

METALWORKS™ R-H215 HOOK ON
Installation Guide

Inspiring Great Spaces™

Armstrong®

CEILING SYSTEMS

Installation Guide

Armstrong METALWORKS™ ceilings are interior finishes and conditions during the installation should reflect this. Armstrong recommends during installation that relative humidity should not exceed 99%, within a temperature range of 0 to 49 degrees 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/NZS2785:2000

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™ R-H215 Hook On In panels which are supported by the Armstrong Suspension System, comprising of: Unigridd™ Channels, H-Bar (Hook On Rails), Suspension Clips & hangers and Wall Angles located 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 2785-2000) which are used to support the main bars. Bracing is to be applied where required to ensure the Unigridd™ Suspension System remains square.

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™ R-H215 Hook On 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 Unigridd™ Channel. Additional space is required for the attachment of Suspension Clip and 5mm Rod.

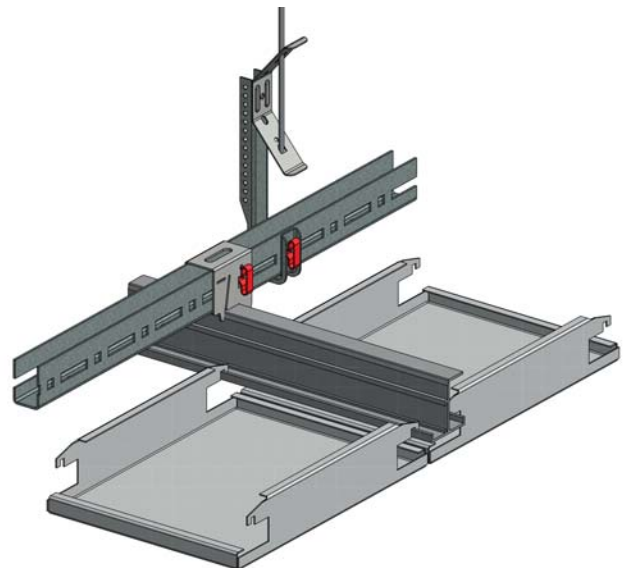
3. Determine Ceiling Orientation

- It is important at this stage to determine the direction the ceiling grid and panels to be installed.
- The drawing supplied by the builder will show the panel direction required (rectangular panels).
- Unigridd™ 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.

METALWORKS™ R-H215 “Hook On” System



For Seismic
Design support
please contact
your local
Armstrong
office.

5. Installation Of Hangers and Unigrid™

- The 5mm Gal rod shall 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 Unigrid™ Channel can be suspended on 6mm galvanised threaded rod. See Fig. 2 for details (Suspension Clip for Threaded Rod is Item UNITRCB).

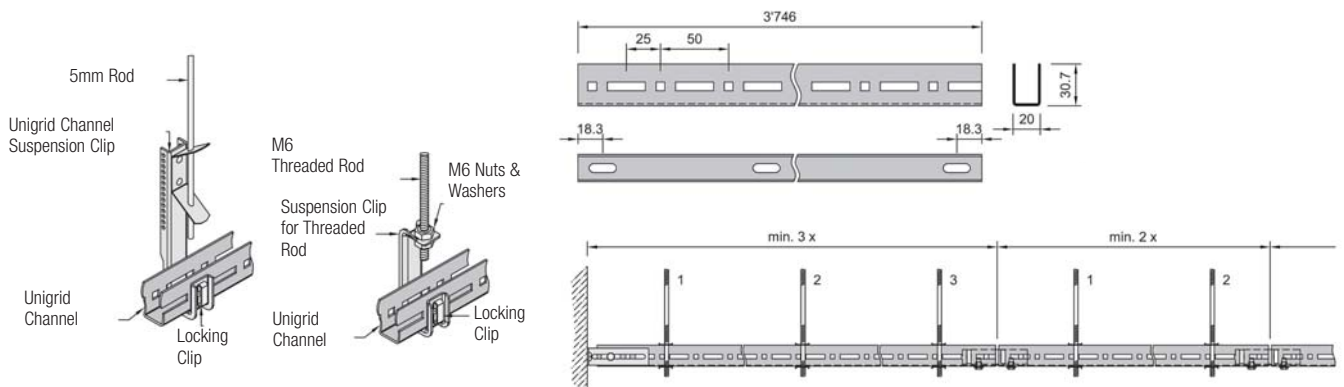
- Fit the Suspension Clip to the rod at this stage and fasten with Locking Clip (item UNI200).
- The Locking Clip is correctly fitted with the longer tongue face up (see Fig 1). The Locking clip can be removed by pressing down on the upper tongue.

