Wallshell U-Shield™

ARCHITECTURAL DETAIL - v6.3

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Wallshell

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Application

This Wallshell U-shield™ Panel System's Architectural Details provides a guidance on the most common details and design considerations to ensure that the construction details are suitable for the intended application of their project, consistent with industry practices in light of commercial and multifamily residential buildings.

This guide should be read along with the installation manual.

Principles for Designing

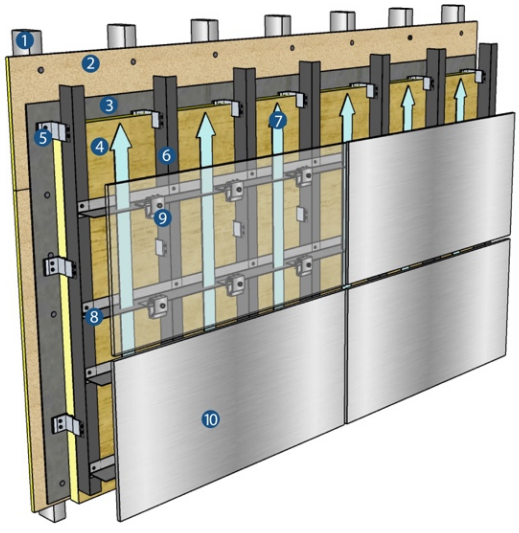
Supporting Studs and Shear Walls

Certification for the structural stability of any supporting studs should be in accordance with local building regulations and must be obtained by the building owner or official representatives, such as the project engineer. Supporting studs are used, the shear walls should be checked by the installer prior to installation to confirm that it is flat and true, and that correct fixings and details are employed. Any discrepancy should be referred to the design team.

CG Anchoring System

Wallshell CG facing anchoring system consists of undercuts, C-profile & G-profile clips, L-profile rails, L-profile extrusions, and L-profile brackets. It combines an elegant arrangement specifically for U-Shield™ panels. It serves as a horizontal anchoring system on the structural extrusion designed specifically for U-shield™ to address the system wind load safety, fire safety and thermal performance. It is deliberately designed to enable the anchored panel to be adjusted not only in the vertical and horizontal direction, but also along forward or backward direction.

1. Steel Stud
2. Sheathing
3. Vapor Barrier
4. Thermal Insulation Layer
5. B2 L-profile Bracket
6. L-profile Extrusion
7. Ventilated Cavity
8. R2 L-Profile Rail
9. Undercut & Clip
10.. Wallshell U-Shield™



Anchors Requirements

Failure to use the rivets that are Wallshell products required may invalidate product warranty.

Weather/Water Resistant Barriers

A material used on the exterior of a building. It can resist bulk liquids that has leaked, penetrated or penetrated into the outer coating to the outer sheath or concrete wall (depending on the application) and further into the wall assembly.

Finishes

There are some different colors and textures, such as Ceramicshell™, Metalshell™, Fabricshell™, Graniteshell™ and Splendidshell™. Each series finish color corresponds to a different level of finish textures. For more specific information, you can refer to the Catalog.

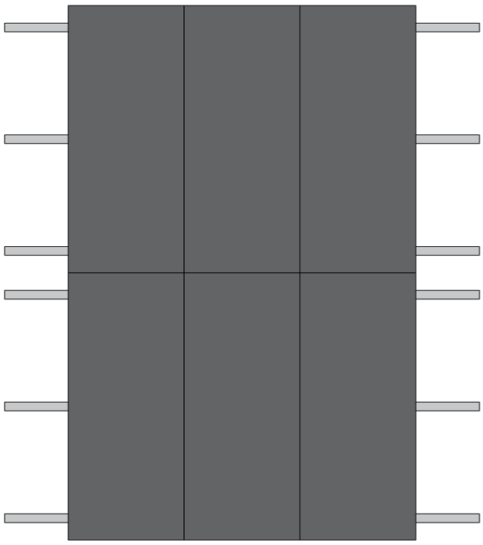
Rain Screen System

The Wallshell U-shield™ panel system forms a rain screen system with aventilated cavity of at least 40 mm in depth. The design principles of rain screen system construction involve strategies for transferring rainwater and allowing drainage and evaporation. The rain screen system relies on the ventilated cavity to quickly drain water from the walls. The main function of the ventilated cavity is to discharge water and excess heat. Use the pressure difference between the bottom and the top to make the air circulate naturally. The joint rail and ventilation rail at the opening of the rain screen system can prevent pests but may reduce ventilation.

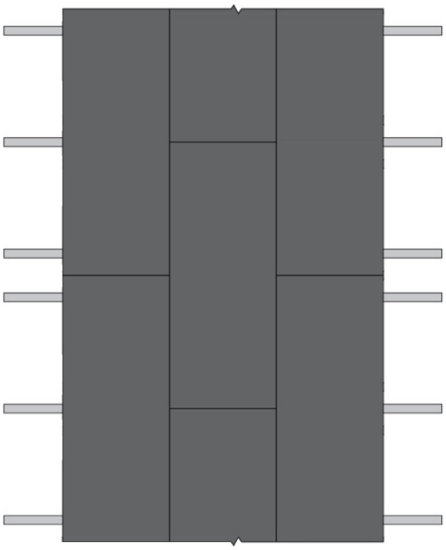
Panel Layout

One factor in the design of the support frame is wind load, and another important factor is the actual panel layout required by the architect. The panel layout can have a large impact on the number and type of profiles required for the project.

Other effects on the layout of the support frame include staggered panel joints or completely free patterns that use different sized panels in a random layout. These considerations may result in the use of different kinds of profiles.



