JamesHardie™

jameshardie.co.nz

Axon™ Panel Fixed to Hardie™ CLD™ Structural Cavity Batten

Axon™ Panel固定于Hardie™ CLD™空腔结构板条

Technical Specification
March 2024 New Zealand

技术规范
2024年3月 新西兰



NEW
Brushed Concrete
新产品拉丝混凝土纹理

Please note the English version shall always prevail in case of any discrepancy or inconsistency between English and its Chinese translation.
中英文如有歧义，概以英文为准。



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Ask James Hardie™
literaturefeedback@jameshardie.co.nz

Make sure your information is up to date
请确保获取最新信息

When specifying or installing Hardie™ fibre cement products, ensure that you have the current manual. Additional installation information, warranties and warnings are available at **www.jameshardie.co.nz** or **Ask James Hardie™ on 0800 808 868.**

当指定或安装Hardie™ 纤维水泥产品时，请确保您使用的是现行版本手册。更多安装、质保和提醒信息请见**www.jameshardie.co.nz**或致电**James Hardie™ 0800 808 868**。

THIS TECHNICAL SPECIFICATION IS FOR AXON™ PANEL FIXED TO HARDIE™ CLD™ STRUCTURAL CAVITY BATTEN.

本技术规范适用于AXON™ PANEL固定于HARDIE™ CLD™空腔结构板条

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1 Product Information 产品信息

Grooved 凹槽型



Axon™ Panel 133mm Grooved
Axon™ Panel 133mm 凹槽光滑型

The grooves on the face panel are nominal 10mm wide x 2.25mm deep and spaced at 133mm centres.

面板上的凹槽标称为10mm宽 x 2.25mm深，且间距为133mm。



Axon™ Panel 133mm Grooved Grained
Axon™ Panel 133mm 凹槽木纹型

The grooves on the face panel are nominal 10mm wide x 2.25mm deep and spaced at 133mm centres. Between the grooves is a look of traditional wood-grain texture.

面板上的凹槽标称为10mm宽 x 2.25mm深，且间距为133mm。凹槽之间呈现传统的木纹纹理。



Axon™ Panel 400mm Grooved
Axon™ Panel 400mm 凹槽光滑型

The grooves on the face panel are nominal 10mm wide x 2.25mm deep and spaced at 400mm centres.

面板上的凹槽标称为10mm宽 x 2.25mm深，且间距为400mm。

Textured 纹理型



Axon™ Panel Smooth
Axon™ Panel 光滑型

Formerly known as EasyLap™ Panel
前身为EasyLap™ Panel

Provides a durable, shiplap vertical joint panel appearance for residential/ commercial building façades. The panel is finished with either a site applied roll on textured acrylic paint to create a rendered look with subtle vertical joint or a full mesh texture coating system.

为住宅/商业建筑立面提供耐用的纵向接搭板外观。该板材可以通过现场涂刷亚克力纹理漆，创造出具有细微垂直接缝的渲染外观，也可以使用完整的网格纹理涂层系统。



Axon™ Panel Brushed Concrete
Axon™ Panel拉丝混凝土纹理

Provides a durable, shiplap vertical joint panel appearance with an embedded textured surface suitable for residential/ commercial building facades.

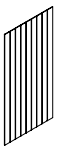
为住宅/商业建筑立面提供耐用的纵向接搭板外观，表面带有嵌入式的纹理。

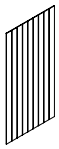
1.1 Product Sizes and Accessories 产品尺寸与配件

Table 1 表1

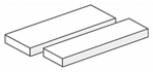
Note: Axon™ Panel cladding is defined as a Light Weight Wall Cladding (not exceeding 30kg/m²) as per the NZS 3604.

注： Axon™ Panel按照NZS 3604的定义属于轻质外墙板（不超过30kg/㎡）。

Axon™ Panel Grooved | Axon™ Panel凹槽型					
Product 产品	**Description 产品描述**	**Thickness 厚度 (mm)**	**Size 尺寸**		**Product Code 产品编码**
			Length 长 (mm)	**Width 宽(mm)**	
	**Axon™ Panel 133mm Grooved** **Axon™ Panel 133mm 凹槽光滑型** Is a shiplap jointed panel to hide the panel joints. The panel is face primed. The panel has grooves at 133mm centres. The panel must be installed vertically. 可隐藏接缝的搭接式板材。板材表面预涂底漆。板材之间的凹槽间距为133mm。板材必须纵向安装。 Nom. Panel Mass: 12.1kg/m² 标称板材质量：12.1kg/m²	9	2450	1200	**403780**
			2750	1200	**403781**
			3000	1200	**403782**
			3600	1200	**404979**

Axon™ Panel Grooved | Axon™ Panel凹槽型					
Product 产品	**Description 产品描述**	**Thickness 厚度(mm)**	**Size 尺寸**		**Product Code 产品编码**
	**Axon™ Panel 133mm Grooved Grained** **Axon™ Panel 133mm 凹槽木纹型** Is a shiplap jointed panel to hide the panel joints. The panel is face primed. The panel has grooves at 133mm centres. The panel must be installed vertically. 可隐藏接缝的搭接式板材。板材表面预涂底漆。板材之间的凹槽间距为133mm。板材必须纵向安装。 Nom. Panel Mass: 12.1kg/m^2 标称板材质量：12.1kg/m^2	9	3000	1200	**404512**
	**Axon™ Panel 400mm Grooved** **Axon™ Panel 400mm 凹槽光滑型** Is a shiplap jointed panel to hide the panel joints. The panel is face primed. The panel has grooves at 400mm centres. The panel must be installed vertically. 可隐藏接缝的搭接式板材。板材表面预涂底漆。板材之间的凹槽间距为400mm。板材必须纵向安装。 Nom. Panel Mass: 12.1kg/m^2 标称板材质量：12.1kg/m^2	9	2450	1200	**404414**
			2750	1200	**404415**
			3000	1200	**404416**

Axon™ Panel Textured | Axon™ Panel纹理型					
Product 产品	**Description 产品描述**	**Thickness 厚度(mm)**	**Size 尺寸**		**Product Code 产品编码**
			Length (mm)	**Width (mm)**	
	**Axon™ Panel Smooth** **Axon™ Panel 光滑型** *Formerly known as EasyLap™ Panel* *前身为EasyLap™ Panel* A shiplap edge panel for subtle vertical joints 拥有细微纵向接缝的搭接板材 Nom. Panel Mass: 12.1kg/m^2 标称板材质量：12.1kg/m^2	9	2450	1200	**404764**
			3000	1200	**404763**
	**Axon™ Panel Brushed Concrete** **Axon™ Panel 拉丝混凝土纹理** An embedded textured surface A shiplap edge panel with subtle vertical joints 拥有细微纵向接缝的搭接板材，表面有嵌入式的纹理 Nom. Panel Mass: 11.1kg/m^2 tbc 标称板材质量：11.1kg/m^2 （待确认）	8.5	2440	1200	**405478**
			2750	1200	**405480**
			3000	1200	**405481**
			3600	1200	**405482**

Hardie™ Axent™ Trim information | Hardie™ Axent™ 饰板产品信息					
Product 产品	**Description 产品描述**	**Thickness 厚度(mm)**	**Size 尺寸**		**Product Code 产品编码**
			Length 长 (mm)	**Width 宽(mm)**	
	For box corners and facings 用于箱角和饰面	19	3000	45	**405260**
			3000	70	**405257**
			3000	89	**405258**

