

GAJCladding U-Shield

GU1 System Architecture Detail - v2.0



GAJ CLADDING

FOCUSED FOR OVER 20 YEARS

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Application

This GAJCladding 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.

Open Joint System

Open Joint systems is a ventilated, rain screen type of exterior cladding system. This system provides a permeable screen to rain and other weather, it can allow for air and water to both penetrate and drain out from behind the panels. For open joints, the weather-cavity thickness to be min. 40 mm. Substrate to be UV resistant and colored dark as it will be visible through the open joints.



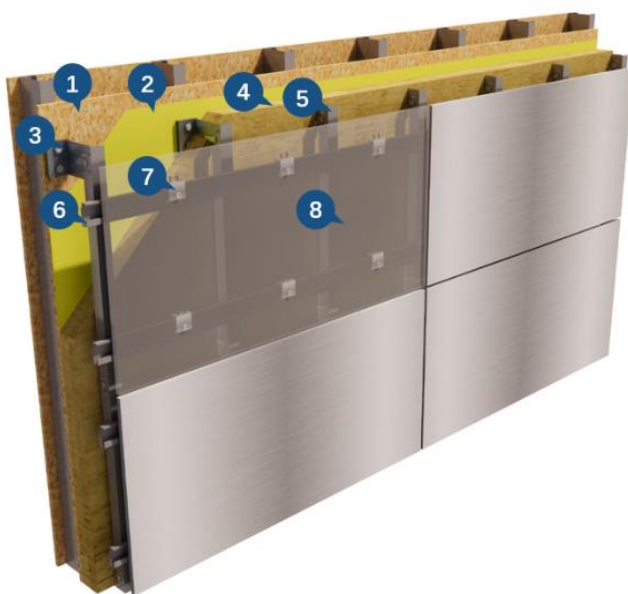
Principles for Designing

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.

GU1 Support System

GAJCladding GU1 Support System consists of undercut, C-profile clip, C-profile rail, vertical rail, brackets. It is a sophisticated approach to mounting fiber cement panels, designed to employ the strength and stability of concealed, undercut anchors. Each panel is meticulously pre-drilled at the back to accommodate a specialized hanger clip and expanding bolt anchor, ensuring a secure and enduring attachment.



1. Exterior Wall
2. Vapor Barrier & Waterproof
3. Brackets
4. Exterior Thermal Insulation
5. Vertical L-profile Rail
6. C-profile Rail
7. C-profile Clip & Undercut
8. U-Shield Panel

Anchors Requirements

Failure to use the undercut that are GAJCladding 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, Pearlshell, etc. Each series finish color corresponds to a different level of finish textures. For more specific information, you can refer to the color catalog.

Rain Screen System

The GAJCladding U-Shield panel system forms a rain screen system with a ventilated 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 Data

Properties		Text Value
Apparent Density		1.57g/cm ³
Carrier Board Water Absorption		24.9%
Water Absorption after Coating		0.2%
Wet Rate		0.15%
Flexural Strength (Equilibrium Conditioning))		23.2MPa
Flexural Strength (Wet Conditioning)		16.5MPa
100 Freeze-Thaw Cycles Resistance	Physical Observations	Pass
	Flexural Strength Retention Rate	84.5%
50 Soak/Dry Cycles Performance		91.2%
Falling Ball Impact		Pass (10J)
Non-Combustibility		Class A

12mm U-Shield Wind Load

Properties	Average Value
Ultimate Pressure Load (Positive Pressure)	9166 Pa
Damage Wind Load (Negative Pressure)	10100 Pa
Drawing Force of Anchoring System	1450 N
Shear Force of Anchoring System (Longitudinal)	2496 N
Shear Force of Anchoring System (Transverse)	2044 N

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	$\geq 2\text{mm}$
	Galvanised/stainless steel	$\geq 1.2\text{mm}$
Minimal depth of profile		$\geq 35\text{mm}$
Minimal width of intermediate profile		$\geq 40\text{mm}$
Minimal width of vertical joint profile		$\geq 90\text{mm}$
Recommended width of joint profile		$\geq 120\text{mm}$
Maximum buckle under influence of strain		$\leq \text{Span}/250$
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.gajcladding.com. You should obtain architectural, engineering or other technical advice to assess whether these drawings are suitable for your particular project. Chongqing Gu An Jie Qizhong Building Materials Co., Ltd. is not responsible for the use of these drawings.

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Figure 1: Elevation and Floor Plan