Fig. 1: Locking Clip Installation



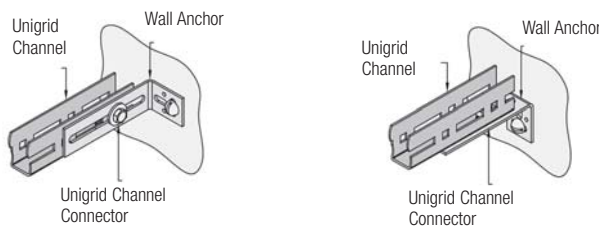
- If using 2.5mm Suspension Wire, bend the wire around the Unigrid™ Channel and wrap it around itself 3 times.
- Ensure all suspension rods are vertical.
- When installing the ceiling under a metal roof structure, ensure the Unigrid™ Channels (Item UNI111B) run at perpendicular to the purlins / trusses.
- Install Unigrid™ Channels at 1200mm (maximum) centres with Suspension Hangers (5mm Rod and Clip) at 1200mm (maximum) centres along the length of each Unigrid™ Channel). Ensure Locking Clips are installed to secure the Suspension Clip to the Unigrid Channel. See Fig. 2 for details and specific components: 5mm Rod, Suspension Clip (item UNI203B) and Locking Clip (item UNI200)

Fig. 2: Unigrid™ Channel and Suspension Components



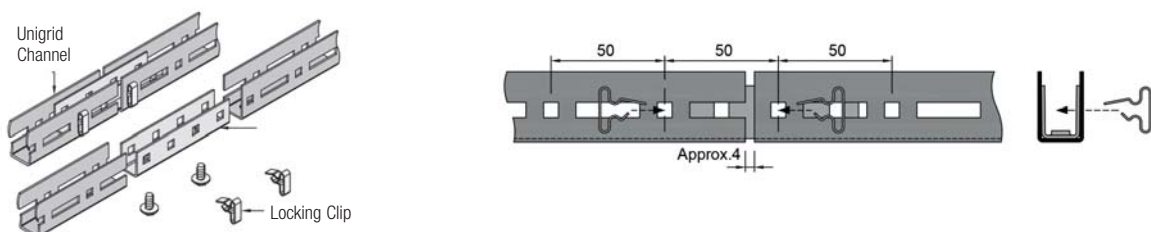
- The Unigrid™ Channels adjacent to the perimeter must have three suspension points, with the other Unigrid™ Channels in between requiring a minimum of two suspension points.
- Unigrid™ Channels are to be secured to the perimeter with the Wall Anchor (Item UNI202) See Fig. 3 for details