Note: All dimensions and masses provided are approximate only and are subject to manufacturing tolerances.
注：所有尺寸和质量仅为近似值，且受制造公差影响。

1.2 Components and Accessories 组件与配件

Table 2 表2

Accessories/tools supplied by James Hardie | 由James Hardie提供的配件/工具			
Accessories 配件	**Description 产品描述**	**Quantity/Size (approx) 数量/尺寸 (约计)**	**Code 产品编码**
	**Hardie™ CLD™ Structural Cavity Batten** **Hardie™ CLD™ 空腔结构板条** 19mm thick fibre cement cavity batten installed over RAB™ Board or a flexible underlay. Axon™ Panel are fixed to the battens. 19mm 厚的纤维水泥空腔板条安装在RAB™ 板或弹性垫层之上。Axon™ Panel被固定在板条上。	19 x 70mm, 3000mm long 长	**405308**
	**Hardie™ Aluminium Radius External Box Corner** **Hardie™ 铝制圆角阳角箱角** A box corner mould to form the external joints. 9mm etch primed. 阳角箱角模具用于形成阳角接缝，9mm经酸蚀处理。	2750mm long 长 3000mm long 长 4000mm long 长	**306215** **306216** **306217**
	**Hardie™ Aluminium Invert External Box Corner** **Hardie™ 铝制反向阳角箱角** A corner mould to form the invert external joints. 9mm etch primed. 阳角箱角模具用于形成反向阳角接缝，9mm经酸蚀处理。	2750mm long 长 4000mm long 长	**306213** **306214**
	**Hardie™ 9mm Panel Aluminium Horizontal 'h' Mould** **Hardie™ 9mm 板材铝制横向 "h " 型模具** A horizontal flashing to flash the horizontal joints. 9mm etch primed. 横向防水板用于横向接缝。9mm 经酸蚀处理。	3000mm long 长	**304508**
	**Hardie™ 9mm Aluminium Angle T Socket** **Hardie™ 9mm 铝制T型角接口** A horizontal T flashing to flash the horizontal joints. 9mm etch primed. 横向T防水板用于横向接缝。9mm 经酸蚀处理。	3000mm long 长	**306210**

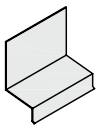
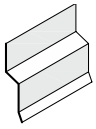
	**Hardie™ Angle T Horizontal Jointer** **Hardie™ 横向T型角接缝件** A jointer to cover the butt joint of T mould 用于覆盖T型模具对接缝的接缝件	100mm long 长	**306221**
	**Hardie™ Angle T External Corner Jointer** **Hardie™ 横向T型角阳角接缝件** T mould external corner T型阳角		**306222**
	**Aluminium 'h' Mould Jointer** **铝制“h”型模具接缝件** A jointer to cover the butt joint of 'h' mould. 用于覆盖“h”型模具对接缝的接缝件。	100mm long 长	**304512**
	**Hardie™ 9mm Panel Aluminium h External Corner Jointer** **Hardie™ 9mm 板材铝制h型阳角接缝件** 'h' mould external corner “h” 型阳角		**305940**
	**Hardie™ 9mm Aluminium Internal Corner** **Hardie™ 9mm 板材铝制阴角** to join two 9mm panels at an internal corner 在一个阴角中连接两个9mm板材	2750mm long 长 4000mm long 长	**306218** **306219**
	**uPVC Vent Strip** **uPVC 通风条** Used to provide protection from vermin entering cavity space. 用于防止害虫进入空腔。	3000mm long 长	**302490**
	**CLD™ Batten Corner Flashing Aluminium** **CLD™ 板条铝制墙角防水板** Used at internal corner sealant joints at floor joist level. 用于地板龙骨高度的阴角密封接缝。		**304652**
Tools 工具			
	**Hardie™ Blade Saw Blade** **Hardie™ Blade 锯片** Diamond tip 184mm diameter fibre cement circular saw blade. 184mm直径的金刚石刀头纤维水泥切割圆锯片。 Spacers not included. 不含垫片。	Each 每个	**300660**

Table 3 表3

Accessories/tools not supplied by James Hardie | 非 James Hardie提供的配件/工具

James Hardie recommends the following products for use in conjunction with Axon™ Panel. James Hardie does not supply these products and does not provide a warranty for their use. Please contact component manufacturer for information on their warranties and further information on their products.

James Hardie推荐以下产品同Axon™ Panel搭配使用。James Hardie不售卖这些产品，因而也不提供使用这些产品的任何质保。欲得到关于产品质保及更多详细信息，请联系相应的供应商。

Accessories 配件	Description 产品描述
	**Flexible Underlay** **弹性垫层** To comply with Table 23 of E2/AS1. 必须符合E2/AS1表23的要求。
	**Flexible Tape** **弹性胶带** A flexible self-adhesive tape used in preparation of a window. Refer to the Window installation section in this manual for more information. 一种有弹力的粘性胶带，用于做安装窗户前的准备工作。请参见本手册关于窗户安装的部分获取更多信息。 e.g. Super-Stick Building Tape® by Marshall Innovations or 3M™ All Weather Flashing Tape 8067 by 3M™ 例如Marshall Innovations生产的Super-Stick Building Tape® 和3M™生产的3M™ AllWeather Flashing Tape Marshall Innovations: 0800 776 9727 3M™: 0800 474 787
	**Joint Sealant** **接缝密封胶** Paintable flexible sealants are recommended for filling the joints. Refer to Section 7.2 for information. e.g. Sika® Sikaflex® MS, Sika® AT Facade, Bostik® Seal N Flex™-1 or similar 建议使用可刷漆的弹性密封胶填充接缝。参考第7.2 条，了解更多信息。例如Sika® Sikaflex® MS, Sika® AT Facade, Bostik® Seal N Flex™-1或类似的密封胶
	**Head Flashing** **窗楣防水板** Required over window heads to be supplied by window installer. Material must comply with Table 20 and 21 of E2/AS1. 必须安装在窗楣上，由窗户安装商提供。材料必须符合E2/AS1表 20和21的要求。
	**Flashing** **防水板** Material as per Table 20, 'E2/AS1' 按照E2/AS1表20的要求选择材料
	**C-25 Stainless Steel Brad Nails** **C-25 不锈钢细钉** 304SS brad nails used to install Axon™ Panel to the Hardie™ CLD™ Structural Cavity Battens used in a straight bradder. 304SS 细钉用于将Axon™ Panel固定至Hardie™ CLD™ 空腔结构板条，使用直钉枪固定。 Paslode®: (09) 477 3000