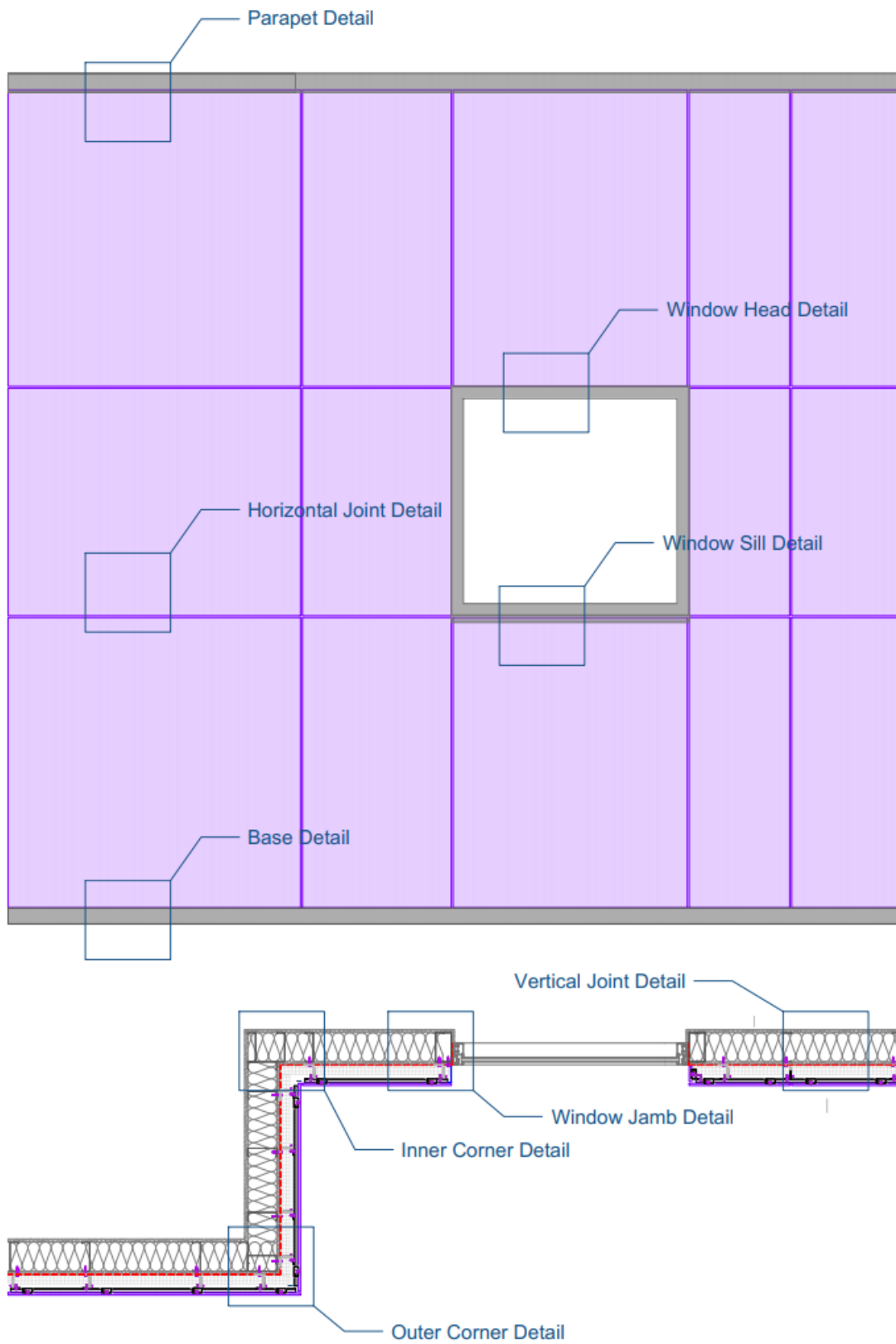
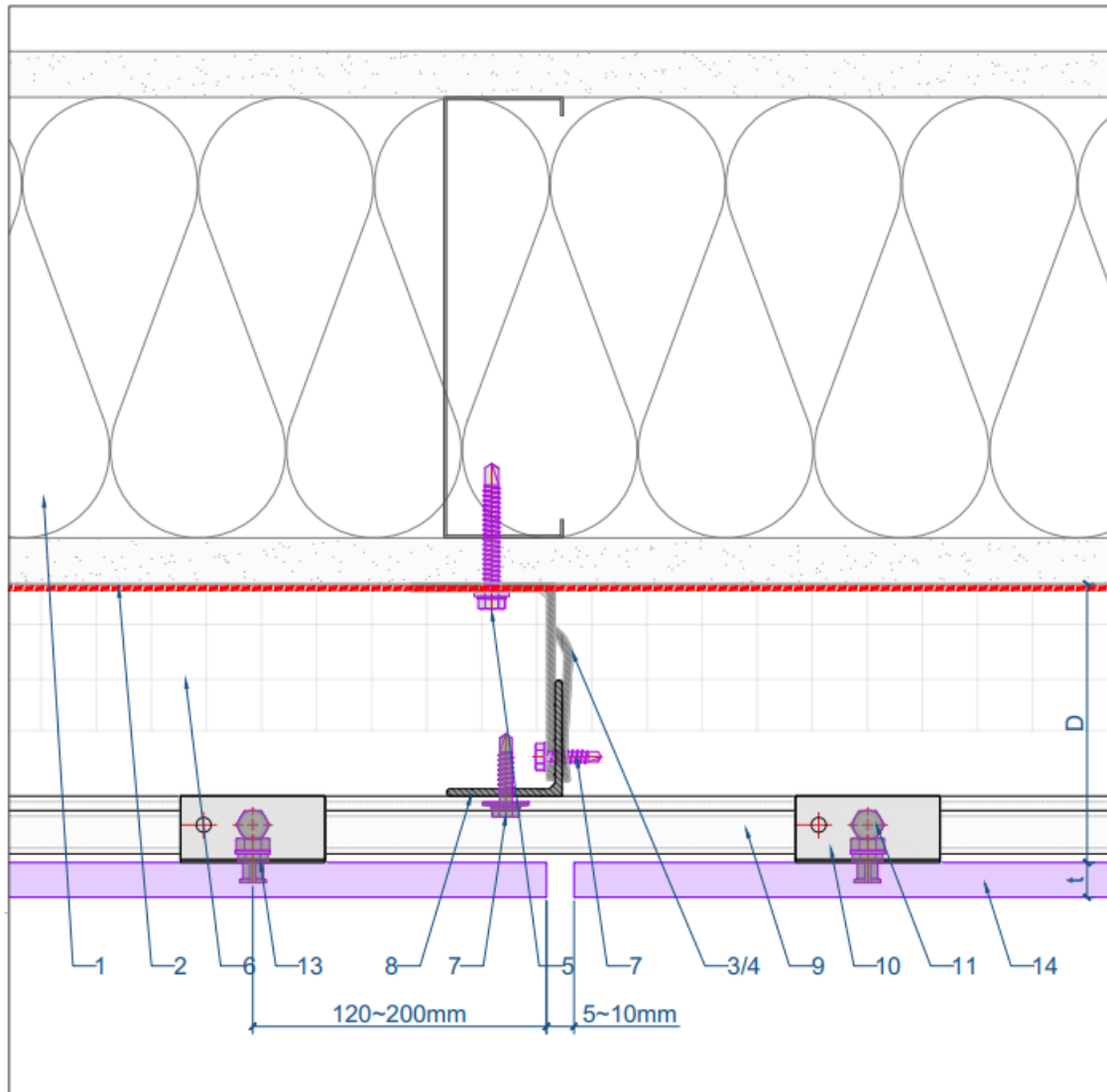