Fig 3: Unigrid™ Detail at Perimeter



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

Fig 4: Unigrid™ Channel and Connector



5. Installation Of Hangers and Unigrig™ (Continued)

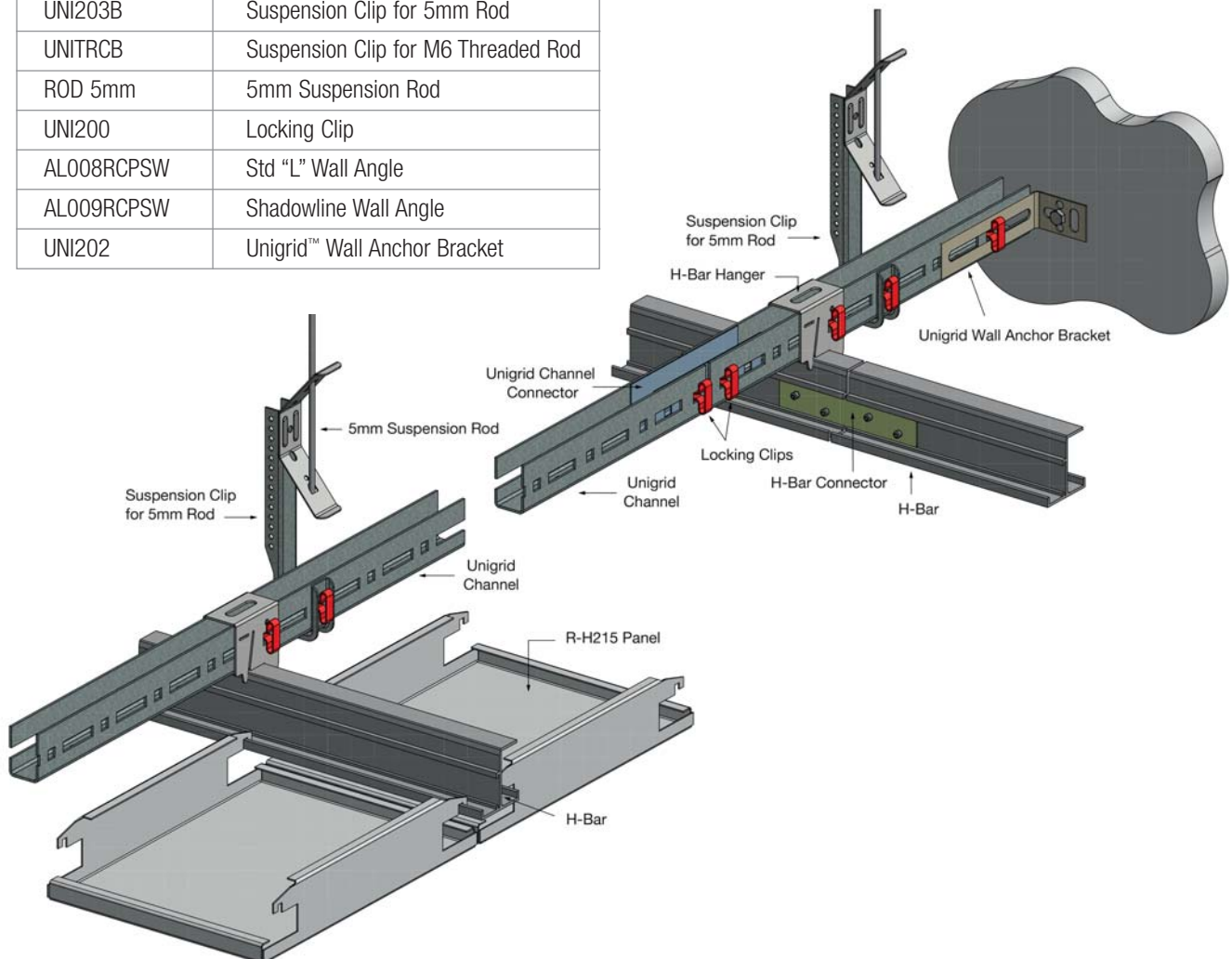
- The 1st Unigrig Channel must be no more than 300mm from the perimeter, with the first suspension point being no greater than 300mm from the end of the Unigrig Channel.
- The Unigrig™ Channels are to be installed parallel, in a manner that the punchings along the length, align from one Unigrig™ Channel to the next. Note: the Unigrig Channels are directional and punched on both sides at 50mm OC, and 25mm offset. See Fig. 2 for details.
- It is recommended that main bar joins should be staggered to increase the strength of the system.

6. H-Bar Installation

- Locate H-Bar “Hook-On” Rails (Item HBAR3600) according to panel size: For 1200 long panels, locate H-Bars at 1200mm centres; 1500mm long panels at 1500mm centres and so on.
- Each H-Bar is suspended from the Unigrig™ Channel using “H-Bar Hangers” (item UNI112S)
- H-Bar Hangers install over the Unigrig Channel and are secured with Locking Clips (item UNI200. Refer Fig. 6b).
- The top leg of the H-Bar inserts into the slot in the H-Bar Hanger and secured by folding down both wings of the H-Bar Hanger.
- H-Bars are joined end to end with H-Bar Connectors (item UNI 101). Refer to Fig. 6a for details.