	**65 x 2.87mm RounDrive Ring Shank Nail** **65 x 2.87mm RounDrive 环纹螺丝钉** For fixing Hardie™ CLD™ Structural Cavity Battens to the framing. 用于将Hardie™ CLD™ 空腔结构板条固定于框架。 Paslode®: (09) 477 3000
	**Bostik® Seal N Flex™-1** 'Seal N Flex™-1' Polyurethane adhesive sealant manufactured by Bostik® for applying between the panels and battens, Refer to section 5 for more information. Bostik® 制造的‘Seal N Flex™-1’聚氨酯黏性密封胶，用于板材和板条之间。更多信息请参考第5章。 Bostik®: ALK: (09) 579 6253, WGTN: (04) 567 5119, CHCH: (03) 366 2583.
	**Sika® Sikaflex® 11FC** Sika®: 0800 SIKA NZ (0800 745 269)
	**200mm wide Polypropylene DPC** **200mm宽的聚丙烯DPC** Product used over flexible underlay at external and internal corners. ie. Super Course 500 用于阳角和阴角的弹性垫层上。即Super Course 500
	**CRC® ADOS® Builders Fill** **CRC® ADOS® 建筑填料** Two part exterior grade fill to skim coat finish over brad nails. 外墙级双组建筑填料，用于薄涂覆盖细钉。
	**Dulux® Acrasand or Dulux® Sedona acrylic texture** **Dulux® Acrasand或Dulux® Sedona 亚克力纹理漆** 0800 800 424
	**Full mesh texture coating system** **全网格纹理涂层系统** e.g. STO®, or Resene® Construction Systems Texture coating system 如，STO®, or Resene® Construction Systems 纹理涂层系统
	**Stain 染料** Timbakote®, suitable for Axon™ Panel 133mm Grained Timbakote®，适用于Axon™ Panel 133mm木纹型 Tel: 0800 846 225

1.3 Manufacturing and Classification 制作工艺及分类

Axon™ Panel is an advanced lightweight cement composite building product. The basic composition is Portland cement, ground sand, cellulose fibre, water and proprietary additives. The panel are easily identified by the name 'Axon™ Panel' printed at regular intervals on the back face of panel. Axon™ Panel is sealed and primed on the face and back is clear sealed.

Axon™ Panel是先进的轻质水泥复合建筑材料，基本组成包括波特兰水泥、细砂、纤维、水和专利添加剂，可以通过板材背面规则印刷的“Axon™ Panel”字样轻松辨认出来。Axon™ Panel的正面经过密封和底漆处理，背面经过透明密封。

Hardie™ CLD™ Structural Cavity Battens are manufactured using a low density fibre cement formulation. The basic composition is Portland cement, ground sand, cellulose fibre, water and proprietary additives. The battens are sealed on all sides.

Hardie™ CLD™ 空腔结构板条制造采用低密度纤维水泥配方，基本组成包括波特兰水泥、细砂、纤维、水和专利添加剂。板条四周都经过密封处理。

Axon™ Panel and Hardie™ CLD™ Structural Cavity Battens are manufactured in Australia to the to AS/NZS 2908.2 'Cellulose-Cement Products Part 2: Flat Sheets' (ISO 8336 'Fibre Cement Flat Panels') standards in New Zealand. James Hardie is an ISO 9001 'Telarc' certified manufacturer.

Axon™ Panel和Hardie™ CLD™ 空腔结构板条产自澳大利亚，满足澳大利亚/新西兰标准AS/NZS 2908.2 “纤维水泥产品第二部分：平板”（ISO 8336“纤维水泥平板”）的要求。James Hardie是ISO 9001 ‘Telarc’ 认证的制造商。

Axon™ Panel is classified Type A, Category 3 in accordance with AS/NZS 2908.2 “Cellulose-Cement Products”.

根据AS/NZS 2908.2 “纤维水泥产品”标准，Axon™ Panel被归类为Type A, Category 3。

For Safety Data Sheets (SDS) visit www.jameshardie.co.nz or Ask James Hardie on 0800 808 868.

请访问www.jameshardie.co.nz或致电0800 808 868垂询Ask James Hardie，获取安全数据表（SDS）。

Axon™ Panel cladding is defined as a Light Weight Wall Cladding (not exceeding 30kg/m^2) as per the NZS 3604.

Axon™ Panel按照NZS 3604的定义属于轻质外墙板（不超过30kg/m^2）。

2 Application
应用

2.1 Application 应用

Axon™ Panel are classified as lightweight wall claddings suitable for residential and light commercial buildings using timber framing. Axon™ Panel are pre-sealed on the face to take a suitable paint finish in any colour.

Axon™ Panel被归类为轻质外墙材料，适用于采用木框架结构的住宅和轻型商业建筑。Axon™ Panel表面预涂底漆，可刷上任何颜色的可兼容的油漆。

This document is intended for use by architects, designers and specifiers who may be involved with the specification of Axon™ Panel.

本手册旨在供规划设计工作中涉及Axon™ Panel的建筑师、设计师和规范方使用。

For the use of Axon™ Panel and Hardie™ CLD™ Structural Cavity Battens outside the scope of this specification, the designer, architect or engineer must ensure that the applicable clauses of the New Zealand Building Code (NZBC) have been considered and the intent of their design meets the requirements of the NZBC. Project specific details that are not covered in this specification are required to be developed by the project designer/architect.

如超出本文件范围使用Axon™ Panel和Hardie™ CLD™ 空腔结构板条，设计师、建筑师或工程师必须确保考虑到NZBC中的适用条款，且设计意图符合NZBC的要求。本文件未涵盖的项目特定细节需要由项目设计师/建筑师进行制定。

2.2 Scope 应用范围

This specification covers the use of Axon™ Panel within the following scope:

本规范涵盖了Axon™ Panel在以下范围内的使用:

- The Axon™ Panel must be installed vertically.
  请务必竖直安装Axon™ Panel。
- An external wall structure that complies with the NZBC for an existing building or new building where the designer and/or installer has established that the external wall frame is suitable for this cladding installation.
  符合新西兰建筑法规（NZBC）的现有建筑或新建筑的外墙结构，设计者和/或安装者已确定外墙框架适合安装这种覆层。
- In all wind zones up to a design wind pressure of 3.2kPa (ULS) and a building height of 25m maximum. In wind zones greater than Very High (VH), a rigid air barrier must be used i.e. RAB Board.
  在所有风区，设计风压最高达3.2kPa（ULS），建筑高度不超过25米。在大于甚高（VH）的风区，必须使用刚性密封板，即RAB板。

2.3 Limitations 局限性

- Axon™ Panel must not be used on curved wall applications
  Axon™ Panel不得应用于曲面墙体
- Axon™ Panel must not be installed horizontally or angled
  Axon™ Panel不得水平或倾斜安装
- The minimum ground clearances specified must be maintained
  必须保持规定的最小离地间隙
- Timber window joinery/recessed openings is subject to an alternative design by the designer
  木窗细木工/凹槽开口由设计师另行设计

- Maximum SLS inter-story seismic deflections up to span/180 when used in specific design buildings (SED) buildings above 10m height. To accommodate higher inter-story drifts, a deflection should be used.

  在特殊设计建筑（SED）高度超过10米时，最大SLS层间地震挠度可达180跨距。为了适应较高的层间漂移，应使用变形量。

2.4 Details 详图

Various Axon™ Panel figures are provided in the Details section of this document. This specification and details in dwg, dxf, jpg and pdf file format are also available for download at www.jameshardie.co.nz.

这本技术规范的“详图”部分提供了各种Axon™ Panel详细图示。请访问我们的网站www.jameshardie.co.nz下载dwg、jpg 及pdf格式的详图文件。

All dimensions shown are in millimetres unless noted otherwise.

除特殊标明单位处之外，详图中所有其它尺寸默认单位为毫米。

3 Compliance 合规

3.1 Compliance 合规

Axon™ Panel installed in accordance with this specification has been tested and meets the requirements of clauses E2, B1, B2 and F2 of the NZBC.

按照本规范安装的Axon™ Panel已经过测试，符合NZBC的条款E2、B1、B2和F2。

When installed in accordance with the conditions of CodeMark number CMNZ30165 Axon™ Panel complies with all relevant requirements of the NZBC. Please refer to www.building.govt.nz or www.jameshardie.co.nz for a copy of the certificate.

