Installation Guide

Product Description
Armstrong MetalWorks™ V-P500 Baffles consists of a range of powdercoated and perforated galvanised steel, linear profiles, suspended from Unigrid™ Channel System. The DS-V-P500 Baffles are typically 30mm thick and pre-fitted with a Glasswool acoustic pad: 25mm x 25kg/m³, with black acoustic fleece on both sides.

General Installation Conditions
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

Baffles 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. Baffles 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 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. Each of these hanger types meet Australian / New Zealand standard 2785-2000 and in conjunction with suitable Suspension Clips, support the Unigrid Channels. Bracing is to be applied where required to ensure the Unigrid™ 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™ V-P500 Acoustic Baffles panels requires no more space in the plenum than that which is required to hang the suspension system. Baffles never need to travel into the plenum space during installation or removal.

The total height of the ceiling assembly can be determined from the Section D drawing on page 4. 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 V-P Baffles to be installed.
- The drawing supplied by the builder will show the panel direction required (rectangular panels).
- Unigrid™ Channels are typically oriented perpendicular to the roof purlins or joists.

For Seismic Design support please contact your local Armstrong office.
4. Installation Of Hangers and Unigrid™

- 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 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**

- Ensure all suspension rods are vertical.

- 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 (Item UNI111B). 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. Unigrid™ and Baffle Layout

- The 1st Unigrid 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 Unigrid Channel.
- The Unigrid™ Channels are to be installed parallel, in a manner that the punchings along the length, align from one Unigrid™ Channel to the next. Note: the Unigrid Channels are directional and punched on both sides at 50mm OC, and 25mm offset. See Fig. 2 for details.

**Typical Grid Layout**

**Unigrid™ Suspension Components**

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNI111B</td>
<td>Unigrid™ Channel (3750mm)</td>
</tr>
<tr>
<td>UNI103B</td>
<td>Unigrid™ Channel Connector</td>
</tr>
<tr>
<td>BPM300367</td>
<td>Baffle Hanger</td>
</tr>
<tr>
<td>BPM300371</td>
<td>Baffle Connector</td>
</tr>
<tr>
<td>BPM311044</td>
<td>Baffle Distance Holder</td>
</tr>
<tr>
<td>BPM300375</td>
<td>Baffle End Cap</td>
</tr>
<tr>
<td>UNI203B</td>
<td>Suspension Clip for 5mm Rod</td>
</tr>
<tr>
<td>UNTR3S</td>
<td>Suspension Clip for M6 Threaded Rod</td>
</tr>
<tr>
<td>ROD 5mm</td>
<td>5mm Suspension Rod</td>
</tr>
<tr>
<td>UNI200</td>
<td>Locking Clip</td>
</tr>
<tr>
<td>UNI202</td>
<td>Unigrid™ Wall Anchor Bracket</td>
</tr>
</tbody>
</table>

**Typical Baffle Weights**

<table>
<thead>
<tr>
<th>Baffle Size</th>
<th>Micro Perforation</th>
<th>Weight/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 x 30mm</td>
<td></td>
<td>1.8kg/m</td>
</tr>
<tr>
<td>200 x 30mm</td>
<td></td>
<td>2.3kg/m</td>
</tr>
<tr>
<td>250 x 30mm</td>
<td></td>
<td>2.8kg/m</td>
</tr>
<tr>
<td>300 x 30mm</td>
<td></td>
<td>3.2kg/m</td>
</tr>
</tbody>
</table>

* Baffle with Standard Acoustic Inlay

**Measurements:**

- **a0** Distance between suspension points = Maximum 1200mm
- **a1** Distance between Unigrid Channels = Maximum 1200mm
- **a2** Distance of the Baffle = Minimum 100mm for Acoustical Requirements
- **a3** Maximum Baffle Cantilever distance from Unigrid = Maximum 300mm
- **a4** Distance from wall to first Suspension Point = Maximum 300mm
- **a5** Minimum distance from wall to first Baffle = 20mm
- **L** Baffle Length = Maximum 3000mm
- **H** Baffle Height = 150 / 200 / 250 / 300mm
- **W** Baffle Width = 30mm

J, K, and L Refer page 6 for details.
5. Unigrid™ and Baffle Layout

Baffle Layout – Various Baffle Heights

SYSTEM WITHOUT ADDITIONAL LOAD / BAFFLE HEIGHT (H) = 150mm

<table>
<thead>
<tr>
<th>a2 (mm)</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (mm)</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
</tbody>
</table>

SYSTEM WITHOUT ADDITIONAL LOAD / BAFFLE HEIGHT (H) = 200mm

<table>
<thead>
<tr>
<th>a2 (mm)</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (mm)</td>
<td>950</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
</tbody>
</table>

SYSTEM WITHOUT ADDITIONAL LOAD / BAFFLE HEIGHT (H) = 250mm

<table>
<thead>
<tr>
<th>a2 (mm)</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (mm)</td>
<td>850</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
</tbody>
</table>