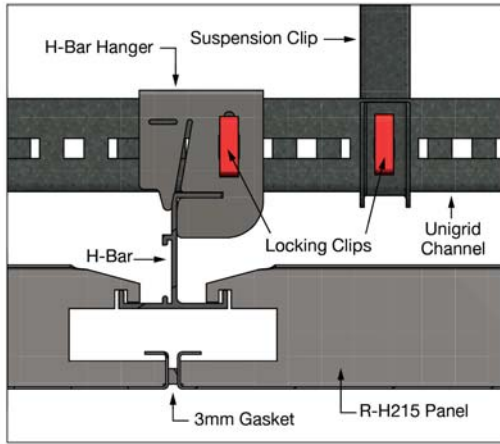
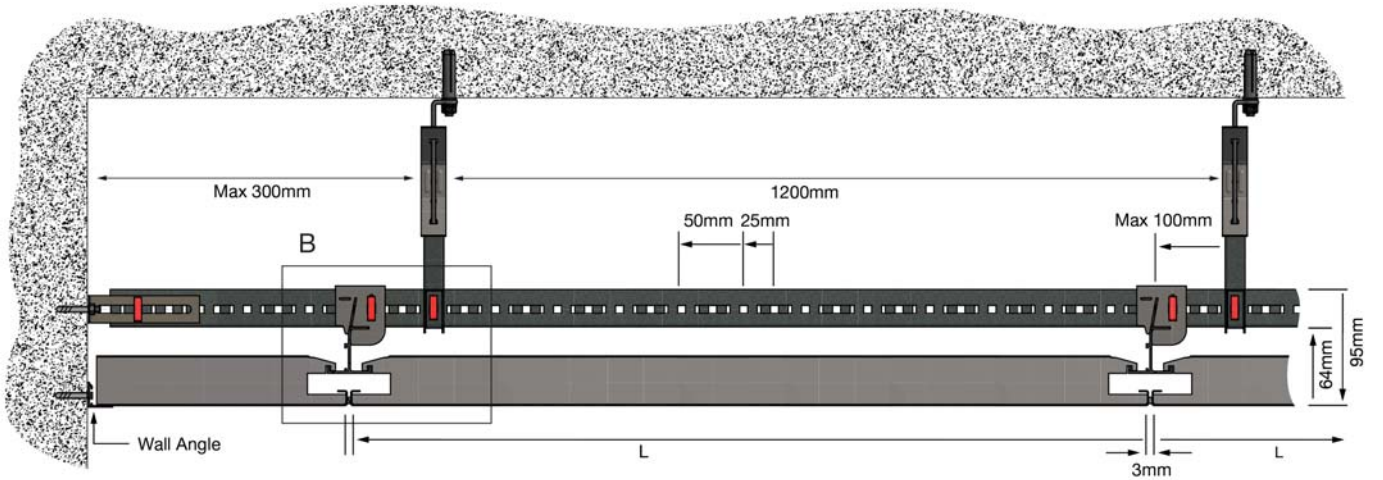
7. Components

Item Number	Description
UNI111B	Unigrig™ Channel (3750mm)
UNI103B	Unigrig™ Channel Connector
HBAR3600	H-Bar for RH215 (3600mm)
UNI101	H-Bar Hanger
UNI112S	H-Bar Connector
UNI203B	Suspension Clip for 5mm Rod
UNITRCB	Suspension Clip for M6 Threaded Rod
ROD 5mm	5mm Suspension Rod
UNI200	Locking Clip
AL008RCPWSW	Std “L” Wall Angle
AL009RCPWSW	Shadowline Wall Angle
UNI202	Unigrig™ Wall Anchor Bracket