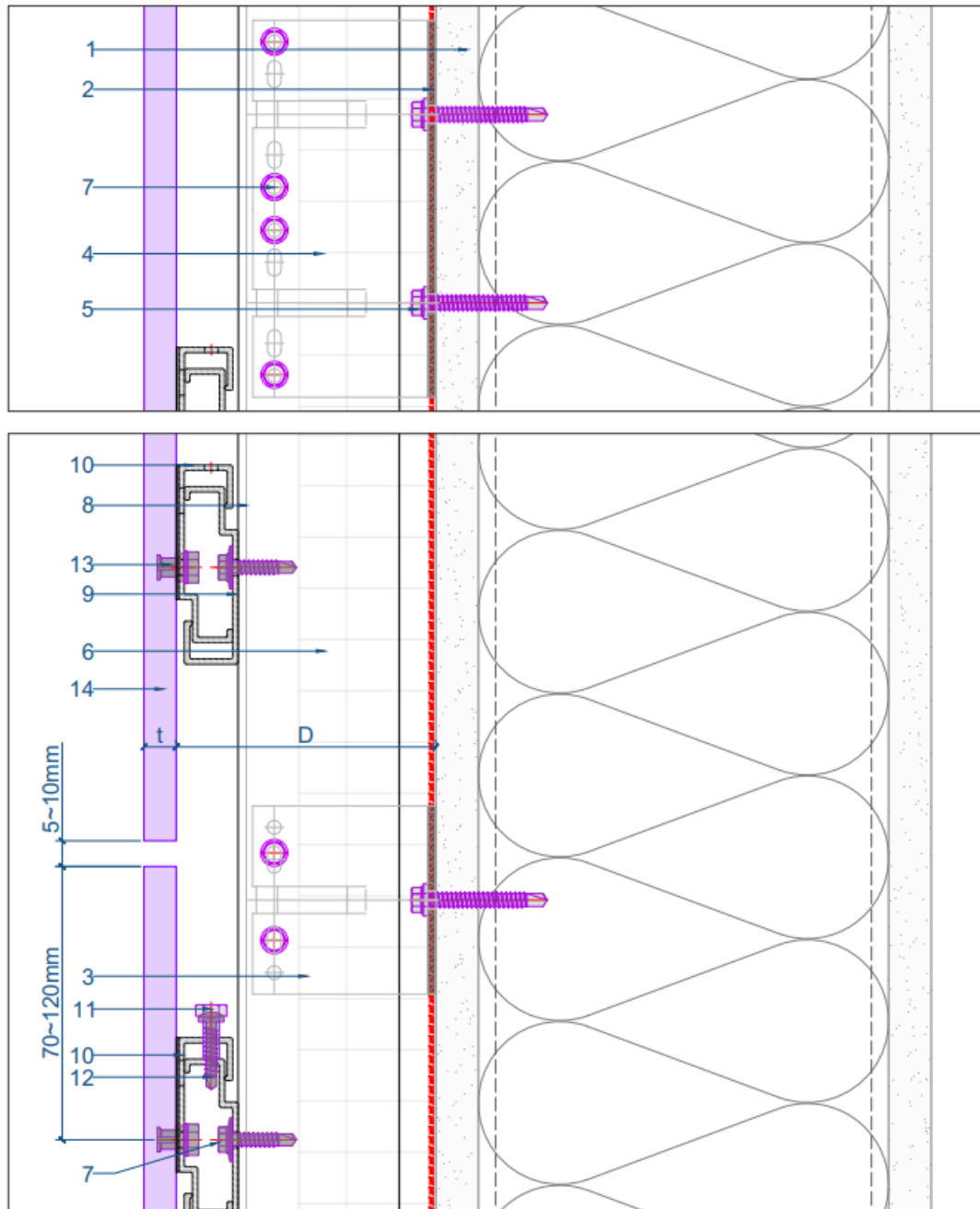
Figure 2: Vertical Joint Detail



Legend

- | | | |
|--------------------------------|--------------------------|------------------------|
| 1. Exterior Wall | 9. C-profile Rail | 17. Perforated Closure |
| 2. Vapor Barrier | 10. C-profile Clip | 18. Jamb Closure |
| 3. Single Bracket | 11. Adjuster Fastener | 19. Window Sill |
| 4. Double Bracket | 12. Tighten Fastener | 20. Capping |
| 5. Substrate Fastener | 13. Undercut | 21. Rivet |
| 6. Insulation | 14. Panel | D - System depth |
| 7. Self-drilling Screw M4.8*19 | 15. Outer Corner Closure | t - Panel thickness |
| 8. L-profile Rail | 16. Inner Corner Closure | |

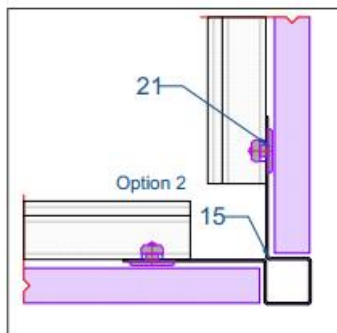
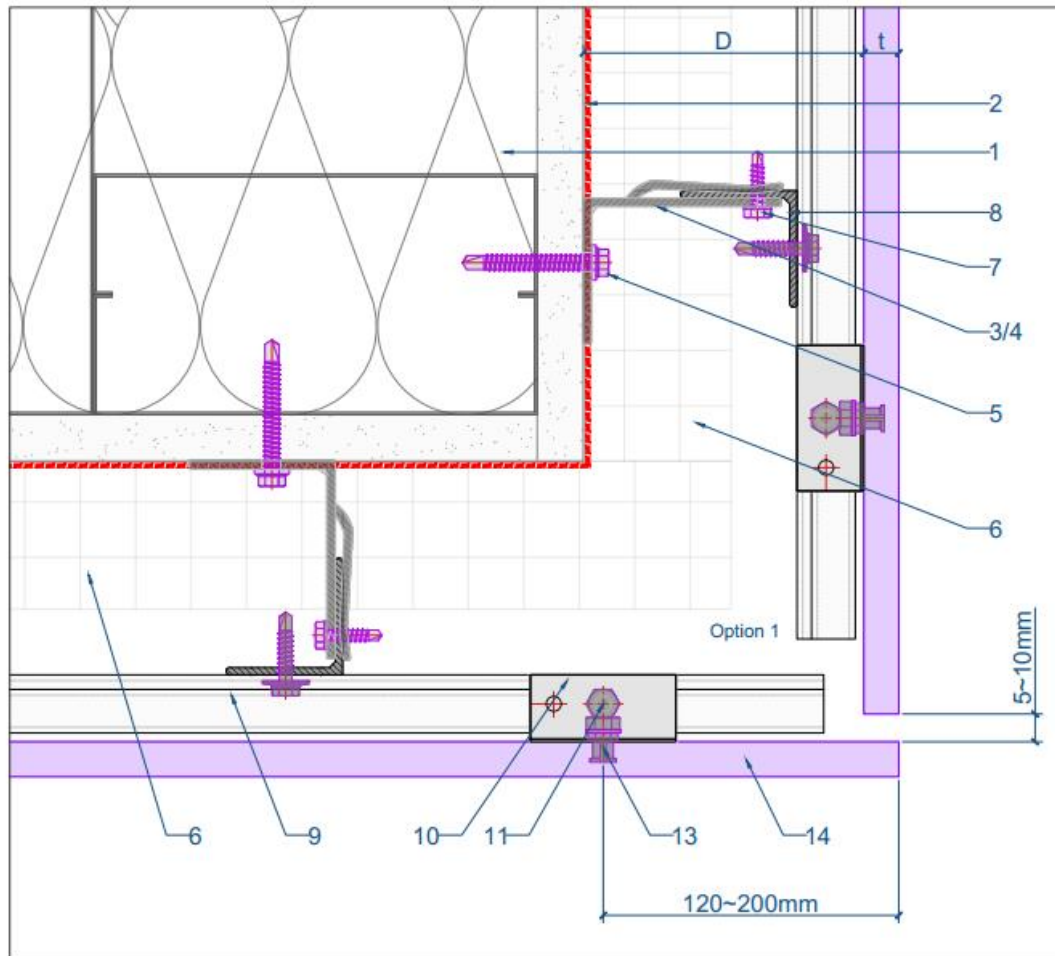
Figure 3: Horizontal Joint Detail



