. It is important to ensure that the tiles are not subjected to any mechanical influences, such as damage caused by the underlying surface. Ceiling tiles delivered on pallets should be stored in their original packaging until they are installed. Where this is not possible, care should be taken to ensure that cartons are stored with the designated side facing upwards. The installation company is responsible for the careful storage of tiles.

The ceiling system is made up of Armstrong MetalWorks Clip In panels which are supported by the Armstrong Suspension System (U-Profile Channel, A-Type Carrier Rail and hangers) and Wall Angle which runs around the perimeter of the space.

The integrity of the entire suspended ceiling depends on the hangers – commonly 5mm gal rod is used, with some contractors using 2.5mm wire and M6 Threaded Rod (Both types meet Australian / New Zealand standard 2785-2020) which are used to support the main bars. Bracing is to be applied where required to ensure the U-Profile Suspension System remains square.

***Note: Specially designed MetalWorks Ceilings for EXTERIOR applications are available upon request. Contact your Armstrong Ceiling Solutions Representative for details and conditions.**

1. Before You Start

All material delivered to site should be checked for damage, unopened and original packages.

At this stage if you are unsure of the suitability of material for this project, ask questions, as it is very expensive to remove materials that have been installed.

All materials to be kept dry and protected from the elements.

2. Plenum Space

The installation of MetalWorks Clip-in panels requires no more space in the plenum than that which is required to hang the suspension system. Panels never need to travel into the plenum space during installation or removal.

The total height of the ceiling assembly is approximately 100mm measured from the face of the panel to the top of the carrying channel or main beam. Additional space is required for the attachment of Suspension Clip and 5mm Rod.

3. Determine Ceiling Orientation

- It is important at this stage to determine the direction the ceiling grid and Baffles to be installed.
- The drawing supplied by the builder will show the panel direction required (rectangular panels).
- U-Profile Channels are typically oriented perpendicular to the roof purlins or joists.

4. Installation of Wall Angle

- Wall angle type is to be determined and installed at the ceiling height as described on the construction drawing.
- Mark the desired height of the wall molding. Use a chalk line or laser to mark all walls at the same height.
- Wall angles to be fixed up to a maximum of 600mm centers to the building structure;
- The type of fixings to be used will be determined by the type of building base material used.
- Ensure all butt joints are tight and miters in corners are also neat and tight.

For Seismic Design support please contact your local Armstrong Ceilings office

MetalWorks Clip In Installation Guide

4. Installation Of Hangers and U-Profile

- The 5mm Gal rod shall to be cut to pre-determined lengths, and a hook bent to 30° on one end (must be a sharp bend, so the suspension bracket will fit into the bend without the rod straightening).

  Where specified, the U-Profile Channel can be suspended on 6mm galvanised threaded rod. See Fig. 2 for details (Suspension Clip for Threaded Rod is Item UNITRCB).
- Fit the Suspension Clip to the rod at this stage and fasten with Locking Clip (item UNI200).
- The Locking Clip is correctly fitted with the longer tongue face up (see Fig 1). The Locking clip can be removed by pressing down on the upper tongue.

Fig. 1: Locking Clip Installation

- Ensure all suspension rods are vertical.
- Install U-Profile Channels at 1200mm (maximum) centres with Suspension Hangers (5mm Rod and Clip) at 1200mm (maximum) centres along the length of each U-Profile Channel (Item UNI111B). Ensure Locking Clips are installed to secure the Suspension Clip to the U-Profile Channel. See Fig. 2 for details and specific components: 5mm Rod, Suspension Clip (item UNI203B) and Locking Clip (item UNI200)

Fig. 2: U-Profile Channel and Suspension Components

- The U-Profile Channels adjacent to the perimeter must have three suspension points, with the other U-Profile Channels in between requiring a minimum of two suspension points.
- U-Profile Channels are to be secured to the perimeter with the Wall Anchor (Item UNI202) See Fig. 3 for details

Fig 3: U-Profile Detail at Perimeter

- U-Profile Channels are to be joined end to end with a U-Profile Channel Connector (Item UNI103). See Fig. 4
- To ensure the U-Profile Channels are kept precisely on module, tolerances in the U-Profile Channel can be absorbed in the joint with the connector.

Fig 4: U-Profile Channel and Connector

MetalWorks Clip In Installation Guide

5. Installation Of Hangers and U-Profile (Continued)

- The 1st U-Profile Channel must be no more than 300mm from the perimeter, with the first suspension point being no greater than 300mm from the end of the U-Profile Channel.
- The U-Profile Channels are to be installed parallel, in a manner that the punchings along the length, align from one U-Profile Channel to the next. Note: the U-Profile Channels are directional and punched on both sides at 50mm OC, and 25mm offset. See Fig. 2 for details.