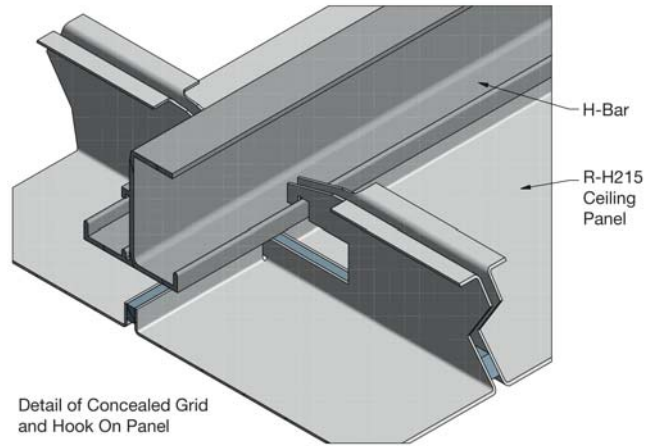


8. Installation

CROSS SECTION

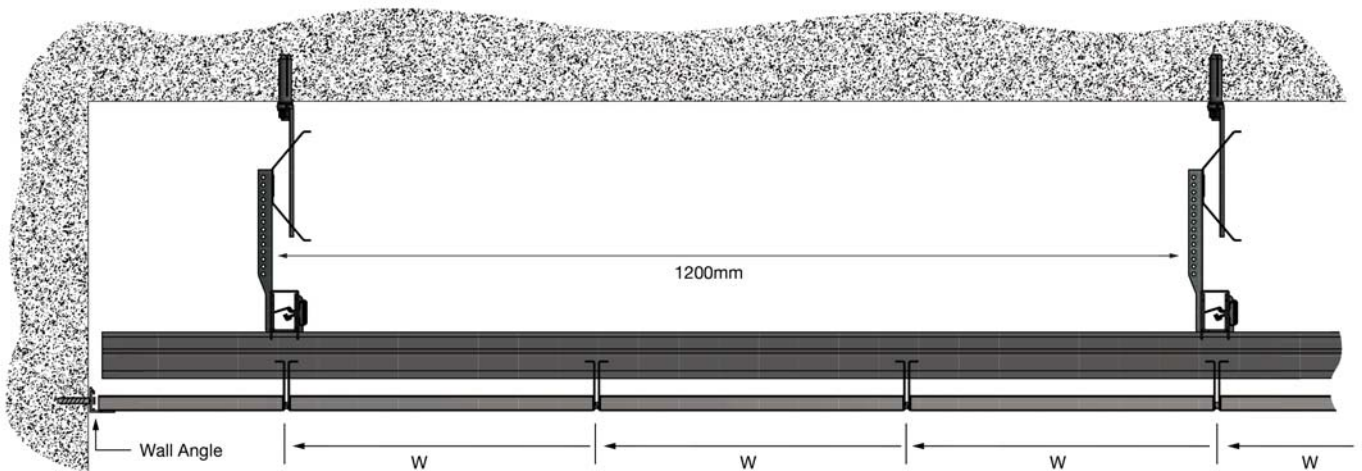


Detail B