Legend

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|--------------------------------|--------------------------|------------------------|
| 1. Exterior Wall | 9. C-profile Rail | 17. Perforated Closure |
| 2. Vapor Barrier | 10. C-profile Clip | 18. Jamb Closure |
| 3. Single Bracket | 11. Adjuster Fastener | 19. Window Sill |
| 4. Double Bracket | 12. Tighten Fastener | 20. Capping |
| 5. Substrate Fastener | 13. Undercut | 21. Rivet |
| 6. Insulation | 14. Panel | D - System depth |
| 7. Self-drilling Screw M4.8*19 | 15. Outer Corner Closure | t - Panel thickness |
| 8. L-profile Rail | 16. Inner Corner Closure | |

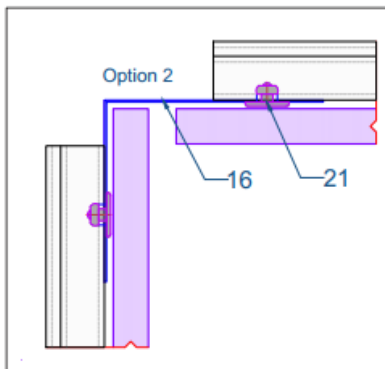
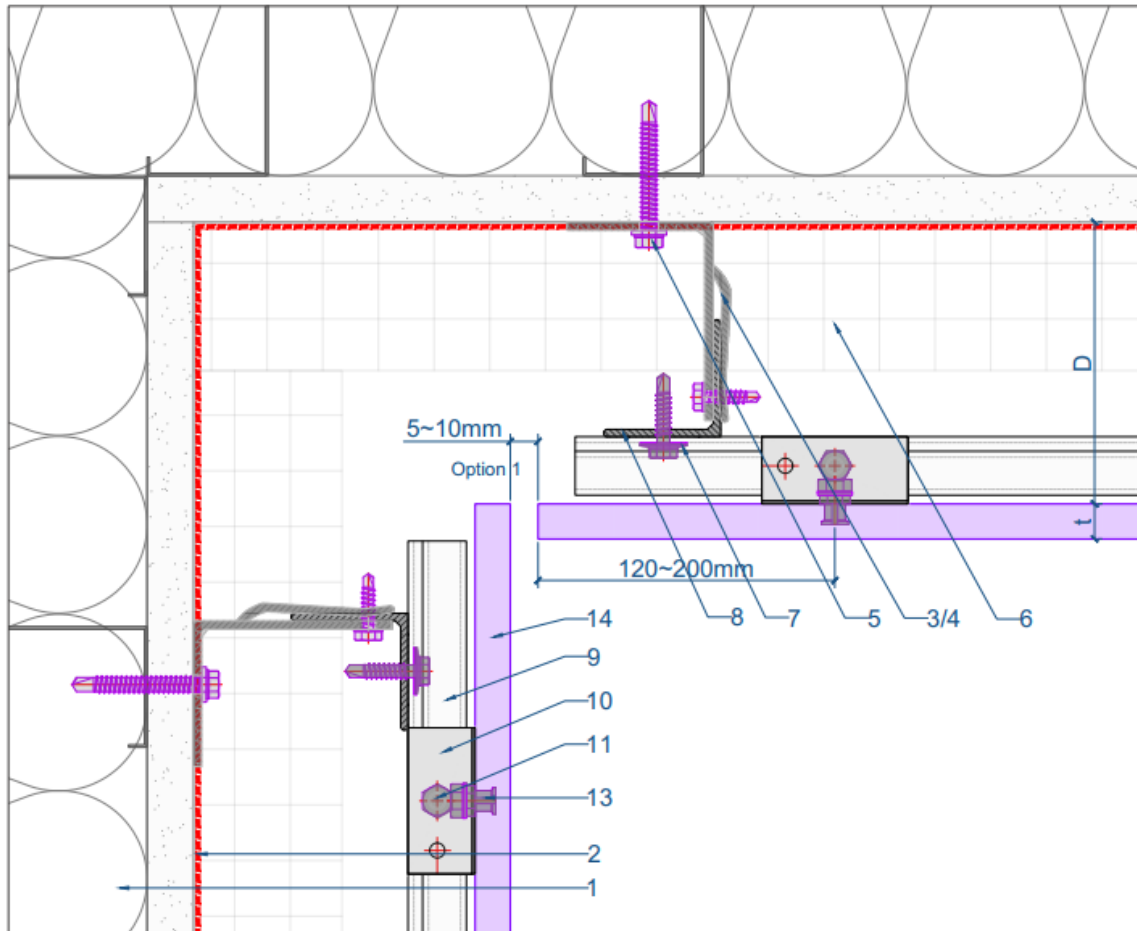
Figure 4: Outer Corner Detail



Legend

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|--------------------------------|--------------------------|------------------------|
| 1. Exterior Wall | 9. C-profile Rail | 17. Perforated Closure |
| 2. Vapor Barrier | 10. C-profile Clip | 18. Jamb Closure |
| 3. Single Bracket | 11. Adjuster Fastener | 19. Window Sill |
| 4. Double Bracket | 12. Tighten Fastener | 20. Capping |
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| 6. Insulation | 14. Panel | D - System depth |
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| 8. L-profile Rail | 16. Inner Corner Closure | |

