



ACOUSTIC

Installation Guide



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Paneline Product Overview

Overview of Paneline

This installation guide serves as a manual for commercial installations, providing contractors and builders with detailed instructions for installing the Acoustics Paneline suspended ceiling system.

Paneline stands out as an exceptionally flexible architectural ceiling, enhancing the acoustic attributes of any space while imparting a sense of sophistication and modern elegance. It offers versatility with a distinctive color range and is available in both plain and bridged profiles.

The Paneline suspended ceiling system is renowned for its easy and reliable installation. It incorporates a Panelok carrier with a painted black face finish, facilitating seamless integration with our acoustic black-faced insulation. This design results in a ceiling that boasts an almost flawless and unobstructed visual appeal.

Paneline Range and Applications

At Acoustics, we recognize that design is a nuanced harmony of functionality, materiality, and form. With the Paneline range, architects and designers have the opportunity to elevate their designs to new heights. Boasting a sleek and uniform appearance, Paneline imparts a contemporary and elegant ambiance to interior spaces. Beyond aesthetics, it delivers superior acoustic performance, addressing both style and functionality needs.

Paneline is used extensively across a variety of construction applications, seamlessly integrating into different types of buildings. Its versatility spans educational institutions, healthcare facilities, transportation infrastructure, retail outlets, public spaces, and multipurpose environments.

Paneline is our most design-conscious material. Not only is it aesthetically pleasing, but it also caters to the needs of building services. It can be easily altered and adjusted before and after installation to work with ceiling hardware such as fire safety equipment, lights, data cabling, and HVAC systems.

Paneline comes in standard panels of 82mm x 6m but can produced in lengths to suit site conditions and minimise site cutting time and reduce product waste.

Standards

The following Australian standards are mentioned in this document and as such their application methods should be followed to ensure your building is up to code.

- AS3566 "Screws and self drilling for the building and construction industries, (Classic 3 and 4 fasteners)
- AS 1562.1:2018 Design and installation of sheet roof and cladding Metal
- AS/NZS5131 structural steelwork fabrication and erection
- AS 1397:2021 Continuous hot-dip metallic coated steel sheet and strip
- AS1397 and AS/NZS 2728 prefinished/prepainted sheet metal products for interior/exterior applications
- AS/NZS 1716 Respiratory protective devices
- AS/NZS 2210 Occupational protective footwear
- AS/NZS 1269 Occupational noise management
- AS/NZS 1336 Recommended practices for eye protection in the industrial environment.

Additional information

For a thorough exploration of available acoustic performance details and perforation patterns in the market, or if you're interested in learning more about how we can help, please visit our website at www.acoustic. com.au.

There, you'll find comprehensive information to guide you through the diverse options and specialized solutions we offer.



Benefits of using paneline

Paneline offers a multitude of advantages that can greatly enhance your upcoming project. With its steel coated zincalume material and panel design, it provides numerous benefits, including:

- High level of Acoustic performance
- **Durability**: Zincalume has impressive corrosion resistance and as such doesn't need to be frequenly replaced providing lower maintance costs and resources, providing a more sustainable building.
- Adaptability: Paneline's panel design and the panelok system, allowing for effortless creation of distinctive ceiling designs. The system seamlessly accommodates openings and ceiling hardware, requiring minimal to no modification.
- **Recyclable**: The whole ceiling system is completely recyclable, at the end of the buildings life cycle the whole system can either be uninstalled and reused somewhere else or be melted down to create other steel products.
- **Contributes to Green building certification:** Paneline plays a pivotal role in achieving green building certification, particularly for architects aiming to enhance energy efficiency. By effectively reflecting and minimizing heat transference, Paneline reduces the reliance on energy-intensive cooling systems. This not only fosters sustainability but also contributes significantly to elevating the green star rating of your building.

Fire resistance

Paneline, featuring a zincalume substrate, showcases remarkable fire-resistant properties. Its steel core prevents combustion when exposed to high temperatures, (Refer to Table 1.)

Table 1: Fire indicies

lgnitablility Index	Spread of flame Index	Heat evolved Index	Smoke developed Index
0	0	0	2

Fire rating

Paneline's substate material is deemed to be a noncombustible for the purposes of the National Construction Code (NCC) in accordance with Deemed-to-Satisfy Provision C1.9 of the NCC BCA Volume One, and Acceptable Construction Practice 3.7.1.1 of the NCC BCA Volume Two. May be used wherever a non-combustible material is required.