当按照CodeMark编号CMNZ30165的条件安装时，Axon™ Panel符合NZBC的所有相关要求。请参阅www.building.govt.nz或www.jameshardie.co.nz获取证书副本。

CodeMark
CMNZ30165

Axon™ Panel Hardie™ CLD™ Structural Cavity Batten technical specification has been BRANZ appraised. Appraisal No. 1211 (2022). Please refer to our website www.jameshardie.co.nz for a copy of the BRANZ appraisal 1211(2022).

Axon™ Panel Hardie™ CLD™ 空腔结构板条技术规范已通过BRANZ评估。评估编号1211（2022）。请访问我们的网站www.jameshardie.co.nz获取BRANZ评估1211（2022）的副本。

BRANZ Appraised
Appraisal No.1211 [2022]

4 Design
设计

4.1 Responsibility 责任

The specifier or other party responsible for the project must run through a risk matrix analysis to determine which onstruction method is to be used. The designer must also ensure that the figures published in this specification are appropriate for the intended application and that additional detailing is performed for specific design or any areas that fall outside the scope of this specification. The designers should ensure that the intent of their design meets the requirements of the NZBC.

项目规范方或其他责任方必须确保项目经过风险矩阵分析，以确定使用哪种结构。设计师也须确保本规范中的详图适用于项目的实际应用，并针对特殊设计或超出本技术规范范围的区域提供额外的详图。设计师应确保设计意图符合NZBC的要求。

Specifier 项目规范方

If you are a specifier or other responsible party for a project, ensure that the information in this document is appropriate for the application you are planning and that you undertake specific design and detailing for areas which fall outside the scope of these specifications.

如果您是建筑项目的规范方或其他责任方，请确保本文件中的信息适用于您所计划的用途。如有超出所述用途的部分，请确保加以具体的工程设计并提供设计详图。

Installer 项目施工方

If you are an installer ensure that you follow the design, moisture management principles, associated details and material selection provided by the designer. All of the details provided in this document must be read in conjunction with this specification.

如果您是建筑项目的施工方，请确保遵循设计师及这本James Hardie技术规范提供的设计、湿度管理原则、相关详图和材料选择。本文件中提供的所有详图都必须结合设计规范阅读。

Make sure your information is up to date
确保您的信息是最新的是最新的

When specifying or installing Hardie™ fibre cement products, ensure you have the current manual. If you're not sure you do, or you need more information, visit www.jameshardie.co.nz or Ask James Hardie™ on 0800 808 868.
All New Zealand Standards referenced in this manual are current edition and must be complied with.

当指定或安装Hardie™ 纤维水泥产品时，请确保您使用的是现行版本手册。如您不确定是否使用了现行版本，或您需要更多信息请见www.jameshardie.co.nz或致电0800 808 868 垂询Ask James Hardie™。本手册中引用的所有新西兰标准均为最新版本，请务必遵守。

James Hardie conducts stringent quality checks to ensure that any product manufactured falls within our quality spectrum. It is the responsibility of the builder to ensure that the product meets aesthetic requirements before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation.

为确保生产的所有产品都符合我们的质量标准，James Hardie进行严格的质量检查。在安装之前，承建方有责任确保产品满足审美要求。安装后，James Hardie将不负责修正明显的审美上的表面差异。

4.2 Clearances 间隙

The clearance between the bottom edge of cladding and paved/unpaved ground must comply with section 9.1.3 of E2/AS1. The finished floor level must also comply with these requirements These clearances must be maintained throughout the life of the building.

外墙板下缘与已铺/未铺地面的间隙必须符合E2/AS1的第9.1.3条的规定。已铺地板的高度也必须符合以上规定。并且须要一直保持这一间隙标准，贯穿建筑物寿命始终。

Axon™ Panel must overhang the bottom plate on a concrete slab by a minimum of 50mm as required by NZS 3604.

按照NZS 3604的要求，Axon™ Panel须悬出混凝土楼板上的底板至少50mm。

Axon™ Panel must have a minimum clearance of 100mm from paved ground, and 175mm from unpaved ground.

Axon™ Panel须与铺装地面保持最小间隙100mm，与未铺装地面保持最小间隙175mm。

On roofs and decks, the minimum clearance must be 50mm.

在屋顶和露台，最小间隙须为50mm。

Do not install external cladding such that it may remain in contact with water or ground.

不要将外墙板安装在可能持续接触到水或地面的地方。

4.3 Structure 结构

4.3.1 Timber Framing 木框架

Timber framing must be in accordance with NZS 3604 (Timber-framed buildings) or designed as for specific engineering design (SED) in accordance with NZS 3603 and AS/NZS 1170 where specific engineering design is required, the framing stiffness must be equivalent to or more than the framing provisions of NZS 3604.

木框架必须符合新西兰标准NZS 3604（木框架建筑），或者根据NZS 3603和AS/NZS 1170进行特殊工程设计（SED）。在需要特殊工程设计的情况下，框架的刚度必须等于或超过NZS 3604的框架要求。

4.3.2 Durability 耐久性

The external framing must be treated to a minimum H1.2 treatment. Higher treatment levels may be used, but check for the compatibility of treatment chemicals with other materials. Refer to the NZBC Acceptable Solution B2/AS1 'Durability' for further information about the durability requirements.

房屋框架所用的木材必须经过化学处理，达到至少H1.2的处理程度。更高的处理程度同样可行，但请事先确保该化学处理剂与建筑中的其它材料兼容。更多关于耐久性要求的详细信息，请参见NZBC可接受方案B2/AS1的“耐久性”条款。

For timber treatment and allowable moisture content information refer to the NZS 3602 (Timber and Wood-Based Products for use in Buildings) and NZS 3640 (Chemical Preservation of Round Sawn Timber) for minimum timber treatment selection and treatment requirements.

有关木材处理及木材含水量可接受范围的信息，请参见NZS 3602（用于建筑的木材及木质产品）以及NZS 3640（圆形锯木的化学防腐），了解木材处理程度最低限值及处理要求。

Also refer to the framing manufacturer's literature for further guidance on timber selection. Framing must be protected from moisture at site in accordance with the recommendation of the framing manufacturers.

另请参见木框架生产商所提供的说明材料，获得木材选择的进一步指导。在施工现场，必须按照框架生产商的建议对木框架进行防潮保护。

4.4 Moisture Management 湿度管理

It is the responsibility of the specifier to identify moisture related risks associated with any particular building design.

识别与特定建筑设计相关的湿度风险是规范方的责任。

Wall construction design must effectively manage moisture, considering both the interior and exterior environments of the building, particularly in buildings that have a higher risk of wind driven rain penetration or that are artificially heated or cooled.

墙体结构设计必须考虑建筑物的内部和外部环境，有效地管理湿度，特别是对于那些由于风向原因更容易灌入雨水的建筑，或是那些使用人工制冷或制热的建筑。

Walls must include those provisions as required by the NZBC Acceptable Solution E2/AS1 'External Moisture'. In addition all wall openings, penetrations, junctions, connections, window sills, heads and jambs must incorporate appropriate flashings for waterproofing. The other materials, components and installation methods used to manage moisture in external walls, must comply with the requirements of relevant standards and the NZBC.