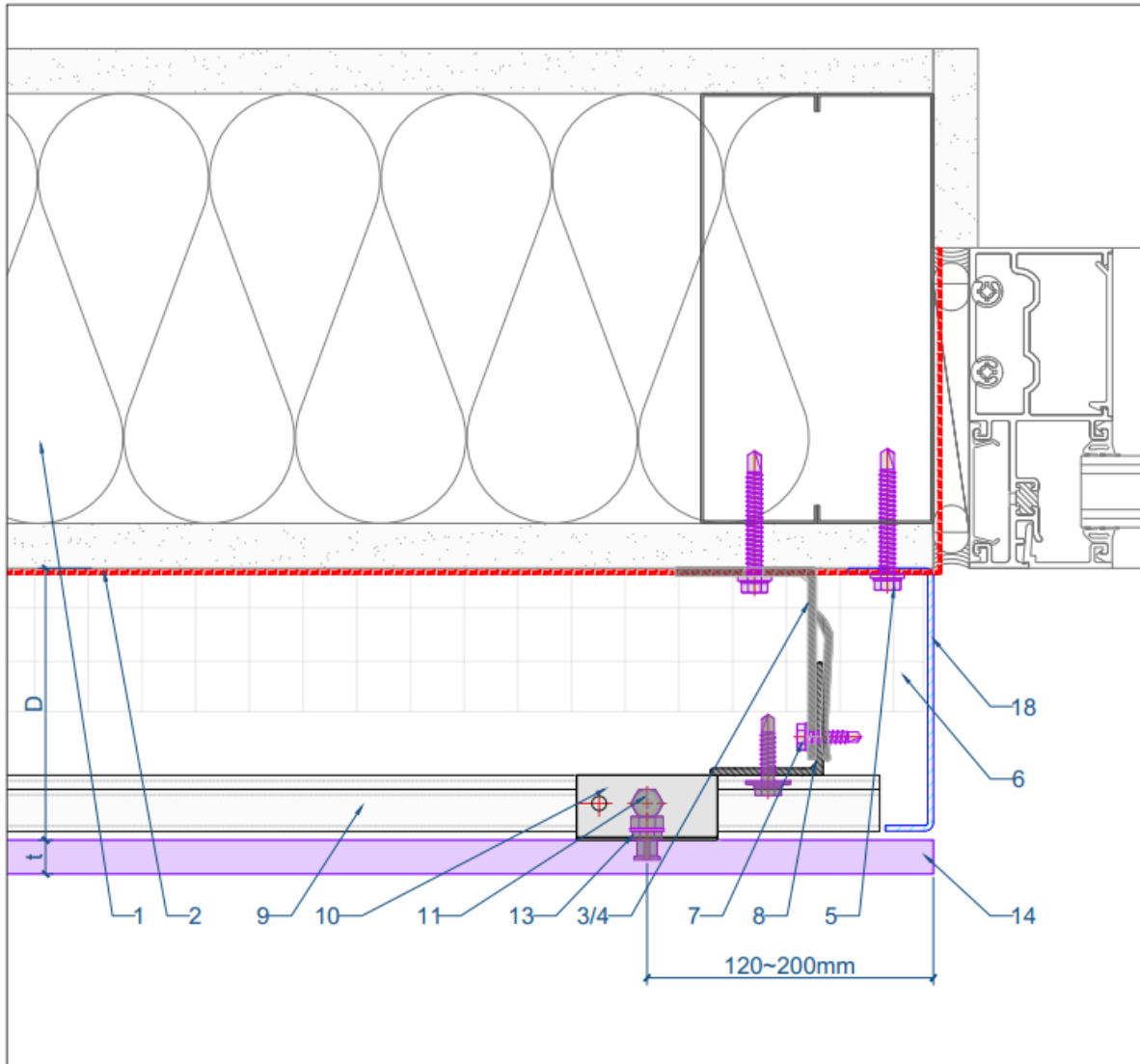
Figure 5: Inner Corner Detail



Legend

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|--------------------------------|--------------------------|------------------------|
| 1. Exterior Wall | 9. C-profile Rail | 17. Perforated Closure |
| 2. Vapor Barrier | 10. C-profile Clip | 18. Jamb Closure |
| 3. Single Bracket | 11. Adjuster Fastener | 19. Window Sill |
| 4. Double Bracket | 12. Tighten Fastener | 20. Capping |
| 5. Substrate Fastener | 13. Undercut | 21. Rivet |
| 6. Insulation | 14. Panel | D - System depth |
| 7. Self-drilling Screw M4.8*19 | 15. Outer Corner Closure | t - Panel thickness |
| 8. L-profile Rail | 16. Inner Corner Closure | |

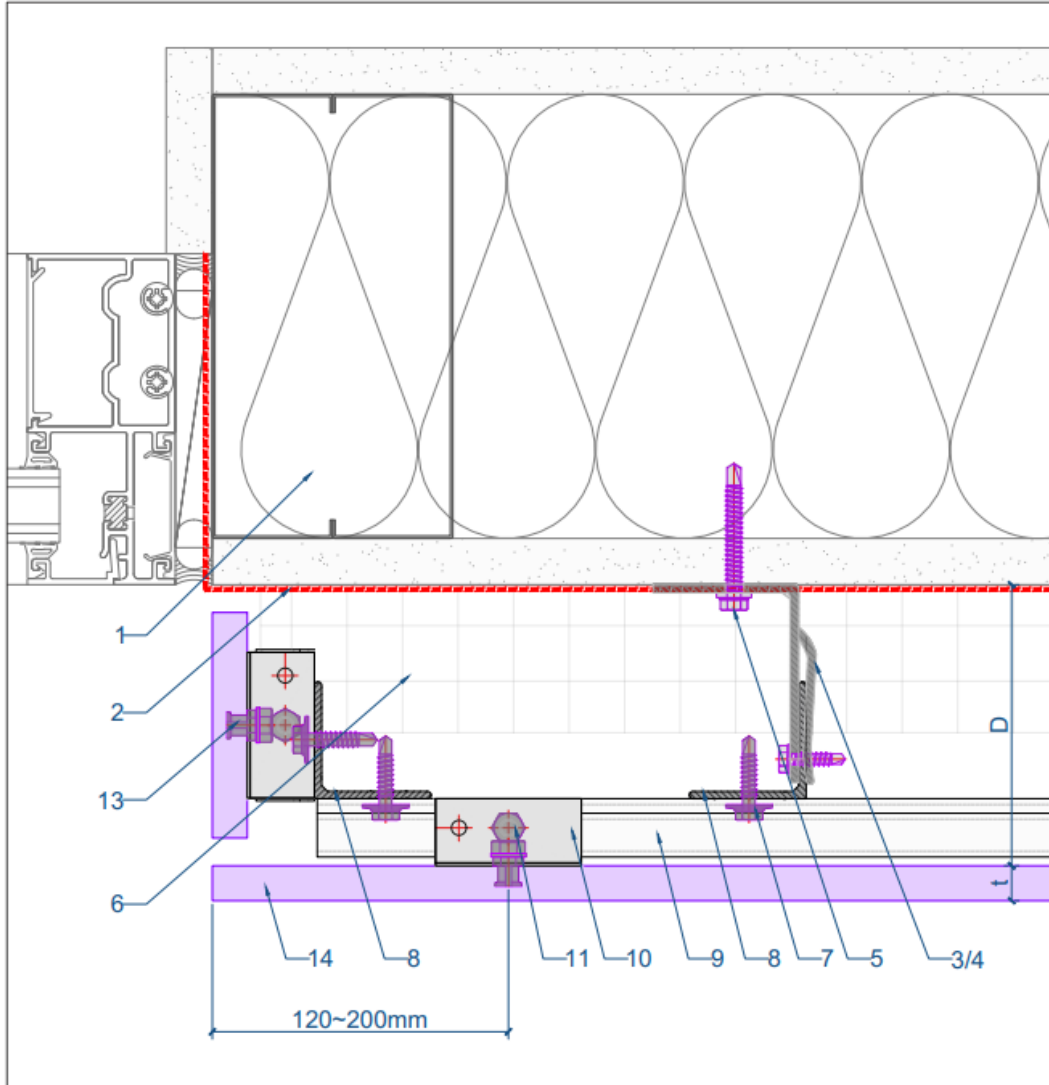
Figure 6: Window Jamb Detail (Option 1)