Acoustic performance

Paneline offers a perforated surface option, and when paired with our black acoustic scrim, and 75mm glasswool this combination enhances its capacity to provide a minimum noise reduction level of 0.95. making it a highly versatile ceiling product for acoustic performance.

Figure 1: Acoustic performance



Weighted Sound Coefficient: Sound Absorption Average: Noise Reduction Coefficient:

aw : 0.80 SAA: 0.95 NRC: 0.95

Receiving products and storage

Upon arrival at the site, it is essential to conduct a thorough inspection of the received products to identify any signs of damage. Securely maintain all panels within their packaging and store them in a location protected from direct exposure to the weather or other possible cause of damage. Select a storage area away from high-traffic corridors, ensuring optimal conditioning of the panels before installation.

In the event of Paneline getting wet during storage, it is crucial to separate the panels. Utilise a clean cloth to wipe them dry, keeping them apart to facilitate thorough air drying before returning them to storage. This precautionary step is vital to prevent the occurrence of water stains, which could negatively impact the final appearance of the product.



Paneline Sectional details

Figure 2.1 - Typical Panelok dropper to Panelok carrier detail



Figure 2.2 - Typical resilient mount to Panelok carrier detail





Paneline perimeter details

Paneline provides a range of perimeter finishing options. It's crucial to emphasize that the Panelok carrier should be cut 5mm shorter than any abutment. This intentional gap is essential to allow the suspended ceiling system the freedom to move independently from the structure. Failure to provide this 5mm gap may lead to bending of the carrier rails, causing alignment issues later on.

Figure 3.1 - Full length Paneline panel to wall



Figure 3.2 - Cut Paneline panel to wall



Figure 3.3 - Shadow line with full length Paneline Panel to wall



Figure 3.4 - Shadow line with cut Paneline panel to wall





Paneline opening and bulkhead details

Figure 4.1 - Typical Ceiling bulkhead



Figure 4.2 - Section A - A Typical opening detail





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Panelok Dropper Installation Guide

Design variables

- Take measurements for your ceiling space.
- Plan your Paneline suspended ceiling system using the provided spacing table (See table 3 - Panelok Suspended ceiling channels)
- Make sure you add sufficient or extra support for ceiling services such as lights, HVAC systems, and other hardware ensuring you take into account the ceiling load needed (See table 2, Panelok spacing & Max. allowable loads)
- Where lights and other openings are on the ceiling grid make sure you mark up and cut Paneline panels ensureing that you adhere to our cutting practices within this guide (Refer to figures 15.1 to 15.3).

Paneline installation overview

- Measure the overhead structure and mark the spots for Panelok suspension dropper installation.
- Install Panelok droppers in accordance with provided instructions and details. Please refer to figures 7.1, 7.2, and 7.3 for guidance.
- Please securely fasten the Panelok rail after installing the Panelok droppers, following the instructions in Figure 8.2 of the guide.
- Install wall track along the underside of Panelok carrier.
- After installing carrier suspended ceiling system make sure it is clean, sound and ready to install panels
- Install the first Paneline panel along the wall track, making sure to cut as needed. (ref. to figures 13 to 14.2)
- Continue the installation of all Paneline panels (ref to figure 11), ensuring placement of insulation as you progress.
- When cutting Paneline panels for ceiling services, ensure proper marking, cutting, and support, as shown in Figure 13, 14.1, and 14.2.
- Once installation is complete verify panels are evenly spaced and aligned and free of dust and debris.



Figure 5.1: Typical Panelok suspended ceiling system



Figure 5.2 - Paneline on typical Panelok suspended ceiling system



Installation directions

Prior to marking up and installing the Panelok suspended ceiling system, it is crucial to verify that the support structure is in good condition, clear of debris, and free from any malfunctions. This step is essential for ensuring the proper and effective installation of the Panelok ceiling system.



- 1.1 When designing your Panelok suspended ceiling grid, ensure that the spacing of your Carriers is adjusted accordingly based on the required ceiling loads. (Refer to Table 2) This adjustment is crucial, as it determines the capacity to support ceiling hardware. For detailed instructions on installing additional Panelok carriers and droppers for accommodating ceiling hardware, refer to section 7.
- 1.2 Measure the overhead structure making sure that the size of the space matches your reflective ceiling plan, then start to measure and mark out the position of the panelok droppers refer to Table 3: panelok suspended ceiling channel. for spacing distances. (Refer to Figure 5)