墙体须要符合NZBC可接受方案E2/AS1“外部湿度”的相关规定。另外，所有的墙体开口处、穿透处、交汇处、连接处，窗沿、窗楣和窗框都必须安装合适的防水板用于隔离湿气。用于管理外墙湿度的其他材料、组件和安装方法必须符合相关标准和NZBC的要求。

For further guidance on designing for weathertightness refer to BRANZ Ltd, and the Ministry of Business Innovation and Employment (MBIE) updates on the following websites respectively, www.branz.co.nz and www.building.govt.nz

更多有关防风雨设计的指导，请参见BRANZ Ltd和新西兰商业创新与就业部（MBIE）的网站更新，网址分别为www.branz.co.nz和www.building.govt.nz。

4.5 Energy Efficiency 隔热能效

External walls constructed as per this technical specification, using Axon™ Panel cladding must use suitable bulk insulation to meet the minimum thermal insulation requirements as per Clause H1/AS1 'Energy Efficiency' of the NZBC.

按照本技术规范采用Axon™ Panel建造的外墙必须使用适当的保温材料来满足NZBC中H1/AS1“隔热能效”条款的最低保温要求。

4.6 Bracing 支撑

Axon™ Panel installed to Hardie™ CLD™ Structural Cavity Battens as per this specification cannot be used to achieve structural bracing. However, bracing can be achieved by using HomeRAB™ Pre-Cladding/RAB™ Board installed direct to framing instead of a flexible underlay or by using Villaboard™ Lining bracing system on the internal face.

按照本规范将Axon™ Panel固定于Hardie™ CLD™ 空腔结构板条不能起到任何结构支撑作用。但是，用HomeRAB™ 预置垫层/RAB™ 板代替常规的弹性垫层直接安装在屋体框架上，或在内墙墙面上使用Villaboard™ 内衬支撑系统，可达到支撑效果。

4.7 Control of External Fire Spread 外部火势蔓延的防控

Axon™ Panel material is classified as 'Type-A' as per Table C1.3 when tested to the requirements of Appendix C7.1.1 (b) of C/AS2 of the NZBC and is suitable for use where 'Non Combustible Material' or ' Limited Combustibility Material' is required for use in buildings located anywhere in relation to the relevant boundary for building within the scope of C/AS1 or C/AS2.

根据NZBC C/AS2附录C7.1.1 (b)的要求进行测试后，Axon™ Panel材料被分类为表C1.3中的“A型材料（Type-A）”，适用于需要“不燃材料”或“有限可燃材料”的建筑物，用于位于C/AS1或C/AS2范围内与建筑物相关边界相关的任何地方。

- Where the upper floors contain sleeping uses or other property, a horizontal flashed joint must be provided to block the top of lower cavity at intervals of no greater than 3.5m vertical height. Refer to Figure 55.

  如果上层楼层用于睡眠或其他用途，必须设置水平防水接缝，以在不超过3.5米的垂直高度间隔处封堵下层空腔顶部。参见图55。
- On buildings greater than 10m in height a RAB™ Board must be used.

  对于高度大于10米的建筑物，必须使用RAB™ 板。

4.8 Resistance to Moisture/Rotting 耐潮/耐腐蚀

Axon™ Panel has demonstrated resistance to permanent moisture induced deterioration (rotting) and has passed the following tests in accordance with AS/NZS 2908.2:

Axon™ Panel能够抵抗长期潮湿所导致的恶化（腐烂），并成功通过了AS/NZS 2908.2规定的测试：

- Heat Rain (Clause 6.5). 热雨（第6.5条）
- Water Permeability (Clause 8.2.2). 透水性（第8.2.2条）
- Warm Water (Clause 8.2.4). 温水（第8.2.4条）
- Soak Dry (Clause 8.2.5). 浸泡后风干（第 8.2.5条）

4.9 Fire Rated Walls 墙面耐火等级

Axon™ Panel when fixed to Hardie™ CLD™ Structural Cavity Battens, a fire resistance rating of up to 60 minutes can be achieved when used in conjunction with RAB™ Board and the fire rated system requirements as specified in the 'Fire and Acoustic Design Manual' by James Hardie. Ask James Hardie on 0800 808 868 for further information.

结合《James Hardie 消防与隔音设计手册》规定的的耐火评级系统的要求，Axon™ Panel固定于Hardie™ CLD™ 空腔结构板条，并使用RAB™ 板，可实现耐火评级达60分钟。更多信息，请致电0800 808 868垂询Ask James Hardie。

Nogs in fire rated walls must be at 800mm centres maximum.

防火墙内的水平支撑件的最大间距须为800mm。

Axon™ Panel are suitable for use where non-combustible materials are required on walls close to boundary.

Axon™ Panel适用于要求使用不可燃材料的临近边界的墙体。

4.10 Alpine Regions 高寒地区

In regions subject to freeze/thaw conditions, Axon™ Panel must not be in direct contact with snow or ice build up for extended periods, e.g. external walls in alpine regions must be protected where snow drifts over winter are expected.

对于经常出现冰冻/融化状况的地区，Axon™ Panel不得长时间直接接触积雪或冰块。例如，在冬天可能出现堆雪现象的高寒地区，外墙必须受到遮蔽保护。

The Axon™ Panel has been tested in accordance with AS/NZS 2908.2 Clause 8.2.3.

Axon™ Panel经测试符合AS/NZS 2908.2的第8.2.3

4.11 Steel Framing 钢框架

Refer to Steel Frame Technical Supplement by James Hardie about the installation of Axon™ Panel to steel frame.

请参阅James Hardie的《钢框架技术补充手册》了解Axon™ Panel在钢框架上的安装方法。

4.12 Cavity Construction 空腔结构

Buildings with a risk score of 7-20 calculated in accordance with the NZBC Solution 'E2/AS1' Table 2, Axon™ Panel must be installed on a cavity.

按照NZBC解决方案 'E2/AS1' 表2的划分，对于风险分数在7-20之间的建筑物而言，Axon™ Panel应安装在空腔上。

Note: Refer to Axon™ Panel Timber Cavity Batten technical specification when fixing to timber cavity battens or Axon™ Panel Direct Fix technical specification for direct fix.

注：当固定于木制空腔板条时，请参见《Axon™ Panel固定于木制空腔板条技术规范》。当直接固定时，请参见《Axon™ Panel直接固定技术规范》。

4.13 Tolerances 误差

In order to achieve the required performance and an acceptable wall finish, it is imperative that framing is straight and true.

为了达到所需的性能和可接受的墙面效果，必须保证框架是直的。

Framing tolerances must comply with the requirements of NZS 3604. All framing shall be made flush.

框架的误差必须符合NZS 3604的要求。所有的框架都必须齐平。

4.14 Movement Joints 接缝位移

Due consideration must be given to accommodate framing movement in timber framed walls longer than 12m.

对于长度超过12米的木框架墙，应充分考虑框架的位移。

5 Safe Working Practices 安全施工守则

WARNING - DO NOT BREATHE DUST AND CUT ONLY IN WELL VENTILATED AREA

警告 – 切勿吸入粉尘，请仅在通风良好的环境下进行切割。

Hardie™ fibre cement products contain sand, a source of respirable crystalline silica

Hardie™ 纤维水泥产品中含有沙子，是可吸入结晶二氧化硅的来源

May cause cancer if dust from product is inhaled. Causes damage to lungs and respiratory system through prolonged or repeated inhalation of dust from product.

如吸入产品中的粉尘，可能会导致癌症，长期反复吸入产品中的粉尘，会对肺及呼吸系统造成损害。

Intact fibre cement products are not expected to result in any adverse toxic effects. The hazard associated with fibre cement arises from the respirable crystalline silica present in dust generated by activities such as cutting, rebating, drilling, routing, sawing, crushing, or otherwise abrading fibre cement, and when cleaning up, disposing of or moving dust.