Legend

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|--------------------------------|--------------------------|------------------------|
| 1. Exterior Wall | 9. C-profile Rail | 17. Perforated Closure |
| 2. Vapor Barrier | 10. C-profile Clip | 18. Jamb Closure |
| 3. Single Bracket | 11. Adjuster Fastener | 19. Window Sill |
| 4. Double Bracket | 12. Tighten Fastener | 20. Capping |
| 5. Substrate Fastener | 13. Undercut | 21. Rivet |
| 6. Insulation | 14. Panel | D - System depth |
| 7. Self-drilling Screw M4.8*19 | 15. Outer Corner Closure | t - Panel thickness |
| 8. L-profile Rail | 16. Inner Corner Closure | |

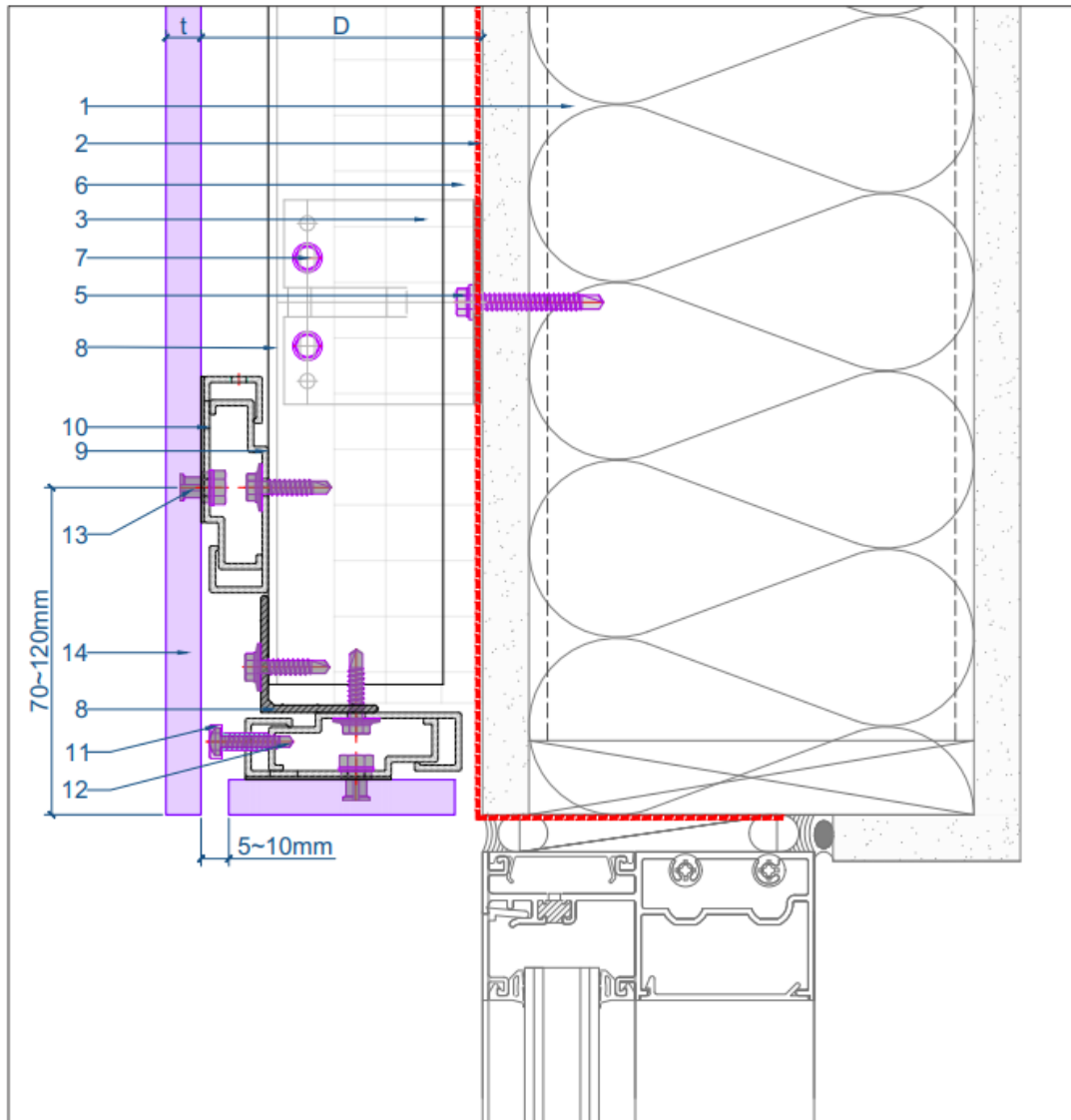
Figure 7: Window Jamb Detail (Option 2)



Legend

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|--------------------------------|--------------------------|------------------------|
| 1. Exterior Wall | 9. C-profile Rail | 17. Perforated Closure |
| 2. Vapor Barrier | 10. C-profile Clip | 18. Jamb Closure |
| 3. Single Bracket | 11. Adjuster Fastener | 19. Window Sill |
| 4. Double Bracket | 12. Tighten Fastener | 20. Capping |
| 5. Substrate Fastener | 13. Undercut | 21. Rivet |
| 6. Insulation | 14. Panel | D - System depth |
| 7. Self-drilling Screw M4.8*19 | 15. Outer Corner Closure | t - Panel thickness |
| 8. L-profile Rail | 16. Inner Corner Closure | |