U-Profile Suspension Components

Detail	Item	Description	Dimensions
1	UNI111B UNI103	U-Profile Channel U-Profile Channel Connector	20x30x3750mm 17x23x95mm
2	AC-MK-CL UNIA2	"A" Rail "A" Rail Joiner	16x38x4000mm 14x22x100mm
3	UNI203B UNITRCB	Suspension Clip for 5mm Rod Suspension Clip for M6 Threaded Rod	
4	ROD	5mm Suspension Rod	
5	UNI201	"A" Rail Hanger	
6	UNI200	Locking Clip	
7	AL008GW AL009GW	Std "L" Wall Angle Shadowline Wall Angle	25x19x3600mm 26x26x3600mm
8	UNI202	U-Profile Wall Anchor Bracket	25x35x90mm

Fig. 5: Typical Layout – Primary Components

Fig. 5a

Detail	Dimensions	Description
a0	1200mm (max)	Distance between Suspension Hangers
a1	1200mm (max)	Distance between consecutive U-Profile Channels
a2		Distance between A-Rails = Panel length
a3	300mm (max)	Distance between perimeter and 1st Suspension point
a4	300mm (max)	Distance between perimeter and 1st U-Profile Channel
a5	100mm (max)	Distance between A-Rail Hanger and Suspension point

Fig. 5b

U-Profile Suspension Details

Fig. 5c

* Dimensions may vary based on panel type and production facility.

MetalWorks Clip In Installation Guide

5. Installation Of Hangers and U-Profile (Continued)

- Locate A-Type Carrier or "Clip In" Rails (Item AC-MK-CL) according to panel size: For 1200 long panels, locate at 1200mm centres; 600x600mm panels require A-Type Carrier Rails at 600mm centres. A-Type Carrier Rails are suspended from the U-Profile Channel using "A-Rail Hangers" (item UNI201) and fastened with Locking Clips (item UNI200 Refer Fig. 6b). A-Rails are joined end to end with A-Rail Joiners (A2). Refer to Fig. 6a for details.

Fig 6a: A-Type Carrier Rail Connector

Fig 6b: Fitting A-Rail Hanger to U-Profile

6. Ceiling Panel Installation

- Panels are mechanically directional. Two opposite sides feature a pair of "pips" that engage the A-Rail and retain the panel.
- Align the edges with the opening on the bottom of the A-Rail and press up into place with the palm of the hand.
- The use of a string line is recommended to maintain panel alignment perpendicular to the main beams.

7. Cutting Options

Two different types of equipment are recommended for cutting these metal panels. Each has its own set of advantages and limitations and will be presented in order of preference based on speed.

CAUTION: Cut edges of metal parts can be extremely sharp! Handle metal carefully to avoid injury. Always wear safety glasses and gloves when working with metal.

- **Electric Shears or Nibblers**

  These electric shears resemble a drill motor attached to a pair of scissors blades. There are actually three blades; one movable centered between two stationary. When used, the tool removes a strip of material about 8mm wide. They produce a clean cut, and is quicker than using aviation snips.

  Procedure: Mark the cut line on the face of the panel. Use aviation snips to remove a section of the edge material on the waste side of the cut line. This step is required to provide access to the face for the shears. Cut the panels face up.

  NOTE: To prevent scratching the face of the panel, observe the direction that the 8mm band of waste material takes as it coils up in front of the cut. Position successive panels so that this coil moves across the scrap portion of the panel.

- **Aviation Snips**

  Both left cut and right cut aviation snips will be required for notching operations and for cutting holes for penetrations through the panel face.

  Procedure: Notching Snips are used as needed to cut through the edge detailing on panels to provide clearance for shears or to ease corners. Application will vary depending on edge detail.

8. Penetrations Cutouts

Procedure: Penetrations are created by first drilling or punching a hole near the center and then cutting in a spiral pattern to the finished size and shape.

Exercise caution during this procedure as the hand will be in close proximity to the cut edge of the panel.

MetalWorks Clip In Installation Guide

9. Panel Removal

All panels are removable without moving up into the plenum.

Procedure: The panel removal tool, is inserted into the joint between two panels. When inserted far enough, the tool will engage the top edge of the panel. Pull down gently to release the panel from the A-Rail.

Adjacent panels may be removed from the same row of mains without further use of the tool.

Backloading

Unless approved, Armstrong metal ceilings are designed to support only their own weight plus that of Soundtex acoustical scrim or other light weight insulation. All mechanical services must be independently supported. Contact Armstrong for more information on B15 acoustical solutions and support trays for services.

Maintenance

Ceiling tiles may be cleaned at any time. However, any maintenance work on suspended ceilings should only be carried out after the technical functions of the ceiling installation have been carefully checked. In cases of doubt, the relevant Armstrong sales office should be contacted.

In the case of damage to individual ceiling tiles, these can be exchanged within the systems. In such instances, especially after extended periods of use, colour variations may occur when individual tiles are replaced.

Armstrong – paint coatings

Armstrong ceiling tiles in general are electrostatically paint coated or finished with a polyester powdercoat.

Cleaning of Armstrong MetalWorks metal ceilings.

The frequency of cleaning will depend upon the function and usage of each area and the efficiency of the air conditioning/heating system. This period can only be determined after handover and occupancy. Although the ceiling materials are provided with durable paint finish, abrasive or strong chemical detergent should not be used. A mild detergent diluted in warm water applied with a soft cloth, rinsed and finally wiped off with a chamois leather will maintain the ceiling in good condition. Oily or stubborn stains if not removed by washing can be wiped off with white spirit but care is necessary to avoid affecting the gloss level of the paint finishes.

Contact us

NSW

65A Stephen Road
Botany New South Wales 2019
(02) 9666 6688
sales@grayking.com.au

QLD

(07) 3267 6222
sales@grayking.com.au

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GRAYKING INTERIOR SUPPLY

Grayking Interior Supply Pty Ltd

sales@grayking.com.au
www.grayking.com.au