Vertical Layout: aligned grid pattern



Vertical Layout: staggered grid pattern

Panel Data

- Density
  1.60 g/cm^3

- Flexural Strength
  20.1 MPa

- Water Absorption
  4.65 %

- Wind Load
  12 mm U-shield™ panels

Panel Size (Length×Width)	Maximum Distance between Rivets				Allowed Wind Load	
	Horizontal Panel		Vertical Panel			
	Horizontally	Vertically	Horizontally	Vertically	Positive	Negative
488x1220	248	340	340	248	4644 Pa	4872 Pa
812x1220	310	340	340	310	2825 Pa	2922 Pa
1220x406	410	254	254	410	4165 Pa	4391 Pa
1220x610	410	370	370	410	2825 Pa	2922 Pa
2440x406	408	254	254	408	4165 Pa	4391 Pa
2440x610	408	370	370	408	2825 Pa	2922 Pa
2400x1220	408	335	335	408	2825 Pa	2922 Pa

All size measures in mm

Profile Specification

Wider profiles are used behind vertical joints between panels while a narrow profile is used as intermediate profiles in the middle of the panel. It is advisable to use a vertical profile that allows for tolerance and any discrepancy in component layout and installation dimensions.

Minimum profile thickness	Aluminum	≥ 2mm
	Galvanised/stainless steel	≥ 1.15mm
Minimal depth of profile		≥ 35mm
Minimal width of intermediate profile		≥ 40mm
Minimal width of vertical joint profile		≥ 90mm
Recommended width of joint profile		≥ 120mm
Maximum buckle under influence of strain		≤Span/250
Safety factor calculation of strength		3
Maximum length of vertical profile		6m
Movement joints between adjacent profiles		20mm
Maximum unsupported length from last bracket/anchor		250mm

Construction Details

This chapter provides an overview of the various common details to cover a wide range of situations that are expected on a regular basis.

These drawings do not contain the complete details required for the configuration and must be read along with the installation manual at www.wallshell.com. You should obtain architectural, engineering or other technical advice to assess whether these drawings are suitable for your particular project. Walpanel Inc. is not responsible for the use of these drawings.

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Figure 1: Elevation and Floor Plan