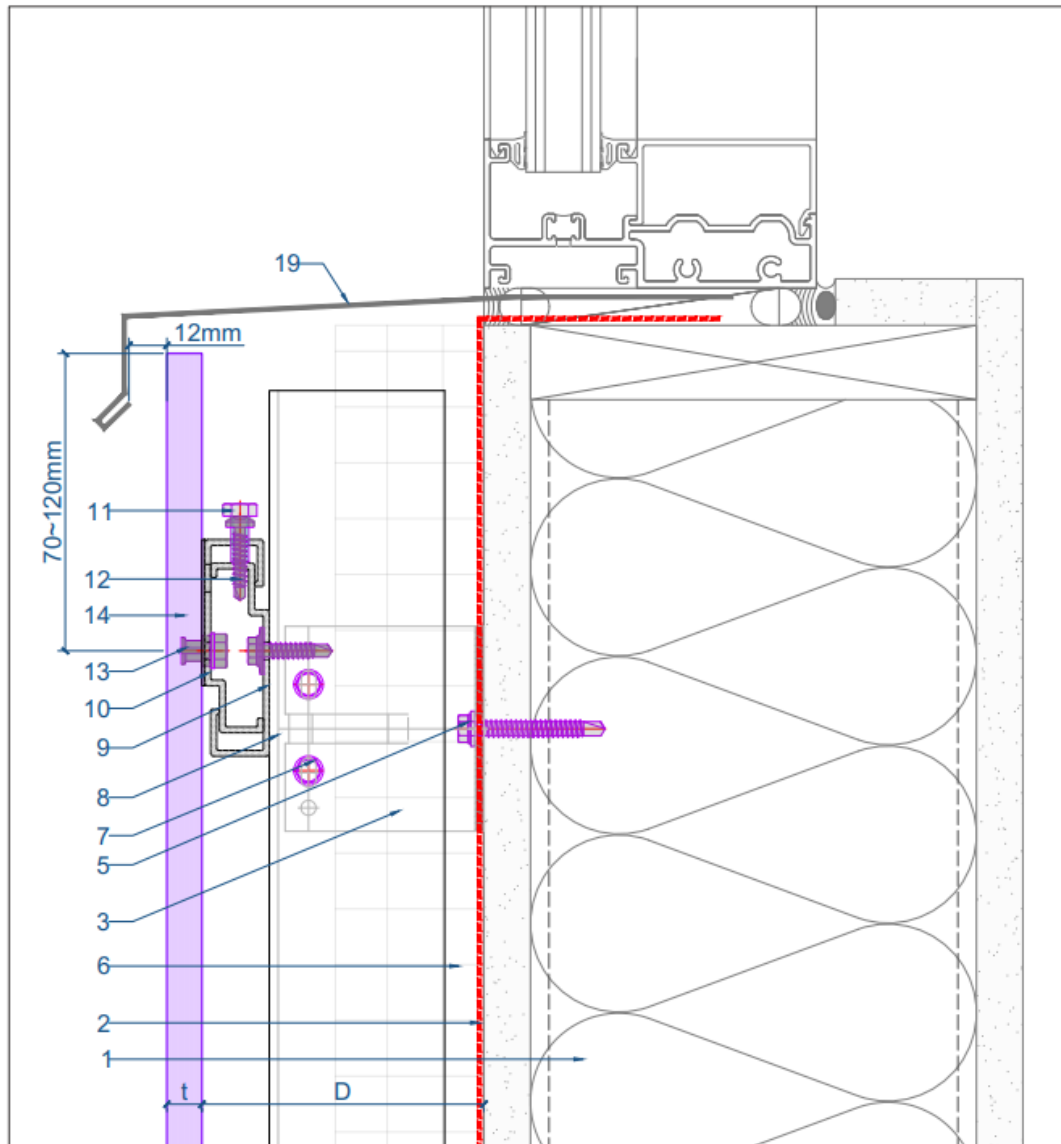
Figure 9: Window Head Detail (Option 2)



Legend

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|--------------------------------|--------------------------|------------------------|
| 1. Exterior Wall | 9. C-profile Rail | 17. Perforated Closure |
| 2. Vapor Barrier | 10. C-profile Clip | 18. Jamb Closure |
| 3. Single Bracket | 11. Adjuster Fastener | 19. Window Sill |
| 4. Double Bracket | 12. Tighten Fastener | 20. Capping |
| 5. Substrate Fastener | 13. Undercut | 21. Rivet |
| 6. Insulation | 14. Panel | D - System depth |
| 7. Self-drilling Screw M4.8*19 | 15. Outer Corner Closure | t - Panel thickness |
| 8. L-profile Rail | 16. Inner Corner Closure | |