Table 2: Panelok spacing & Max. allowable loads

Ceiling system	Panelok carrier spacing (mm)	Panelok carrier Span (mm)	Allowable Load (kg/m²)
Α	1200	1200	12.4
В	600	1200	26.0

Table 3: Panelok Suspended Ceiling Span

Panel Type	Max. Carrier Span (mm)		Max. Carrier spacing (mm)	
	A	В	C 2 fixings/ 3 or more fixings	D
PL/100	1200	300	1200	150

Figure 6 - Mark up support structure



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Figure 7.1 - Folding Panelok dropper



 Upon completion of the installation of all Panelok droppers in accordance with Figure 7.2, verify that each dropper is properly aligned, leveled, and securely fastened to the above structure. (Refer to Figure 7.3 for guidance.)

3. Secrurely fasten Panelok carrier rail to Panelok dropper using 10 gauge self drill screws (refer to Figure 8.1), making sure to take care that the Panelok carrier rail is level at all times.





Figure 7.3 - Panelok dropper to concrete



Figure 8.1 - Panelok dropper to rail



Figure 8.2 - Panelok dropper to trim





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Figure 9 - Installing wall perimeter trim

- 4. Install perimeter wall trim 12mm lower than the underside of the Panelok carrier rail. When installing wall trim use (refer to figure 9) a laser line or a tape measure during the installation of the wall rail to guarantee consistent and accurate height alignment. When all Panelok ceiling components are in place, do one final inspection to make sure that all carrier rails are free of defects.

Figure 10 - Paneline under perimeter wall rail

- 5. When installing the first Paneline panel, position it along the perimeter wall rail while following the specified perimeter details and ensure precise alignment with the carrier rail (Refer to figures 3. Paneline perimeter details). This stepsets the ground work for a smooth integration of the Paneline system, ensuring it aligns with the structure during installation.
- 6.1 After securing the first Paneline panel in place, proceed to clip the remaining panels onto the carrier rail, ensuring the clips remain undamaged (Refer to Figure 11). Be attentive to slide the panels toward the perimeter wall rail during the clipping process, as depicted in Figure 10. Throughout the installation of the remaining panels, consistently monitor panel alignment, and make necessary adjustments if any misalignment occurs.
- 6.2 For extended spans during the installation process, employ the Paneline C.11 panel joiner designed to seamlessly attach within the panel's profile. This innovative solution bridges panels effectively, ensuring a continuous and seamless clipping to the carrier rails see figure 12. To achieve a seamless visual, ensure that when connecting two panels, the distance from the carrier rail is between 100-200mm.

Figure 11 - Paneline panel clipping process



Figure 12 - Panelok C.11 panel joiner



7.1 When cutting Paneline panels, for creating

openings for HVAC systems, lights, and fire

safety hardware, make sure to install additional

Panelok droppers and carriers where needed (Refer to Figure 5.2 - Paneline on a typical

Panelok suspended ceiling system). Measure

and mark any panels that will be affecting these

openings to facilitate the installation process

figure 13.1.



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Figure 13.1 - Adding openings to paneline











7.2 It is essential to install tophats (Figure 13.2) between the additional panelok carrier rails for large openings this not only reinforces the strength of the carrier rails when bearing extra loads but also prevents torsion damage to the carriers, which may impact the final visual appearance of the product upon installation.

*Please note that it is advised to support all ceiling hardware, such as air conditioning systems, lights, data cabling, and fire safety equipment, using their own dedicated support systems separate from the Panelok grid unless advised otherwise by Acoustics.



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7.3 Downlights can be installed directly into the Paneline panels, taking into consideration the permitted ceiling loads (refer to Table 2, Panelok spacing & max. allowable load). For optimal results, ensure that the majority of the downlight's weight is supported off the ceiling substrate using suspended ceiling clips. To ensure compatibility with Panelok, please refer to Figure 14.2 for the maximum allowed diameter for both the front and back of the Paneline panels.

Figure 14.1 - Down lights and surface



Figure 14.2 - Downlight diameter allowance



8. After marking Paneline panels, employ tools explicitly designed for cutting steel, such as circular saws, nibblers, and jigsaws. Ensure each tool is equipped with appropriate blades tailored for cutting this product, as the use of incorrect blades may result in irreversible damage to the slats. Adhere to recommended accessories, used tools and exercising caution, and wearing proper personal protective equipment. (Refer relevant Australian standards on appropriate equpiment mentioned under standards section of this guide pg. 3).