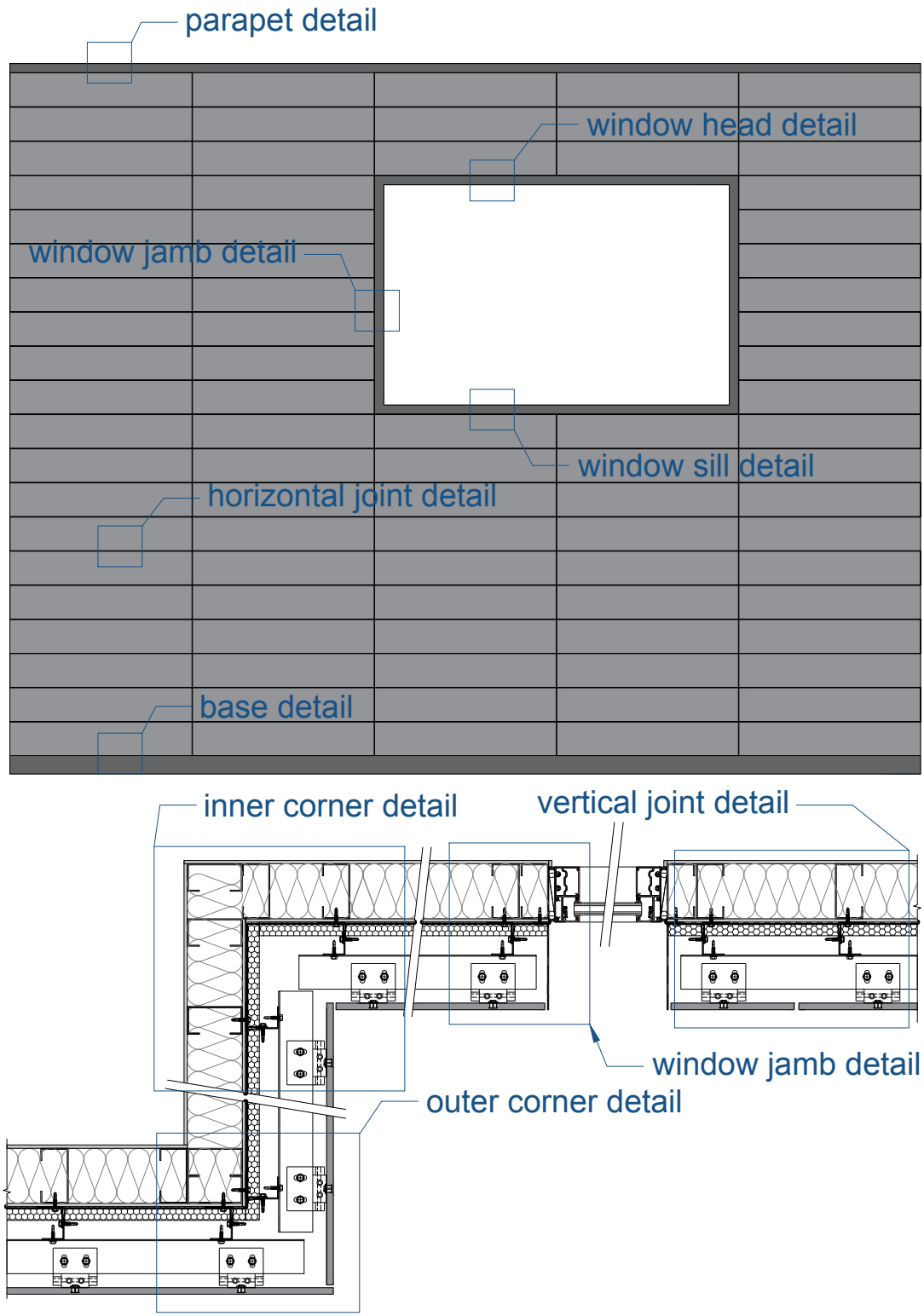


Figure 2: Vertical Joint Detail

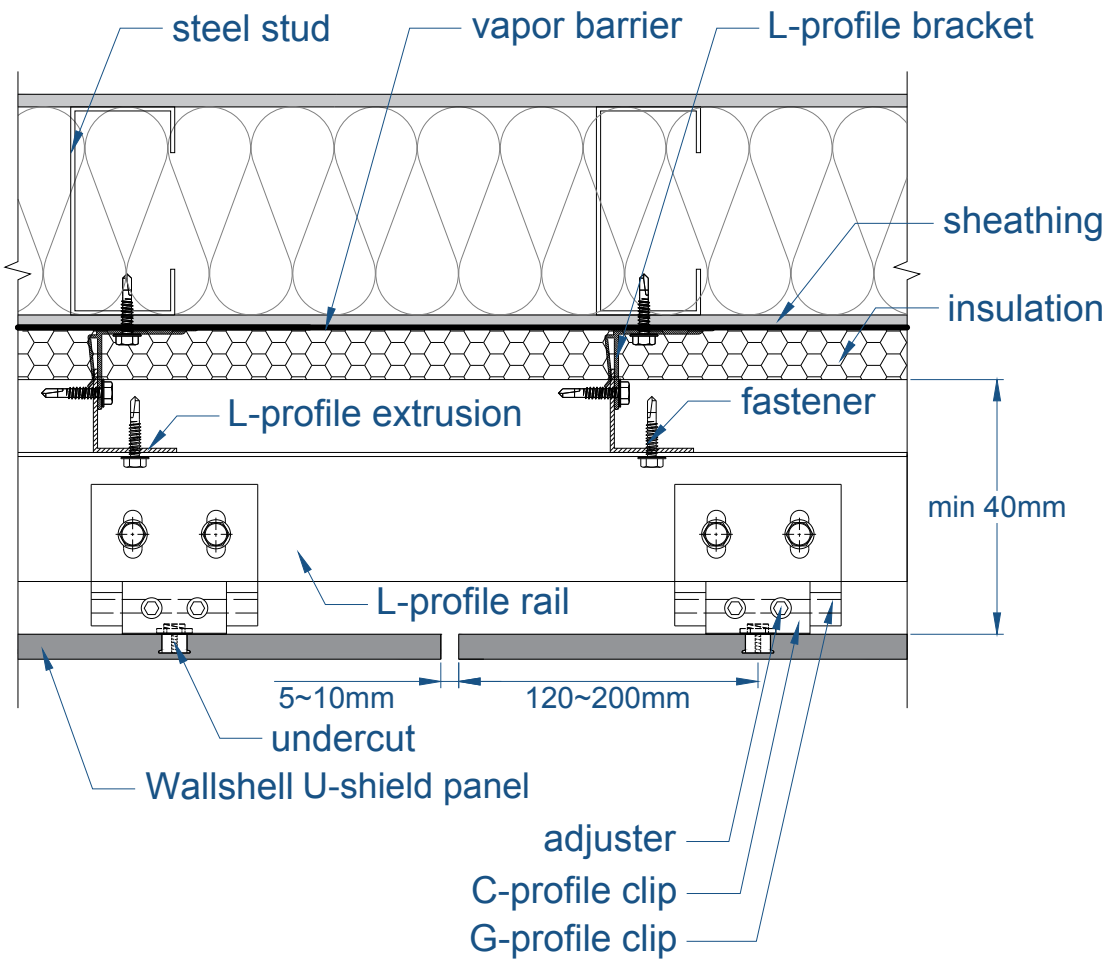


Figure 3: Horizontal Joint Detail

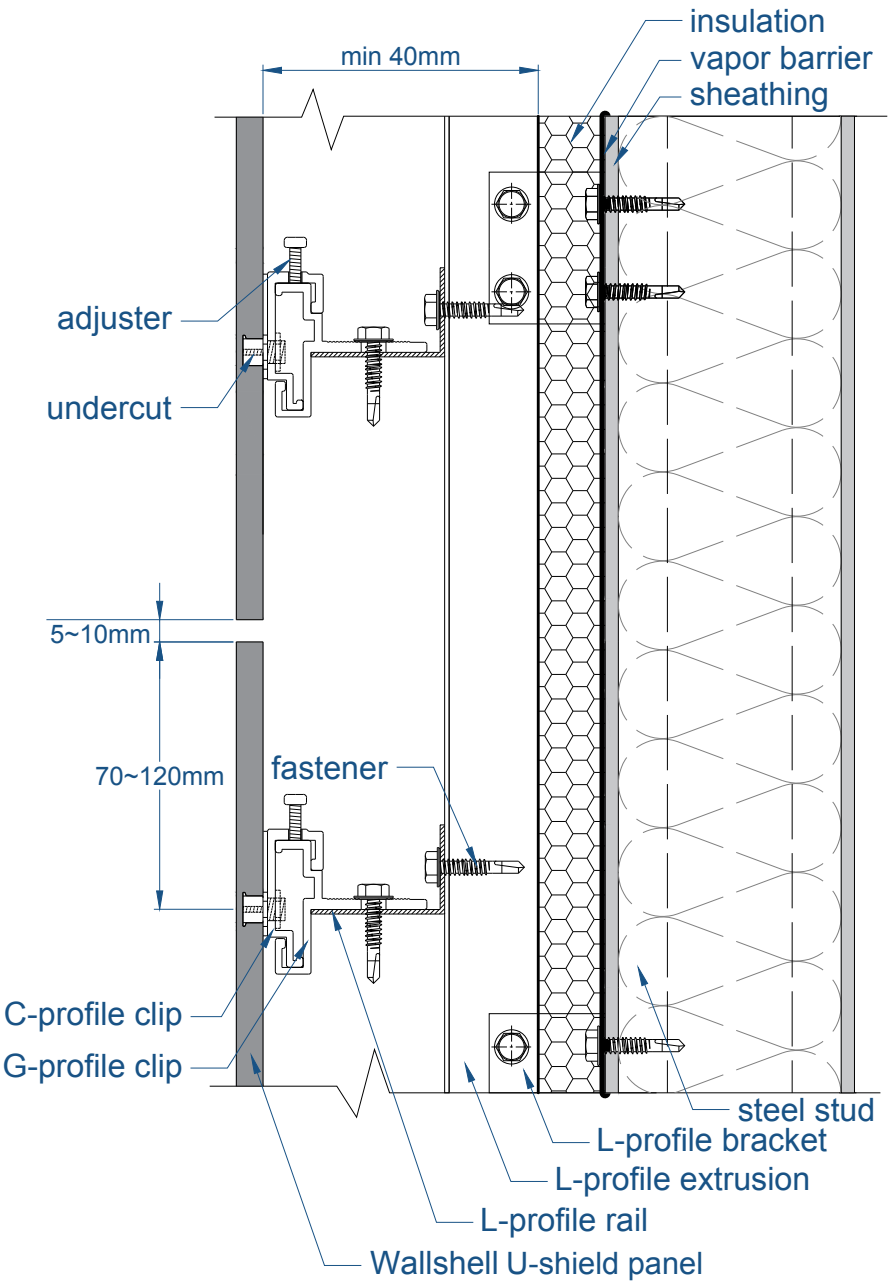


Figure 4: Outer Corner Detail

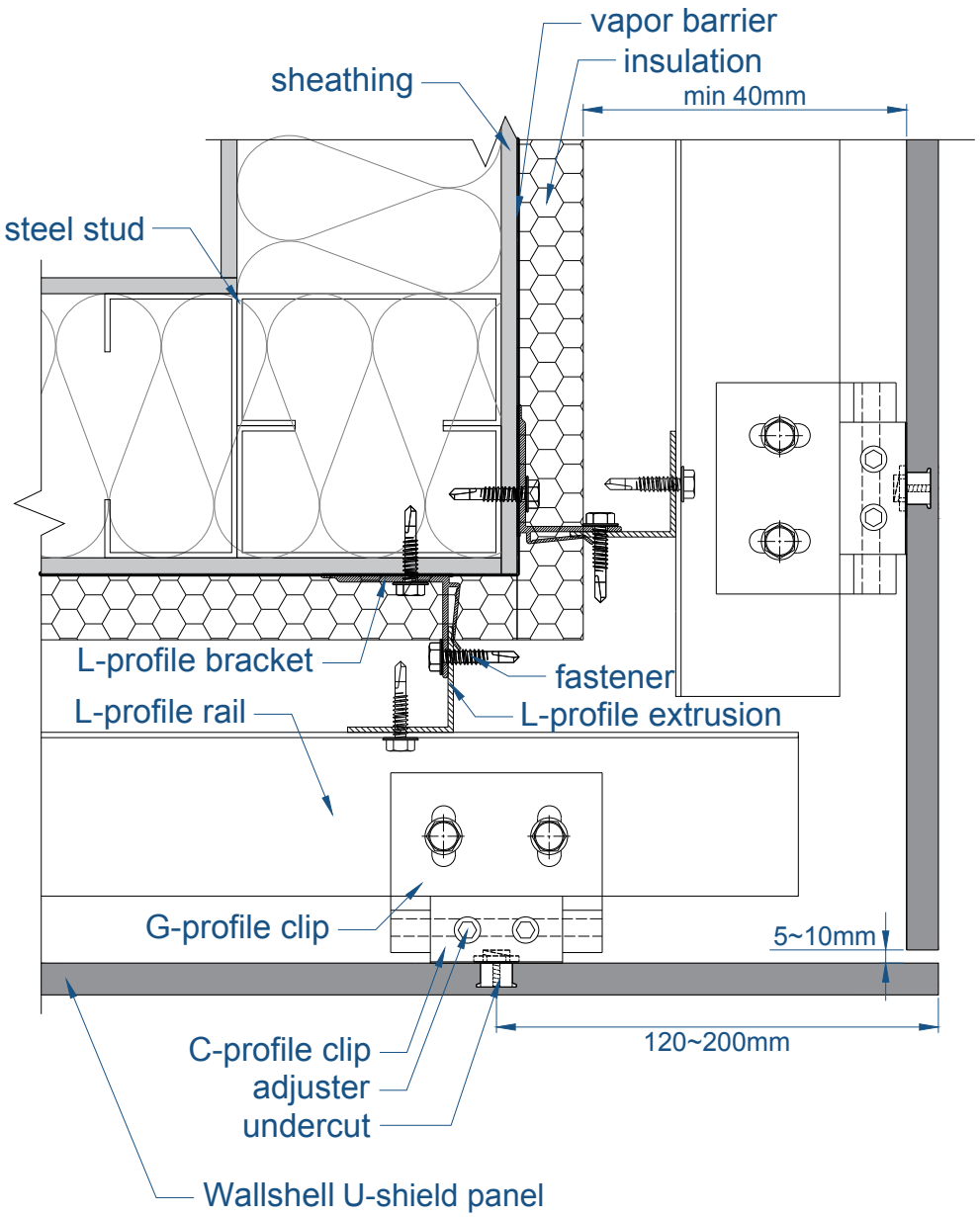


Figure 5: Inner Corner Detail

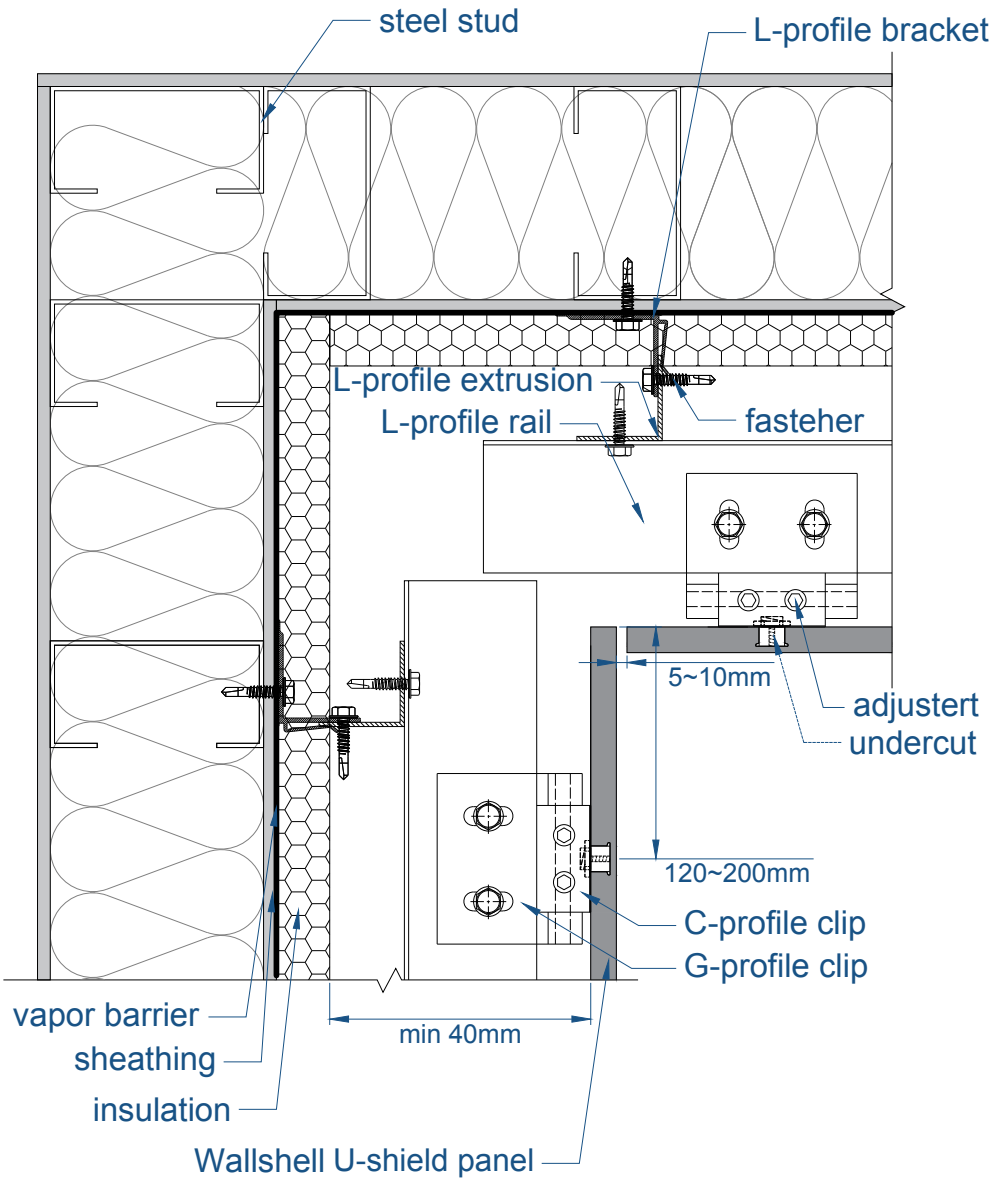


Figure 6: Window Jamb Detail