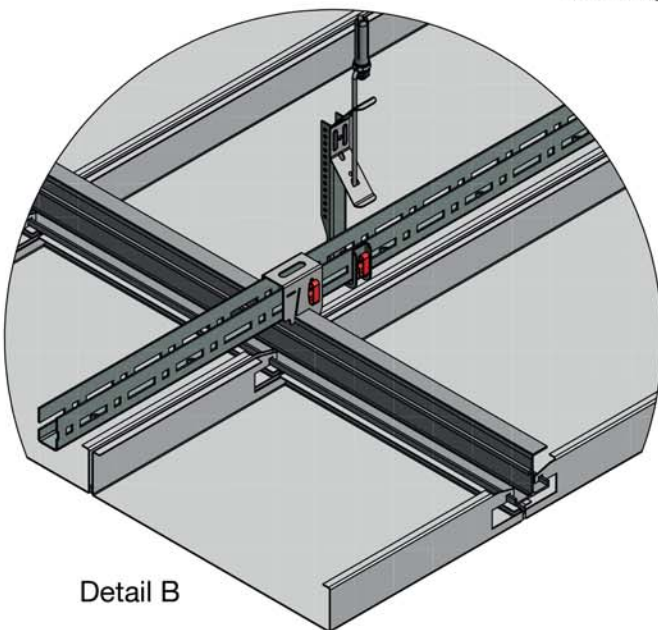
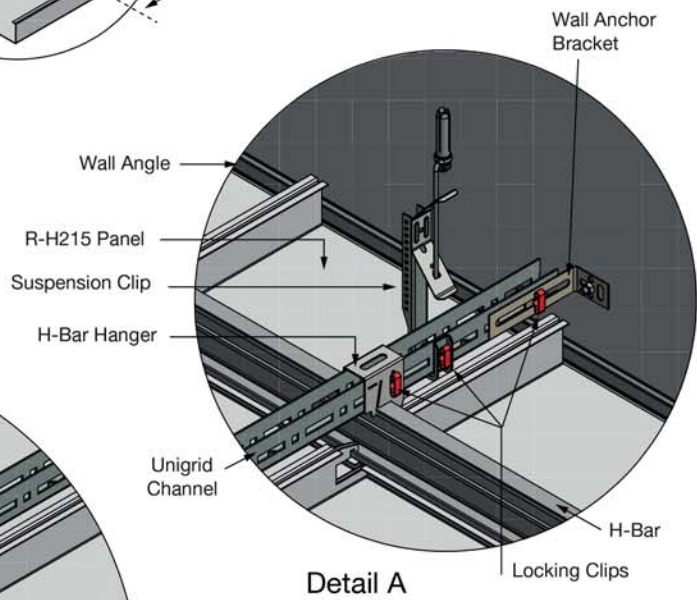
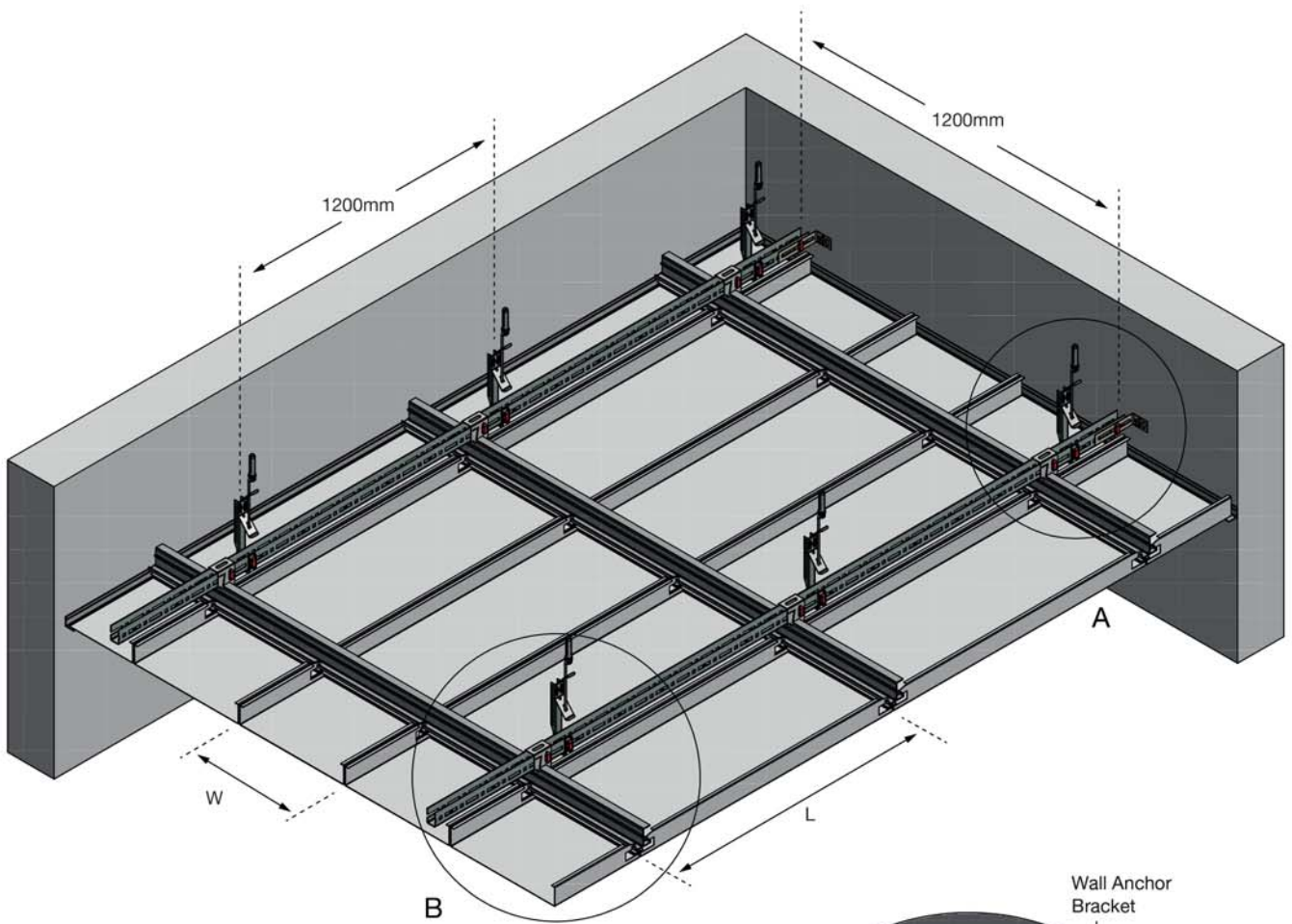
Detail of Concealed Grid and Hook On Panel