完整的纤维水泥产品预期不会对人体造成有毒害的影响。与纤维水泥相关的有害物质是在切割、打磨、钻孔、铣削、锯切、压碎或其他方式研磨纤维水泥时，及清理、处理或移动时产生的含有可吸入结晶二氧化硅粉尘引起的。

When doing any of these activities in a manner that generates dust, follow James Hardie instructions and best practices to reduce or limit the release of dust.

在进行以上活动时，请遵循James Hardie的指导及安全施工守则，以降低及限制粉尘的散播。

If using a dust mask or respirator, use an AS/NZS 1716 P1 filter and refer to Australian/New Zealand Standard 1715:2009 Selection, Use and Maintenance of Respiratory Protective Equipment for more extensive guidance and more options for selecting respirators for workplaces. For further information, refer to our installation instructions and Safety Data Sheets available at www.jameshardie.co.nz.

如使用防尘面罩或呼吸器，请使用AS/NZS 1716 P1滤芯，并参见《澳大利亚/新西兰1715:2009 标准-选择，使用和维护呼吸防护设备》的全面指导及其提供的更丰富的作业用呼吸器选择。欲知更多信息，请查看www.jameshardie.co.nz，参见我们的安装说明及安全数据表。

FAILURE TO ADHERE TO OUR WARNINGS, SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

未能遵守我们的警告、安全数据表和安装说明，可能会导致严重的人身伤害或死亡。

Crystalline Silica is

结晶二氧化硅是

- Commonly known as sand or quartz
  俗称沙子或石英
- Found in many building products e.g. concrete, bricks, grout, wallboard, ceramic tiles, and all fibre cement materials
  存在于众多建筑产品中，例如混凝土，砖，水泥浆，墙板，瓷砖和所有纤维水泥材料

Why is Crystalline Silica a health hazard?

为什么结晶二氧化硅会危害健康？

- Silica can be breathed deep into the lungs when present in the air as a very fine (respirable) dust
  二氧化硅以极细（可被吸入的）的粉尘形式存在于空气中时，可深吸到肺部
- Exposure to silica dust without taking the appropriate safety measures to minimise the amount being breathed in, can lead to a potentially fatal lung disease – silicosis – and has also been linked with other diseases including cancer. Some studies suggest that smoking may increase these risks
  接触二氧化硅粉尘而未采取适当的安全措施以最大程度地减少吸入量，可能会导致致命的肺部疾病——矽肺病，并且还与包括癌症在内的其他疾病有关。一些研究表明，吸烟可能会增加这些风险
- The most hazardous dust is the dust you cannot see!
  危害最大的粉尘是你看不见的粉尘!

When is Crystalline Silica a health hazard?

结晶二氧化硅在何种情况下会危害健康？

- It's dangerous to health if safety protocols to control dust are not followed when cutting, drilling or rebating a product containing crystalline silica and when cleaning up
  在切割，钻孔，打磨或清理含有结晶二氧化硅的产品时，如不遵守控制粉尘的安全守则，会危害健康
- Products containing silica are harmless if intact (e.g. an un-cut sheet of wall board)
  含硅的产品在完整的情况下是无害的（比如，未切割的墙板）

Avoid breathing in crystalline silica dust

避免吸入结晶二氧化硅粉尘

Safe working practices

安全施工守则

✗ NEVER use a power saw indoors or in a poorly ventilated area

切勿在室内或通风不佳的区域使用电锯

✗ NEVER dry sweep

切勿干扫

✓ ALWAYS use M Class or higher vacuum or damp down dust before sweeping up

始终使用M级或更高级别的吸尘器，或在清扫之前沾湿粉尘

✗ NEVER use grinders

切勿使用研磨机

✓ ALWAYS use a dust reducing circular saw equipped with a sawblade specifically designed to minimise dust creation when cutting fibre cement – preferably a sawblade that carries the Hardie™ Blade name or one with at least equivalent performance – connected to an M Class or higher vacuum

始终使用降尘圆锯，圆锯装有专为切割纤维水泥设计的可减少粉尘产生的锯片-最好是带有Hardie™ Blade商标的锯片或者至少具有同等功能-并与M级或更高级别的吸尘器相连接

✓ Before cutting warn others in the area to avoid dust

在切割之前，警示他人躲避扬尘

✓ ALWAYS follow tool manufacturers' safety recommendations

始终遵循工具生产商的安全建议

✓ ALWAYS expose only the minimum required depth of blade for the thickness of fibre cement to be cut

根据需要切割的纤维水泥板的厚度，始终仅露出所需最小的刀片深度

✓ ALWAYS wear a properly-fitted, approved dust mask or respirator P1 or higher in accordance with applicable government regulations and manufacturer instructions

始终根据适用的政府法规和制造商指导佩戴合适的、经过批准的P1或更高级别的防尘面罩或呼吸器

✓ Consider rotating personnel across cutting tasks to further limit respirable silica exposures.

考虑轮换人员进行切割，进一步限制对可吸入二氧化硅的接触

When cutting Axon™ Panel:

在切割Axon™ Panel时：

✓ Work outdoors only

仅在室外作业

✓ Make sure you work in a well ventilated area

确保作业环境通风良好

✓ Position cutting station so wind will blow dust away from yourself and others in the working area

妥善放置切割工作台，便于风将粉尘吹离你和在工作区域内的其他人

✓ Rotate employees across cutting task over duration of shift

安排工作人员轮值进行切割任务

- ✓ Cut products with a Hardie™ Blade Saw Blade (or equivalent) and a dust reducing circular saw connected to a M Class or higher vacuum

  使用Hardie™ Blade锯片（或具有同等功能的锯片）切割产品，采用降尘圆锯连接M级或更高级别的吸尘器。

- ✓ When sawing, sanding, rebating, drilling or machining fibre cement products, always:

  在锯切、砂磨、打磨、钻孔或加工纤维水泥产品时，请始终：

  - Wear your P1 or higher (correctly fitted in accordance with manufacturers' instructions), ask others to do the same.

    佩戴P1或更高级别的防护面罩（根据制造商指导正确佩戴），并要求他人也这样做

  - Keep persons on site at least 2 metres and as far as practicable away from the cutting station while the saw is in operation

    让施工现场的人在锯切过程中尽可能远离切割工作台或至少保持2米距离

  - If you are not clean shaven, then use a powered air respirator with a loose fitting head top

    如果您留有胡子，请佩戴带有宽松头戴式面罩的电动送风呼吸器

  - Wear safety glasses

    佩戴安全镜

  - Wear hearing protection

    佩戴护耳器

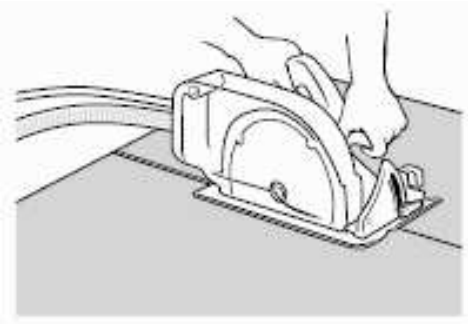
- ✓ Make sure you clean up BUT never dry sweep. Always hose down with water/wet wipe or use an M Class or higher vacuum

  确保清洁，但切勿干扫。始终用水管冲洗或用湿抹布清洁，又或使用M级或更高级别的吸尘器

Working Instructions

作业说明

Hardie™ Blade Saw Blade
Hardie™ Blade锯片



The Hardie™ Blade Saw Blade used with a dust-reducing saw is ideal for fast, clean cutting of Hardie™ fibre cement products. A dust-reducing saw uses a dust collector connected to a M Class or higher vacuum. When sawing, clamp a straight edge to the sheet as a guide and run the saw base plate along the straight edge when making the cut.