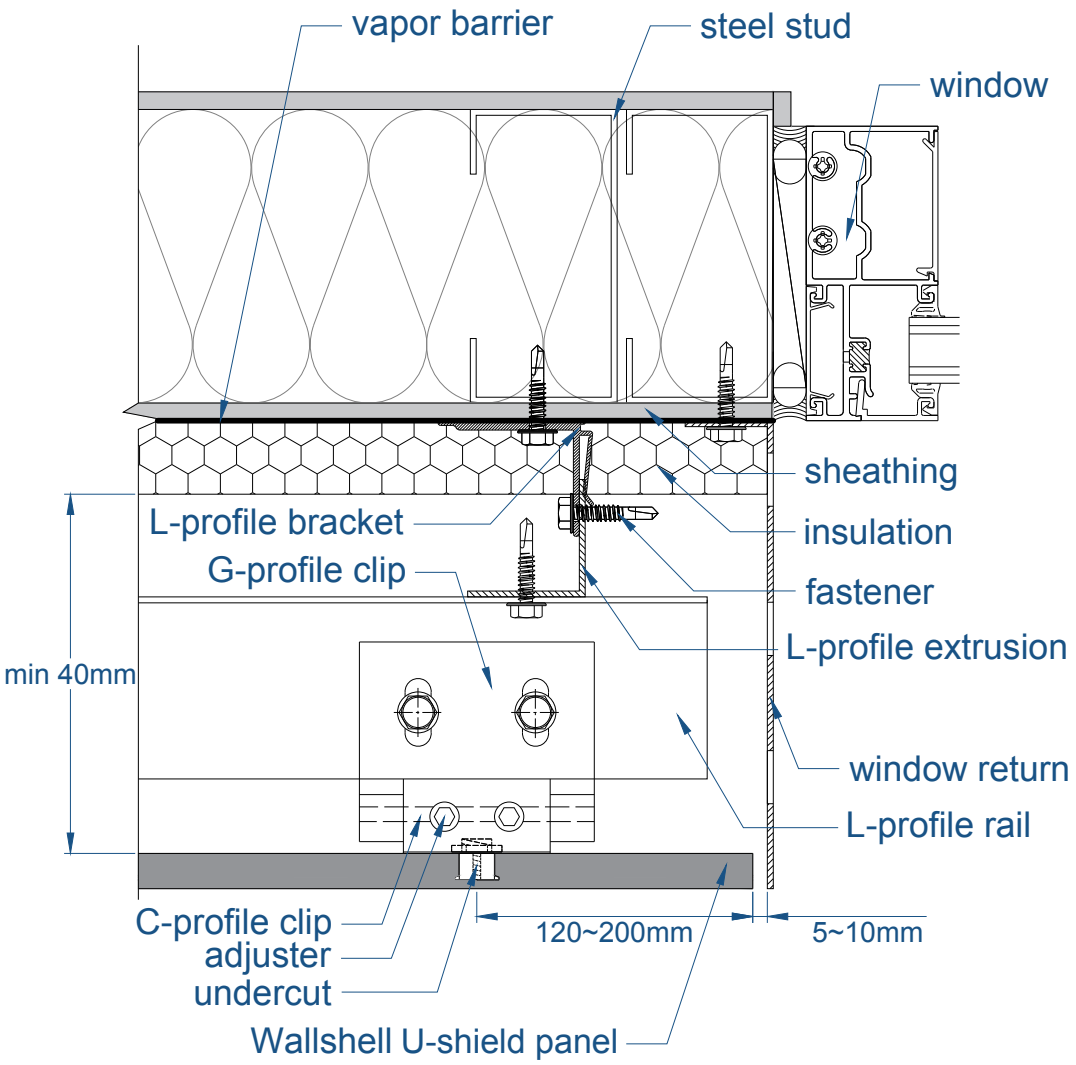


Figure 7: Window Head Detail

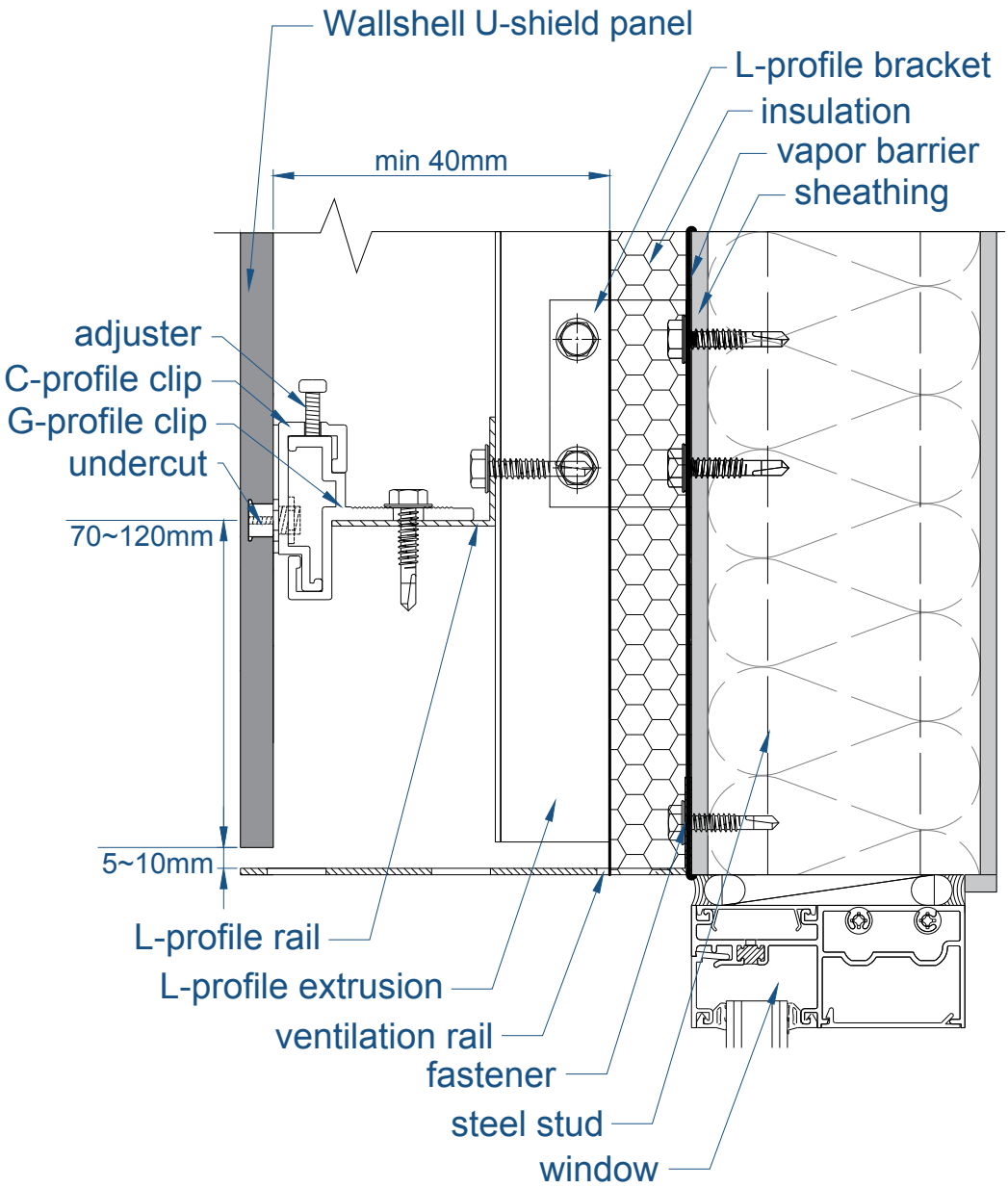


Figure 8: Window Sill Detail

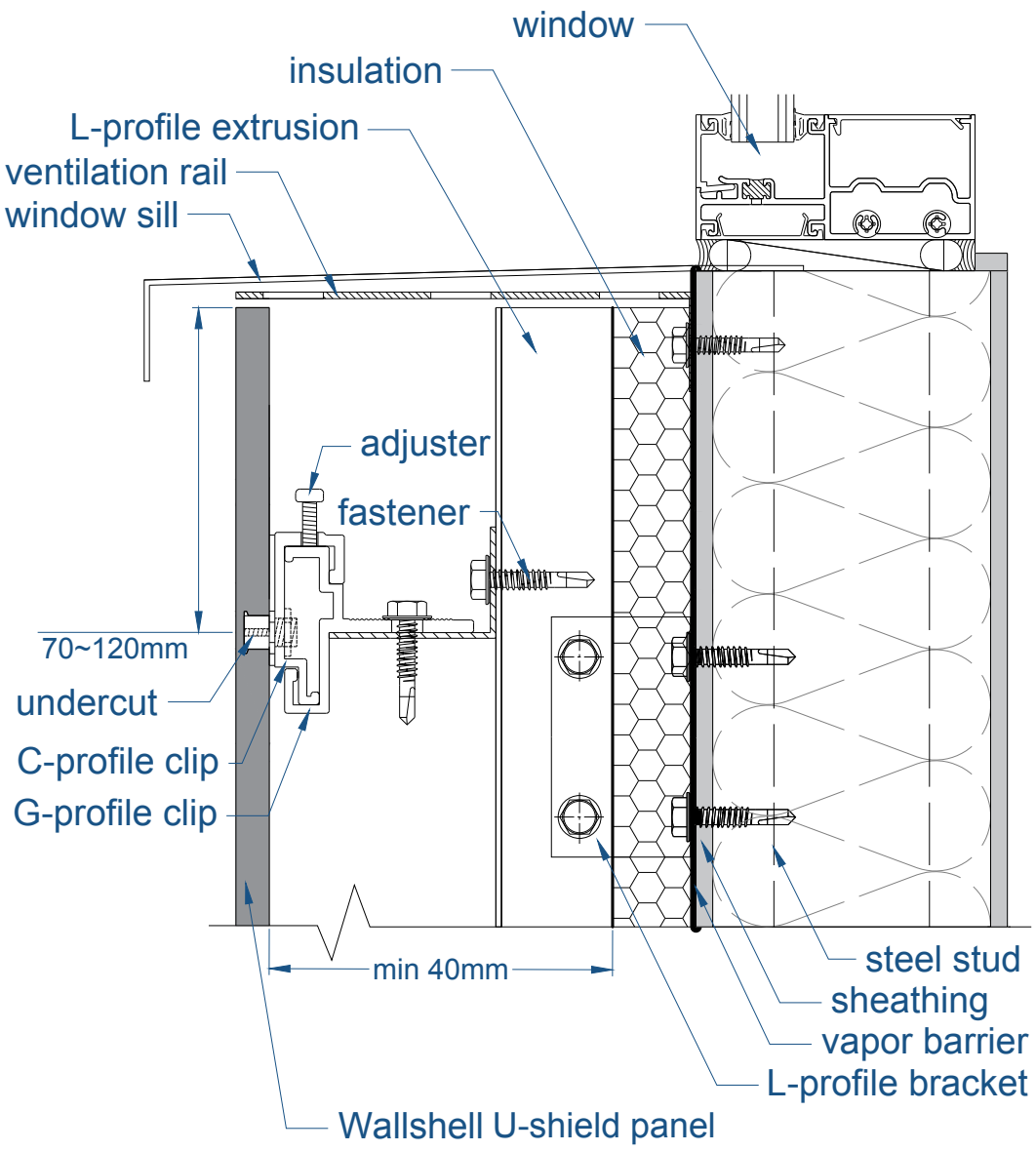


Figure 9: Parapet Detail

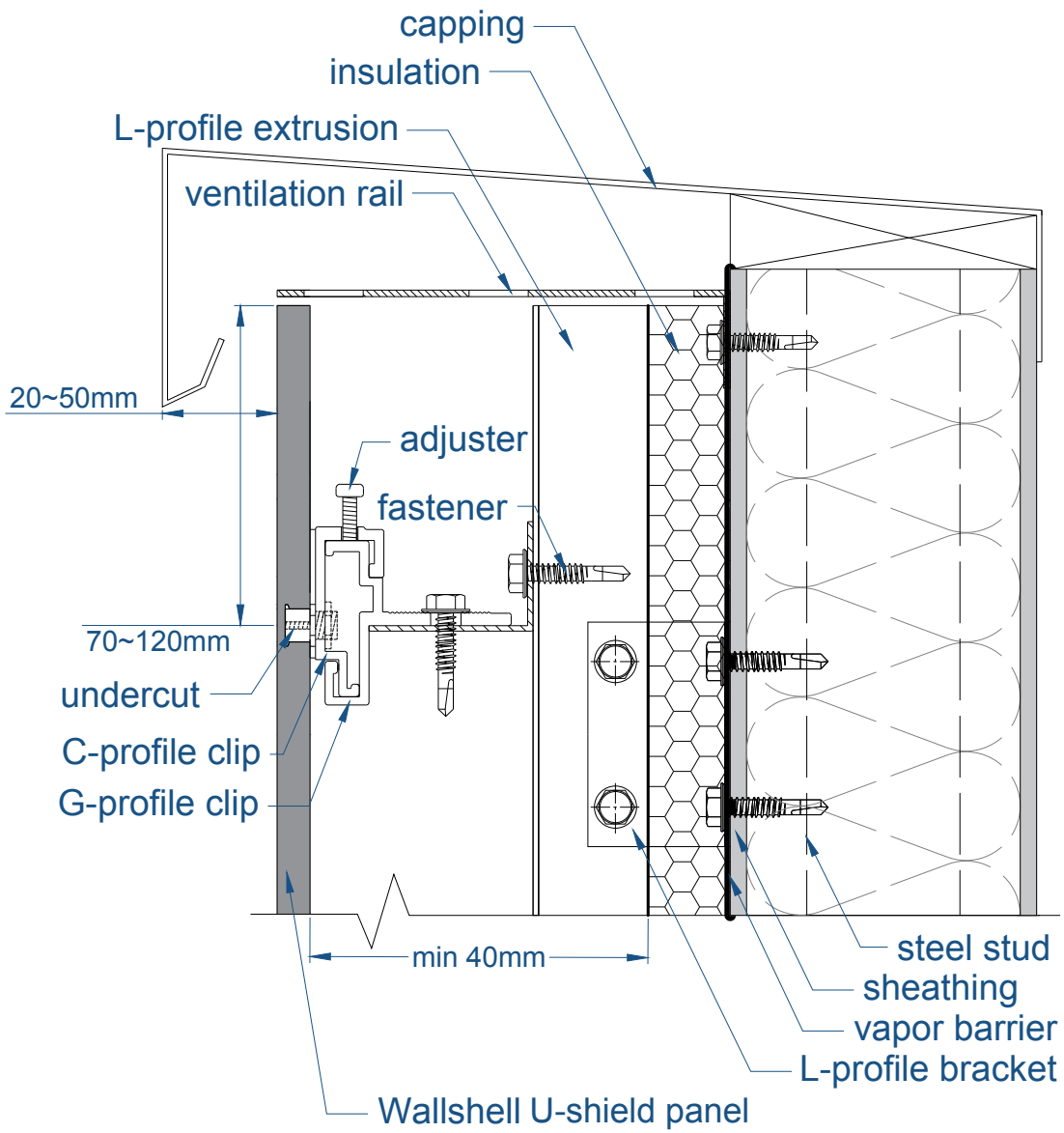
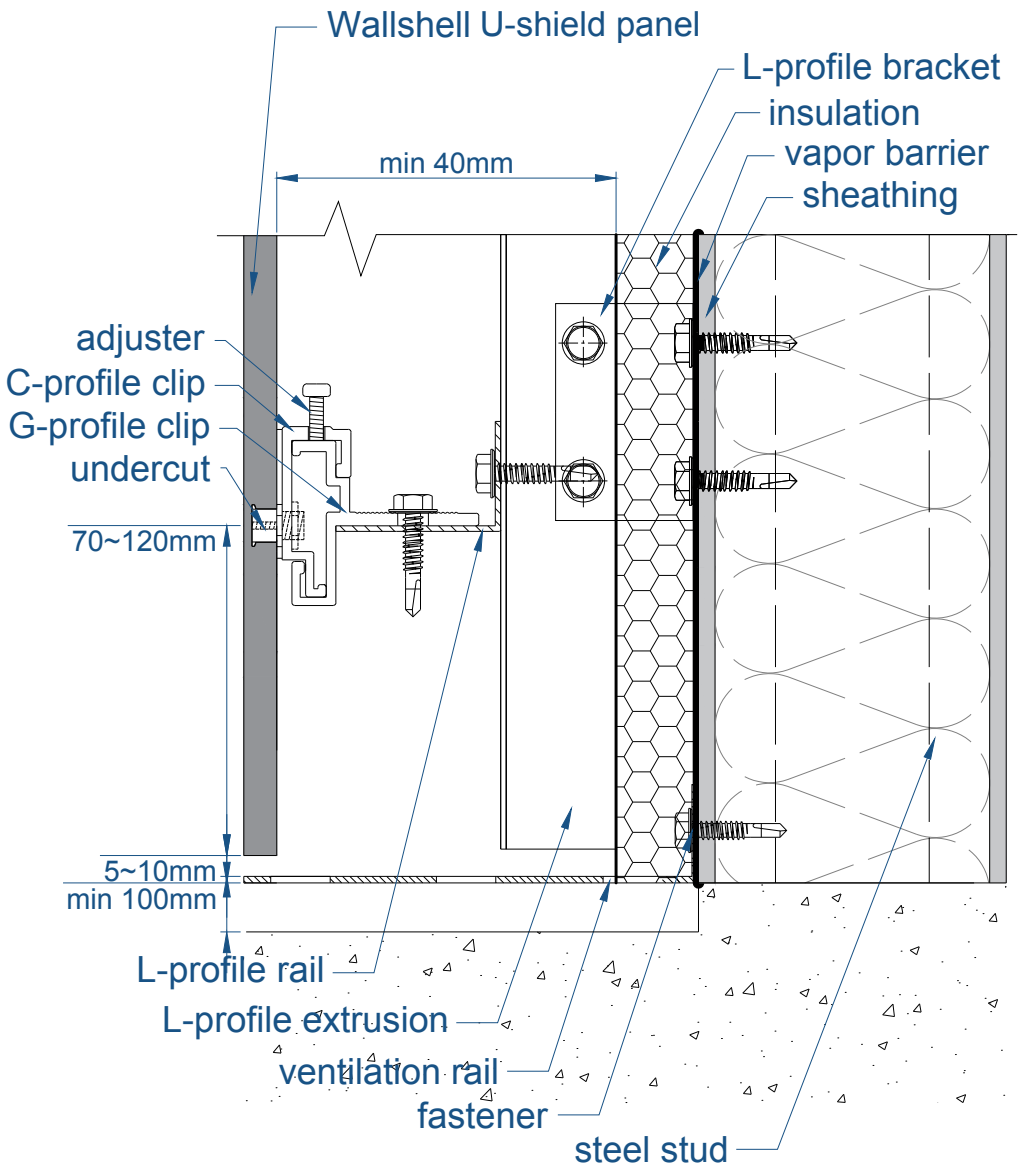


Figure 10: Base Detail



Remarks

Cleaning

There are two methods of cleaning panel, mechanical cleaning and chemical