When drilling holes in Paneline for downlights or other ceiling hardware, ensure the use of appropriate drill bits. Perform all drilling at the rear of the panel to minimize damage to the front surface. (refer to figure 15.3)



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- 9. Following the cutting and preparation of Paneline panels for installation, handle them with care to prevent any bending or twisting.
 - Once all panels have been clipped onto the rails surrounding the opening for the ceiling hardware, delicately secure the hardware's flange to ensure a smooth and seamless installation finish.

Figure 16 - Installing cut Paneline panels



Figure 17 - Insulation on Paneline panel

- 10. During the installation process, ensure the correct positioning of the approved insulation between the Panelok rails (See Figure 17). The insulation must be equipped with a black acoustic scrim, which adeptly conceals visible ceiling services and offers a final touch to the Paneline installation.
- 11. At the end of the installation do a final check confirming uniform spacing and alignment of all panels. Ensure panels are free from dust and debris, and promptly replace any damaged panels to achieve a flawless and seamless finish.





Resilient Mount Installation Guide

Design variables

- Take measurements for your ceiling space.
- Plan your Paneline suspended ceiling system using the provided spacing table (See table 3 Panelok Suspended ceiling channels).
- Make sure you add sufficient or extra support for ceiling services such as lights, HVAC systems, and other hardware ensuring you take into account the ceiling load needed (See table 2, Panelok spacing & Max. allowable loads).
- Where lights and other openings are on the ceiling grid make sure you mark up and cut Paneline panels ensureing that you adhere to our cutting practices within this guide (Refer to figures 15.1 to 15.3).

Paneline installation overview

- Measure the overhead structure and mark the spots for Rondo hanging clip and WF.1 resilient mount.
- Install Rondo hanging clip and WF.1 resilient mount according to provided instructions and details. Refer to figures 7.1, 7.2, and 7.3 for guidance.
- Securely fasten the Panelok rail after installing the Rondon hanging clip and WF.1 resilient mount, following the instructions in Figure 8.2 of the guide.
- Install wall track along the underside of Panelok carrier.
- After installing carrier suspended ceiling system make sure it is clean, sound and ready to install panels
- Install the first Paneline panel along the wall track, making sure to cut as needed. (ref. to figure 14.2)
- Continue the installation of all Paneline panels (ref to figure 11), ensuring placement of insulation as you progress.
- When cutting Paneline panels for ceiling services, ensure proper marking, cutting, and support, as shown in Figure 13, 14.1, and 14.2.
- Once installation is complete verify panels are evenly spaced and aligned and free of dust and debris.



Figure 5.1: Typical Panelok suspended ceiling system with resilient mount



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Figure 5.2 - Paneline on typical Panelok suspended ceiling system



Installation directions

Prior to marking up and installing the Panelok suspended ceiling system, it is crucial to verify that the support structure is in good condition, clear of debris, and free from any malfunctions. This step is essential for ensuring the proper and effective installation of the Panelok ceiling system.



Table 2: Panelok spacing & Max. allowableloads

Ceiling system	Panelok carrier spacing (mm)	Panelok carrier Span (mm)	Allowable Load (kg/m ²)
А	1200	1200	12.4
В	600	1200	26.0

Table 3: Panelok Suspended Ceiling Span

Panel Type	Max. Carrier Span (mm)		Max. Carrier spacing (mm)	
	A	В	C 2 fixings/ 3 or more fixings	D
PL/100	1200	300	1200	150

- 1.1 When designing your Panelok suspended ceiling grid, ensure that the spacing of your Carriers is adjusted accordingly based on the required ceiling loads. (Refer to Table 2) This adjustment is crucial, as it determines the capacity to support ceiling hardware. For detailed instructions on installing additional Panelok carriers and droppers for accommodating ceiling hardware, refer to section 7.
- 1.2 Measure the overhead structure making sure that the size of the space matches your reflective ceiling plan, then start to measure and mark out the position of the panelok droppers refer to Table 3: panelok suspended ceiling channel. for spacing distances. (Refer to Figure 5)

Figure 6 - Mark up support structure

2. Upon completion of the installation of all WF.1 resilient hanging mounts in accordance with Figure 7.1, verify that each mount is properly aligned, leveled, and securely fastened to the above structure. (Refer to Figure 7.2 for

guidance.)



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Figure 7.1 - Rondo hanging clip to concrete







Figure 8.1 - WF.1 RM to Panlok carrier



Figure 8.2 - WF.1 RM to Panlok carrier detail



- Figure 9 Installing wall perimeter trim

 Secrurely fasten Panelok carrier rail to WF.1 resilient mount by hooking it through the holes on the panelok carrier rail making sure to take care that the Panelok carrier rail is level at all times.