LONGITUDINAL SECTION



W = Panel Width
 L = Panel Length
 Module = Panel Width / Length + 3mm

METALWORKS™ R-H215 HOOK ON



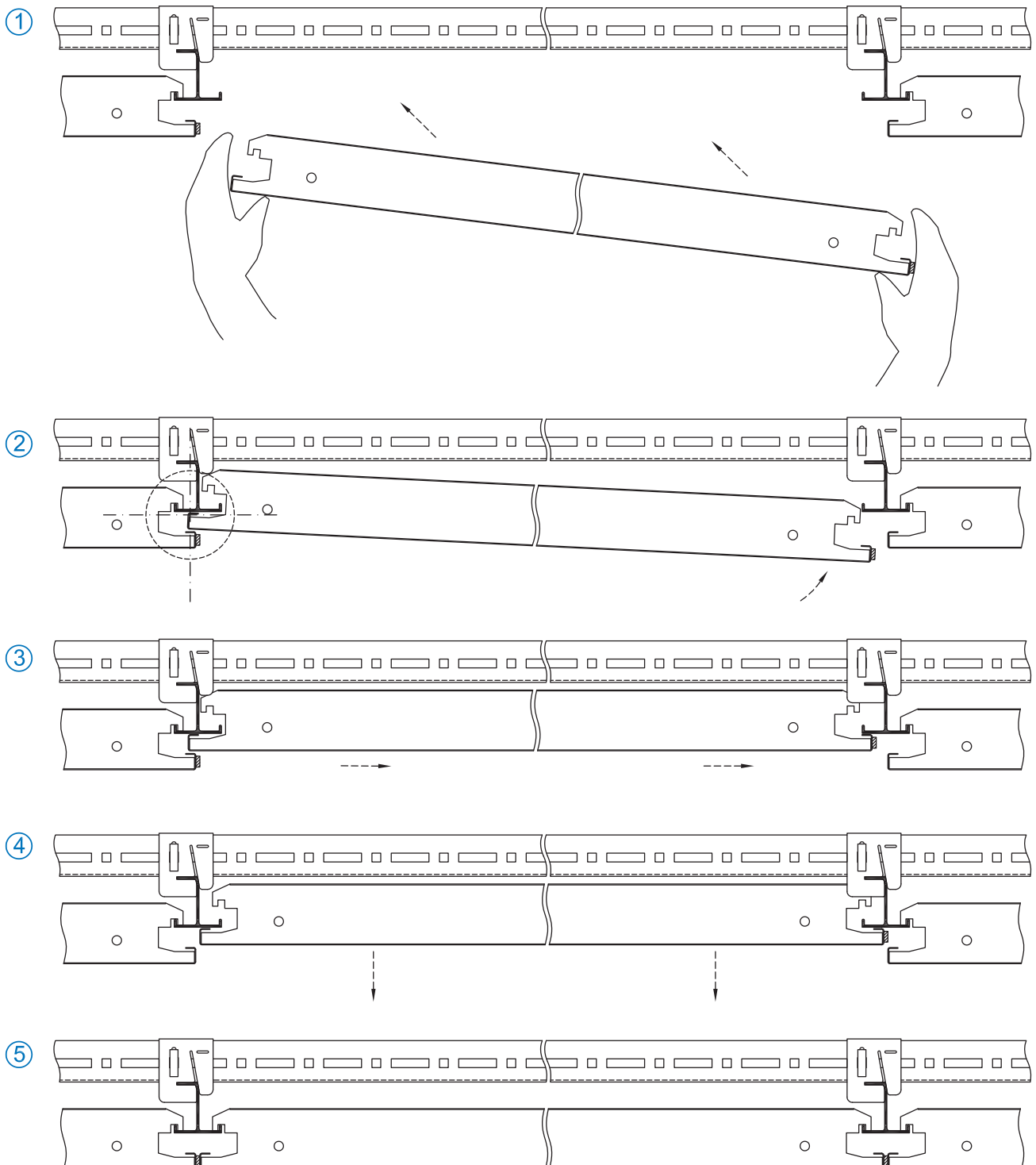
Note: Please refer to the Armstrong METALWORKS™ R-H215 Brochure for specification and performance details

9. Square the Grid, Bracing Requirements and Levelling

- Measure across the diagonals of the opening. The measurements will be the same if the grid is square.
- Depending on the size of the ceiling and design details there could be a requirement for bracing to hold the grid square and to stop grid movement during installation.
- The amount of bracing required is to determined onsite by the installer.
- The ceiling system can be levelled by adjusting the suspension clip up and down with the use of a laser.

10. Ceiling Panel Installation

- The ceiling grid is now ready for ceiling panels. See illustration for installation (and removal of panels).
- Measure and cut boarder tiles individually. Refer Cutting Options below for details.



11. 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.

12. 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.

13. Light Fixtures and Services

- Lights fittings, depending on their weight are typically supported by the top of the H-Bar profile. Contact Armstrong for specific load capacity
- MetalWorks ceiling tiles will not support any services, backing plates for down lights etc are required, and should be sorted out before project proceeds.
- Depending on the size and weight of the fixtures, extra hangers may be required
- Please consult an Armstrong Representative with reference to loadings on grid systems.