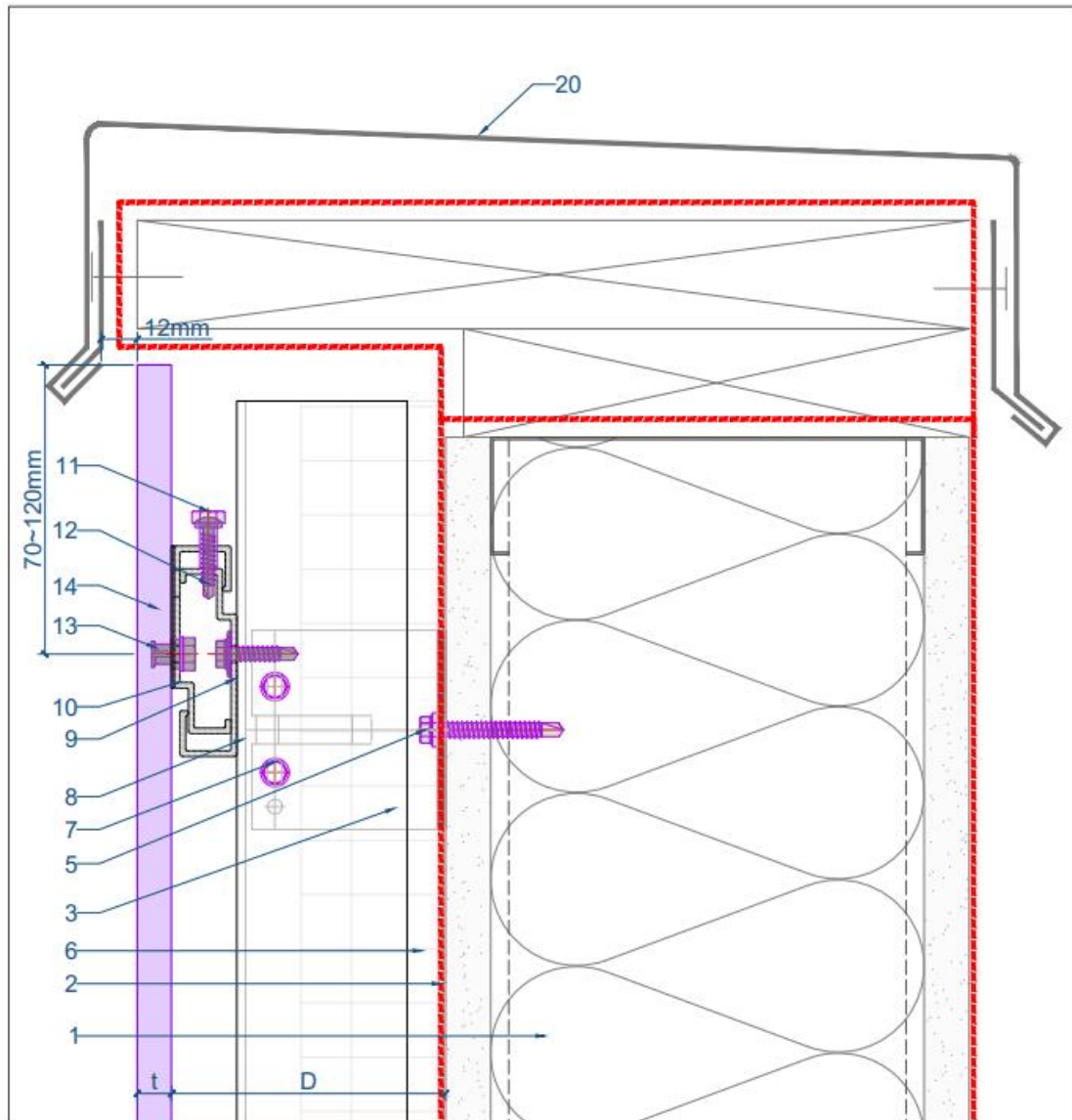
Figure 10: Window Sill Detail



Legend

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|--------------------------------|--------------------------|------------------------|
| 1. Exterior Wall | 9. C-profile Rail | 17. Perforated Closure |
| 2. Vapor Barrier | 10. C-profile Clip | 18. Jamb Closure |
| 3. Single Bracket | 11. Adjuster Fastener | 19. Window Sill |
| 4. Double Bracket | 12. Tighten Fastener | 20. Capping |
| 5. Substrate Fastener | 13. Undercut | 21. Rivet |
| 6. Insulation | 14. Panel | D - System depth |
| 7. Self-drilling Screw M4.8*19 | 15. Outer Corner Closure | t - Panel thickness |
| 8. L-profile Rail | 16. Inner Corner Closure | |

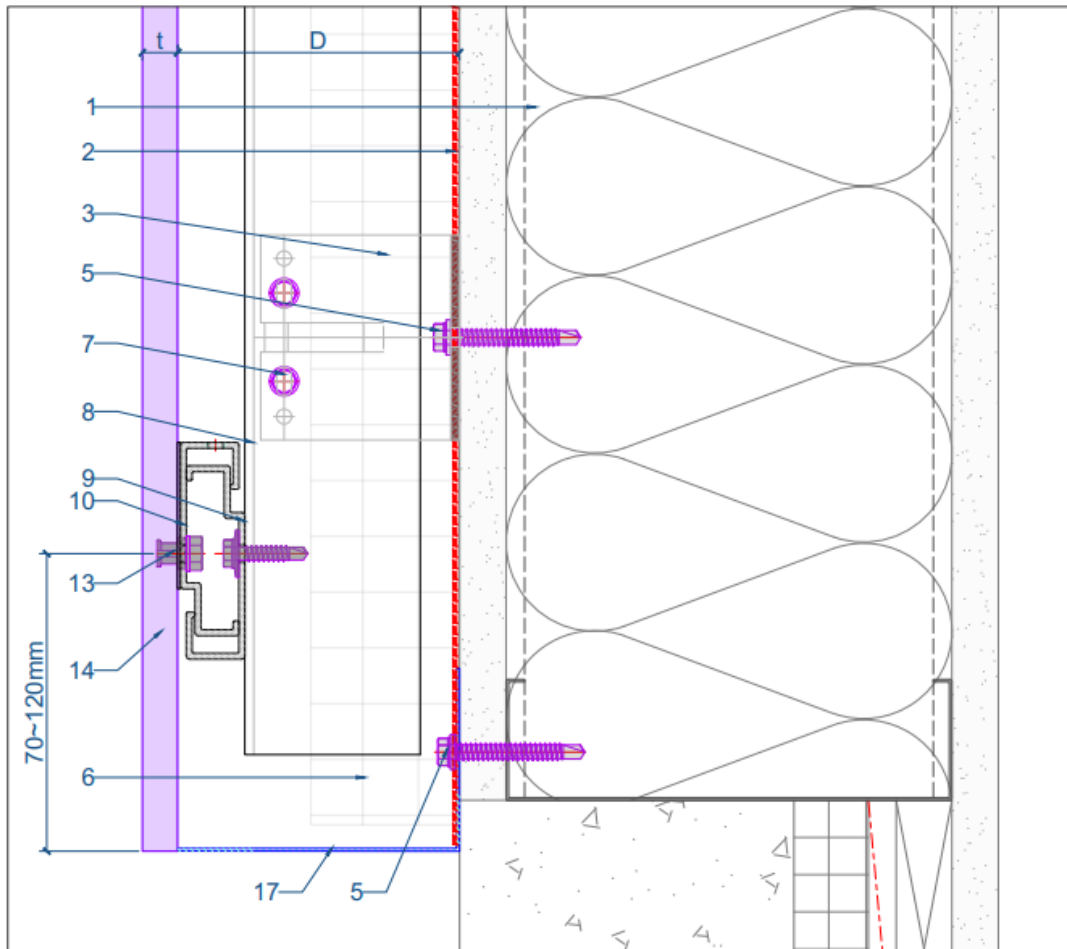
Figure 11: Parapet Detail



Legend

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|--------------------------------|--------------------------|------------------------|
| 1. Exterior Wall | 9. C-profile Rail | 17. Perforated Closure |
| 2. Vapor Barrier | 10. C-profile Clip | 18. Jamb Closure |
| 3. Single Bracket | 11. Adjuster Fastener | 19. Window Sill |
| 4. Double Bracket | 12. Tighten Fastener | 20. Capping |
| 5. Substrate Fastener | 13. Undercut | 21. Rivet |
| 6. Insulation | 14. Panel | D - System depth |
| 7. Self-drilling Screw M4.8*19 | 15. Outer Corner Closure | t - Panel thickness |
| 8. L-profile Rail | 16. Inner Corner Closure | |

Figure 12: Base Detail



Legend

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|--------------------------------|--------------------------|------------------------|
| 1. Exterior Wall | 9. C-profile Rail | 17. Perforated Closure |
| 2. Vapor Barrier | 10. C-profile Clip | 18. Jamb Closure |
| 3. Single Bracket | 11. Adjuster Fastener | 19. Window Sill |
| 4. Double Bracket | 12. Tighten Fastener | 20. Capping |
| 5. Substrate Fastener | 13. Undercut | 21. Rivet |
| 6. Insulation | 14. Panel | D - System depth |
| 7. Self-drilling Screw M4.8*19 | 15. Outer Corner Closure | t - Panel thickness |
| 8. L-profile Rail | 16. Inner Corner Closure | |

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 CHONGQING GU AN JIE QIZHONG BUILDING MATERIALS CO., LTD 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.

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FOCUSED FOR OVER 20 YEARS

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