4. Install perimeter wall trim 12mm lower than the underside of the Panelok carrier rail. When installing wall trim use (refer to figure 9) a laser line or a tape measure during the installation of the wall rail to guarantee consistent and accurate height alignment. When all Panelok ceiling components are in place, do one final inspection to make sure that all carrier rails are free of defects.



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Figure 10 - Paneline under perimeter wall trim

- 5. When installing the first Paneline panel, position it along the perimeter wall rail while following the specified perimeter details and ensure precise alignment with the carrier rail (Refer to figures 3. Paneline perimeter details). This stepsets the ground work for a smooth integration of the Paneline system, ensuring it aligns with the structure during installation.
- 6.1 After securing the first Paneline panel in place, proceed to clip the remaining panels onto the carrier rail, ensuring the clips remain undamaged (Refer to Figure 11). Be attentive to slide the panels toward the perimeter wall rail during the clipping process, as depicted in Figure 10. Throughout the installation of the remaining panels, consistently monitor panel alignment, and make necessary adjustments if any misalignment occurs.
- 6.2 For extended spans during the installation process, employ the Paneline C.11 panel joiner designed to seamlessly attach within the panel's profile. This innovative solution bridges panels effectively, ensuring a continuous and seamless clipping to the carrier rails see figure 12. To achieve a seamless visual, ensure that when connecting two panels, the distance from the carrier rail is between 100-200mm.
- 7.1 When cutting Paneline panels, for creating openings for HVAC systems, lights, and fire safety hardware, make sure to install additional resilient mounts, hanging clips and carriers where needed (Refer to Figure 5.2 Paneline on a typical Panelok suspended ceiling system). Measure and mark any panels that will be affecting these openings to facilitate the installation process figure 13.1.



Figure 11 - Paneline panel clipping process









Figure 13.1 - Adding openings to Paneline



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Figure 13.2 - Adding top hats between carriers



Figure 13.3 - Ceiling hardware inside of opening



Figure 14.1 - Down lights and surface



Figure 14.2 - Downlight diameter allowance



7.2 It is essential to install tophats (Figure 13.2) between the additional panelok carrier rails for large openings this not only reinforces the strength of the carrier rails when bearing extra loads but also prevents torsion damage to the carriers, which may impact the final visual appearance of the product upon installation.

*Please note that it is advised to support all ceiling hardware, such as air conditioning systems, lights, data cabling, and fire safety equipment, using their own dedicated support systems separate from the Panelok grid unless advised otherwise by Acoustics.

7.3 Downlights can be installed directly into the Paneline panels, taking into consideration the permitted ceiling loads (refer to Table 2, Panelok spacing & max. allowable load). For optimal results, ensure that the majority of the downlight's weight is supported off the ceiling substrate using suspended ceiling clips. To ensure compatibility with Panelok, please refer to Figure 14.2 for the maximum allowed diameter for both the front and back of the Paneline panels.



Figure 15.1 - Cutting Paneline

8. After marking Paneline panels, employ tools explicitly designed for cutting steel, such as circular saws, nibblers, and jigsaws. Ensure each tool is equipped with appropriate blades tailored for cutting this product, as the use of incorrect blades may result in irreversible damage to the slats. Adhere to recommended used tools and accessories, exercising caution, and wearing proper personal protective equipment. (Refer relevant Australian standards on appropriate equpiment mentioned under standards section of this guide pg. 3).

When drilling holes in Paneline for downlights or other ceiling hardware, ensure the use of appropriate drill bits. Perform all drilling at the rear of the panel to minimize damage to the front surface. (refer to figure 15.3)





9. Following the cutting and preparation of Paneline panels for installation, handle them with care to prevent any bending or twisting.

Once all panels have been clipped onto the rails surrounding the opening for the ceiling hardware, delicately secure the hardware's flange to ensure a smooth and seamless installation finish.

Figure 16 - Installing cut Paneline panels



- 10. During the installation process, ensure the correct positioning of the approved insulation between the Panelok rails (See Figure 17). The insulation must be equipped with a black acoustic scrim, which adeptly conceals visible ceiling services and offers a final touch to the Paneline installation.
- 11. At the end of the installation do a final check confirming uniform spacing and alignment of all panels. Ensure panels are free from dust and debris, and promptly replace any damaged panels to achieve a flawless and seamless finish.

Figure 17 - Insulation on Paneline panel