cleaning. In principle, perform the cleaning of the panel over the entire surface, because partial cleaning can result in color and tonal imbalance. Normal stains can be removed with a sponge and water. Warning High Pressure Cleaning is a rough treatment of panel. Use of a high-pressure cleaner may damage the surface. Therefore, high pressure cleaning is not recommended.

Impact by Pollution and Nature

Weather and nearby vegetation may affect the appearance of the panels. Take caution to avoid pollution, dust and leaves from trees, bushes and flowers to not impact the integrity of the panels. Excessive humidity, salts, or other chemical agents can corrode the panel and attack metal.

Special Information

THE INFORMATION OR DATA IN THIS SHEET SERVES TO ENSURE THE PRODUCT'S INTENDED PURPOSE OR ITS SUITABILITY FOR USE AND IS BASED ON OUR FINDINGS AND EXPERIENCE. NEVERTHELESS, USERS ARE RESPONSIBLE FOR ESTABLISHING THE SUITABILITY OF THE PRODUCT FOR ITS INTENDED USE. APPLICATIONS OTHER THAN THOSE EXPLICITLY MENTIONED IN THIS TECHNICAL DATA SHEET ARE ONLY PERMISSIBLE AFTER PRIOR CONSULTATION WITH WALPANEL, INC. WHERE NO APPROVAL IS GIVEN, SUCH APPLICATIONS ARE AT THE RISK OF THE USER. THIS APPLIES IN PARTICULAR WHEN THE PRODUCT IS USED IN COMBINATION WITH OTHER PRODUCTS. WHEN A NEW TECHNICAL DATA SHEET IS PUBLISHED, ALL PREVIOUS TECHNICAL DATA SHEETS ARE NO LONGER VALID. THE LATEST VERSION IS AVAILABLE ON THE INTERNET AT WWW.WALLSHELL.COM.

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June 9, 2020

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