SYSTEM WITHOUT ADDITIONAL LOAD / BAFFLE HEIGHT (H) = 300mm

<table>
<thead>
<tr>
<th>a2 (mm)</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (mm)</td>
<td>750</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
</tbody>
</table>

SYSTEM WITHOUT ADDITIONAL LOAD / BAFFLE HEIGHT (H) = 350mm

<table>
<thead>
<tr>
<th>a2 (mm)</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (mm)</td>
<td>650</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
</tbody>
</table>

SYSTEM WITHOUT ADDITIONAL LOAD / BAFFLE HEIGHT (H) = 400mm

<table>
<thead>
<tr>
<th>a2 (mm)</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (mm)</td>
<td>550</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
</tbody>
</table>

SYSTEM WITHOUT ADDITIONAL LOAD / BAFFLE HEIGHT (H) = 450mm

<table>
<thead>
<tr>
<th>a2 (mm)</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (mm)</td>
<td>450</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
</tbody>
</table>

SYSTEM WITHOUT ADDITIONAL LOAD / BAFFLE HEIGHT (H) = 500mm

<table>
<thead>
<tr>
<th>a2 (mm)</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (mm)</td>
<td>350</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
</tbody>
</table>

SYSTEM WITHOUT ADDITIONAL LOAD / BAFFLE HEIGHT (H) = 550mm

<table>
<thead>
<tr>
<th>a2 (mm)</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (mm)</td>
<td>250</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
</tbody>
</table>

SYSTEM WITHOUT ADDITIONAL LOAD / BAFFLE HEIGHT (H) = 600mm

<table>
<thead>
<tr>
<th>a2 (mm)</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (mm)</td>
<td>150</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
</tbody>
</table>

SYSTEM WITHOUT ADDITIONAL LOAD / BAFFLE HEIGHT (H) = 650mm

<table>
<thead>
<tr>
<th>a2 (mm)</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (mm)</td>
<td>50</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
</tbody>
</table>

SYSTEM WITHOUT ADDITIONAL LOAD / BAFFLE HEIGHT (H) = 700mm

<table>
<thead>
<tr>
<th>a2 (mm)</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a (mm)</td>
<td>0</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
<td>1200</td>
</tr>
</tbody>
</table>

6. Installation of The V-P500 Baffle to the Unigrid Channel

- Locate and fasten V-P500 Baffle Hangers along the Unigrid ™ Channels at the required centres – as per specification and drawings. See Detail I. Install V-P Baffles sections as per Detail I

DETAIL I – Hanger Installation

* If the pitch distance of the Baffles doesn’t fit with the modulation of the U-Profile (steps of 25mm), the Locking Clip needs to be inserted into a long hole. The hanger position should be fixed by using a pop-rivet or self-drilling screw.
7. Connecting V-P500 Baffles and Installing End Caps
(Refer to Detail J and L)

8. 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.

9. 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.

10. Baffle Removal

All Baffles are removable without moving up into the plenum.

**Procedure:** V-P500 Baffles are removed by reversing the Installation procedure illustrated on previous page.
11. Creating Openings / Voids For Integration of Services

- Openings can be simply created in the Baffle Ceiling as per the drawing below. Baffle sections are to be cut to specified length on site, using an aluminium drop saw.
- Additional Unigrid Channels and Suspension Hangers are to be applied where Baffles are cut (refer drawing for detail). Baffle sections should not cantilever more than 300mm from supporting Unigrid Channel.
- All Mechanical services to be independently supported.

12. Backloading

Unless approved, Armstrong metal ceilings are designed to support only their own weight plus that of light weight insulation. All mechanical services must be independently supported.

13. Maintenance

Ceiling Baffles 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 Baffles, 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 Baffles are 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.
Armstrong, the Global Leader in Acoustic Ceilings

Armstrong World Industries Pty Ltd

**NSW**
Armstrong World Industries Pty. Ltd.
99 Derby Street, Silverwater NSW 2128
Telephone (02) 9748 1588  |  Facsimile (02) 9748 8449

**VIC/TAS**
Armstrong World Industries Pty. Ltd.
29-39 Mills Road, Braeside VIC 3195
Telephone (03) 9580 9633  |  Facsimile (03) 9587 5139

**QLD/NT**
Armstrong World Industries Pty. Ltd.
6 Barrinia Street, Slacks Creek QLD 4127
Telephone (07) 3809 5565  |  Facsimile (07) 3809 5507

**SA**
Total Building Systems Pty. Ltd.
160 Grand Junction Road, Blair Athol SA 5084
Telephone (08) 7325 7555  |  Facsimile (08) 7325 7566

**WA**
Ceiling Manufacturers of Australia Pty. Ltd.
5 Irvine Street, Bayswater WA 6053
Telephone (08) 9271 0777  |  Facsimile (08) 9272 2801

**New Zealand**
Forman Building Systems Ltd.
PO Box 12349, Penrose, Auckland
Telephone 64-9-276 4000  |  Facsimile 64-9-276 414


---

For Seismic Design support please contact your local Armstrong office.