Hardie™ Blade 锯片与降尘圆锯一起使用，可以快速干净的切割 Hardie™ 纤维水泥产品。降尘圆锯配有粉尘收集器，可与M级或更高级别的吸尘器连接。锯切时，请将直线边缘夹在平板上作为导向，并让锯齿底部板沿直线进行切割。

Hole-Forming
成孔



For smooth clean cut circular holes:

形成平滑整齐的圆孔：

- Mark the centre of the hole on the sheet
  在板上标记孔的中心
- Pre-drill a 'pilot' hole
  预钻一个孔

- Using the pilot hole as a guide, cut the hole to the appropriate diameter with a hole saw fitted to a heavy duty electric drill
  在该预钻孔的基础上，使用配在重型电钻上的孔钻，钻出所需直径的孔

For irregular holes:

不规则的孔：

- Small rectangular or circular holes can be cut by drilling a series of small holes around the perimeter of the hole then tapping out the waste piece from the sheet face
  如需钻出小的长方形或圆形孔，可在周边钻一系列的小孔， 然后从表面将多余部分敲打掉
- Tap carefully to avoid damage to sheets, ensuring that the sheet edges are properly supported
  谨慎敲打，以防破坏板材，确保板材周边都有良好支撑

5.1 Storage and Delivery 储存和运输

Keeping products and people safe

保证产品和人员安全

Off loading 卸货

✓ Hardie™ fibre cement products should be off-loaded carefully by hand or by forklift
Hardie™ 纤维水泥产品须手工搬运或使用叉车小心卸载

✓ Hardie™ fibre cement products should not be rolled or dumped off a truck during the delivery to the jobsite
Hardie™ 纤维水泥产品不应在运输至作业现场的过程中滚下或倾倒

Storage 储存

Hardie™ fibre cement products should be stored:

Hardie™ 纤维水泥产品的储存一定要：

✓ In their original packaging
储存至原包装

✓ Under cover where possible or otherwise protected with a waterproof covering to keep products dry
尽可能储存在有遮盖的地方或用防水层保护，保持产品干燥

✓ Off the ground – either on a pallet or adequately supported on timber or other spacers
不直接放在地面上—应放置在货板上或有充分支撑的木料和其他垫板上

✓ Flat so as to minimise bending
尽可能平放以减少弯曲

Hardie™ fibre cement products must not be stored:

Hardie™ 纤维水泥产品储存一定不要：

✗ Directly on the ground
直接放置在地上

✗ In the open air exposed to the elements
暴露在空气中，接触到化学品

James Hardie is not responsible for damage due to improper storage and handling.

因储存和搬运不当导致的产品损坏不在James Hardie的责任范围内。

5.2 Tips for safe and easy handling of Axon™ Panel
轻松安全搬运Axon™ Panel的技巧

- ✓ Carry with two people
  两个人搬运
- ✓ Hold near each end and on edge
  抬起靠近板材两端和边缘的位置
- ✓ Exercise care when handling sheet products to avoid damaging the edges/corners
  对于板材，须轻拿轻放，避免损坏边角处

6 Installation
安装

Note: This specification is not for timber cavity battens. Refer to separate technical specification from James Hardie.

注：本规范不适用于木制空腔板条。如需固定在木制空腔板条，请参见James Hardie提供的另一份技术规范。

6.1 Hardie™ CLD™ Structural Cavity Battens
Hardie™ CLD™ 空腔结构板条

The Hardie™ CLD™ Structural Cavity Batten must be fixed to the framing as specified in Table 4. A minimum distance of 50mm from the end of the batten must be maintained when fixing the Hardie™ CLD™ Structural Cavity Battens.

Hardie™ CLD™ 空腔板条必须按照表4的规定固定在框架上。固定Hardie™ CLD™ 空腔结构板条时，必须与板条末端保持至少50mm的距离。

6.1.1 Batten Layout 板条布局

Hardie™ CLD™ Structural Cavity Battens must be fixed to the wall framing over flexible underlay or an E2/AS1compliant rigid air barrier. The smoother face of batten should face towards the cladding.

Hardie™ CLD™ 空腔结构板条必须固定于铺设有弹性垫层或符合E2/AS1要求的刚性密封板的墙体框架。板条较为光滑的一面应面向外墙板。

For batten fixing, refer to section 6.1. Ensure the battens are straight and provide a flat surface to fix Axon™ Panel to. Site cut ends of battens must be sealed on site with Dulux® Acraprime® 501/1 sealer or Resene® Quick Dry.

关于板条固定，请参见第6.1部分。确保板条是笔直的，可以为Axon™ Panel的固定提供一个平整的表面。现场切割的板条末端必须使用Dulux® Acraprime® 501/1密封剂或Resene® Quick Dry进行现场密封。

The battens are run continuously over the studs but they must not be run continuously over the floor joists. There must be a 15mm gap between the battens at floor joist level to allow for structural shrinkages and deflections. Refer to Figure 29.

板条可沿立筋连续安装，但不得沿地板龙骨连续安装。地板龙骨高度的板条之间必须留有15mm间隙，为结构收缩变形留出余地。参见图29。

Hardie™ CLD™ Structural Cavity Battens can be butt jointed over the studs within the floor height. The batten ends must be cut between 20º to 45º and be installed in a way that the butt joint deflects the moisture to the exterior. The ends must be sealed and jointed with the adhesive sealant before butting them together. Refer to Figure 18.

Hardie™ CLD™ 空腔结构板条可在楼层高度内沿立筋安装并相互对接在一起。板条末端须切割成20°到45°，在安装时确保对接缝将水分排向建筑物的外部。板条末端必须进行密封处理，在对接起来之前先涂抹黏性密封胶。参见图18。

The smallest section of Hardie™ CLD™ Structural Cavity Battens must be at least 300mm long.

Hardie™ CLD™ 空腔结构板条不可切割成小于300mm的长度使用。

At corners ensure 200mm minimum wide polypropylene or flashing tape is applied to flexible underlay over timber framing prior to Hardie™ CLD™ Structural Cavity Battens installation for protection.

在拐角处，确保在安装Hardie™ CLD™ 空腔结构板条之前，在木框架上的弹性垫层上应用至少200毫米宽的聚丙烯或防水胶带进行保护。

6.1.2 Fasteners 紧固件

Before starting the panel installation, plan the location of panel joints to suit the house design/elevations.

在开始安装面板之前，请规划面板接缝的位置，以适应房屋设计/立面。

Table 4 表4

Hardie™ CLD™ Structural Cavity fixing | Hardie™ CLD™ 空腔结构板条固定				
Fixing Type 固定方式	**Framing 框架**	**Design Wind Pressures kPa (ULS) 基础风压 kPa (ULS)**	**Stud/Batten centres max.立筋/板条最大间距 (mm)**	**Fixings centres max. 最大固定间距 (mm)**
65mm x 2.8mm RounDrive ring shank nail hot dip galv./ s.steel 65mm x 2.8mm RounDrive环纹螺丝钉（热浸镀锌/ 不锈钢）	Timber/Steel 木制/钢制	Up to 1.5 (Up to and including VH wind zone) 可达1.5（包括VH 级别及以下风区）	600	250
		Up to 3.2 可达3.2	400	200

For fastener durability information, refer to Clause 6.2 of this document.