14. Inclined Ceiling/ Raked Ceiling, Installation

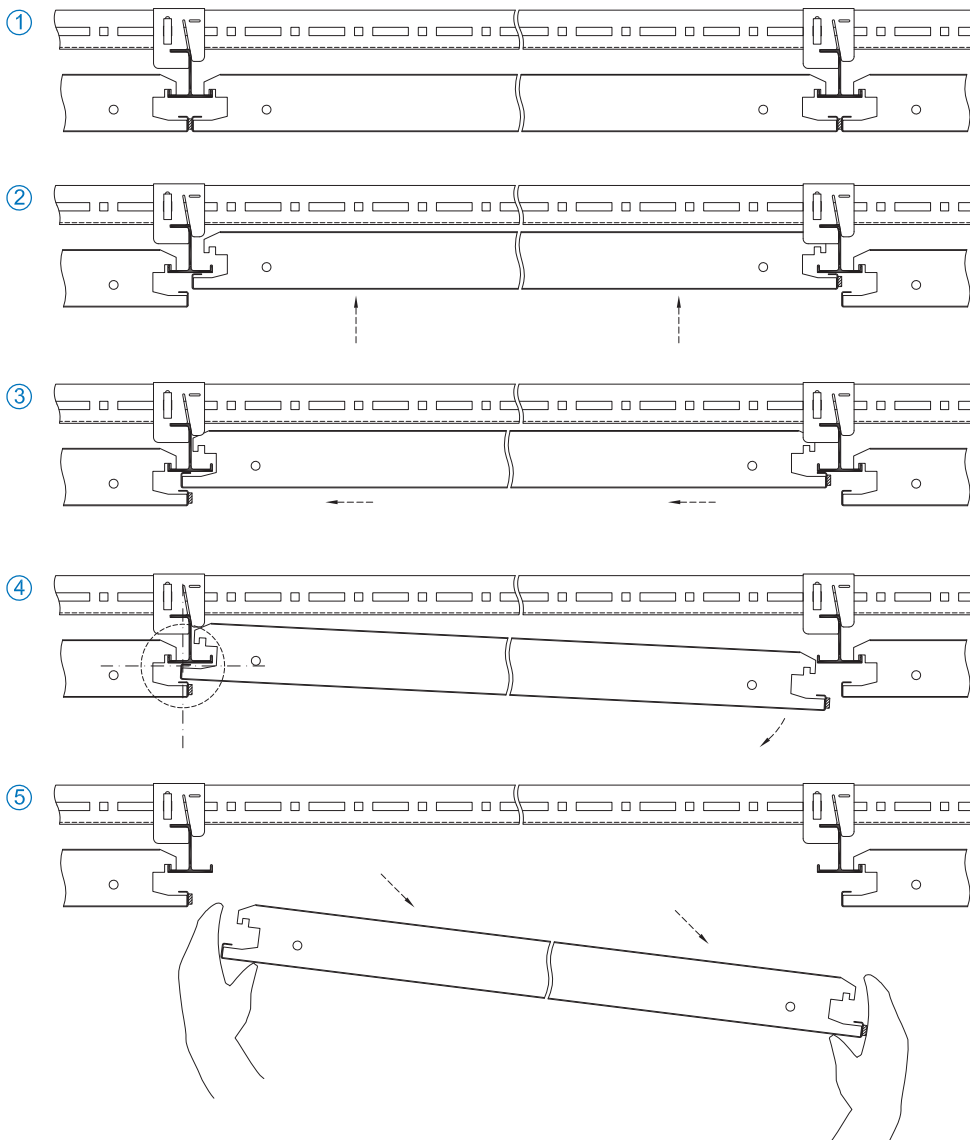
- When installing a raked ceiling it is important that the Unigrig Channel are installed in the direction of the slope.
- Install Suspension hangers at 1200mm centres as normal practice and then you must brace each Unigrig Channel back to the purlins to stop any movement. Contact Armstrong for more details.

15. Suspension Points Greater than 1200mm

- When purlins are installed at centres greater than 1200mm the following is recommended.
- Suspension points on the Unigrig must remain at a maximum of 1200mm centres.
- Where a hanger is splayed up to a maximum of 45° to the vertical, they should always have an equally applied hanger in the opposite direction (this means 2 hangers).
- The vertical drop of the rods will need to be greater in length than the allowable span.
- The splayed rods must pick up the midpoint of the span.

16. Panel Removal

All panels are removable without moving up into the plenum. Refer to illustration below for Panel removal steps.



17. 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.

18. 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.

19. Armstrong – paint coatings

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

20. 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.

Armstrong, the Global Leader in Acoustic Ceilings

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