有关紧固件耐久性的信息，请参见本规范的第6.2条。

Hardie™ CLD™ Structural Cavity Battens less than 400mm in length must have fixings at maximum 150mm centres.

Battens must be fixed over studs.

Hardie™ CLD™ 空腔结构板条高度小于400mm时，固定间距不得超过150mm。板条必须固定在立筋上。

6.2 Panels 板材

Axon™ Panel must be kept dry and under cover whilst in storage or during the installation. Every endeavour must be made to keep framing dry once panel fixing commences. All site-cut panel edges must be sealed prior to installation.

Axon™ Panel在储存和安装的过程中必须保持干燥，并受到遮蔽。一旦开始固定板材，必须要尽全力让框架保持干燥。在安装之前，所有现场切割的板材边缘都必须进行密封。

- The shiplap jointing of panels is only suitable for vertical fixing of panels.
  板材的搭接缝仅适用于纵向固定。
- Ensure the sheets are from the same batch.
  确保所安装的板材为同一批次。
- It is recommended to fix from the centre of the panel and work outwards.
  建议从板材的中心开始固定，再向两边延伸。
- Do not overdrive fasteners.
  不要将紧固件拧的过紧。
- Fixings must be finished flush with the panel surface.
  紧固件必须与板材表面齐平。
- Do not fix in the groove of Axon™ Panel.
  不要在 Axon™ Panel的凹槽内入钉固定。
- Minimum sheet width around window/door openings or corners etc. to be 200mm.
  门窗开口处、墙角等位置的板材宽度不得小于200mm。

Fix Axon™ Panel to Hardie™ CLD™ Structural Cavity Battens using one of the following fixings specified in Table 5. The edge distance at panel corner must be minimum 75mm vertically from panel corners. Refer to Figure 3.

使用表5中指定的下列固定件之一将Axon™ Panel固定到Hardie™ CLD™ 空腔结构板条上。面板边角处的边缘距面板边角垂直距离不小于75mm。参见图3。

Table 5 表5

Axon™ Panel Fixing | Axon™ Panel的固定		
Types of fixing to be used with adhesive sealants 配合黏性密封胶使用的固定方式	**Suitable up to Design Wind Pressures kPa (ULS) 适用于设计风压最高达kPa (ULS)上限**	**Fixing to Hardie™ CLD™ Structural Cavity Batten centres (mm) 固定到Hardie™ CLD™ 空腔结构板条上的间距**
C-25 straight 'T'- Head stainless steel brad nail C-25直“T”头不锈钢细钉	3.2kPa (Up to and including VH wind zone) （包括VH 级别及以下风区）	150

Notes: Nails must be finished flush with panel surface.
注：钉子必须与板材表面齐平。

Set up nail gun in accordance with manufacturers instructions.

按照制造商的说明准备钉枪。

Use small piece of fibre cement and timber to test nail depth before installation of panels.

在安装板材之前，使用小块纤维水泥和木材测试钉深。

For best results, leave nail heads proud and carefully tap flush with a smooth hammer.

为了获得最佳效果，将钉头稍稍露出，然后用光滑的锤子小心地敲平。



Check: If using a pneumatic hose, fit a pneumatic pressure gauge to ensure consistent firing pressure.

检查：如果使用气动软管，请安装气动压力表以确保稳定的射击压力。

When installing Axon™ Panel Brushed Concrete, it is recommended to position the gun nail sideways so the brad nail heads are are aligned with the texture pattern.

当安装Axon™ Panel拉丝混凝土纹理时，建议将枪钉侧向放置，以便细钉头与纹理图案对齐。

6.3 Fastener Durability 紧固件耐久性

Fasteners must meet the minimum durability requirements of the NZBC. NZS 3604 specifies the requirements for fixing material to be used in relation to exposure conditions and are summarised in Table 6.

紧固件必须符合NZBC的最低耐久性要求。NZS 3604规定了用于室外环境下的金属固件的材质， 汇总于表6。

Table 6 表6

Exposure conditions and nail selection prescribed by NZS 3604 NZS 3604 对室外暴露环境的定义及钉子选择的要求		
Zone 区域	**Application 应用**	
D (sea spray) and geothermal hot spots D区（海雾）和地热区	General 通用	Stainless steel 304/316 不锈钢 304/316
	Fire 耐火	
	Bracing 支撑	
C and B* C区和B区*	General 通用	Hot dip galvanised ** 热浸镀锌 **
	Fire 耐火	
	Bracing 支撑	

* Zone C areas where local knowledge dictates that increased durability is required, appropriate selection shall be made. Microclimate conditions as detailed in the NZS 3604, Paragraph 4.2.4 require SED.

*在C区，如果当地情况证明须要提高耐用性，则需做出适当的选择，根据NZS 3604第4.2.4条的要求，按微气候条件进行特殊工程设计。

**Hot dip galvanised must comply with AS/NZS 4680.

**热浸镀锌必须符合AS/NZS 4680的规定。

Also refer to the NZBC Acceptable Solution E2/AS1 Table 20 and 21 for information regarding the selection of suitable fixing materials and their compatibility with other materials.

还请参见NZBC可接受方案E2/AS1的表20和21，了解有关选择合适的固定材料以及与其他材料兼容性的信息。

6.4 Adhesive Sealant 黏性密封胶

A polyurethane adhesive sealant Seal N' Flex™-1 manufactured by Bostik® or SikaFlex® 11FC by Sika® are recommended for use in the installation of these products. Apply a 6mm continuous bead of this adhesive sealant over the face of the Hardie™ CLD™ Structural Cavity Batten before fixing the Axon™ Panel. Refer to Figures 6 to 8.

建议安装产品时使用Bostik®生产的聚氨酯黏性密封胶Seal N' Flex™-1，或Sika®生产的SikaFlex® 11FC。固定Axon™ Panel之前，在Hardie™ CLD™ 空腔结构板条的表面涂抹一条连续的6mm粗的黏性密封胶。请参见图6至图8 。

When using external box corner flashing, use a 10mm thick bead of adhesive over the aluminium box corner flanges. Refer to Figure 10.

使用阳角箱角防水板时，在铝制箱角的翼板上涂抹10mm粗的黏性密封胶。参见图10。

Note: Do not use excessive adhesive.

注：不要使用过量的密封胶。

6.5 Framing 框架

Framing to be in accordance with the NZS 3604, or SED. The following must be provided for fixing Axon™ Panel:

框架应符合NZS 3604或SED。固定Axon™ Panel时必须提供以下条件:

- Studs at 600mm centres maximum for all wind speed zones up to and including very high (VH)
  在风速达到及包括VH级别的所有风速区中，立筋间距最大为600mm
- Studs at 400mm centres maximum for wind pressures more than 1.5 kPa (uls)
  当风压超过1.5 kPa（ULS）上限时，立筋间距最大为400mm

- Double studs are required at internal corners
  阴角处需要双立筋
- Extra packers may be required at external corners
  阳角处可能需要额外的封隔
- Extra studs are required for aluminium internal corner sections
  铝制阴角处需要额外的立筋

6.5.1 Specific Engineering Design (SED) 特殊工程设计

For specific engineering design projects the timber framing is required to be designed in accordance with NZS 3603 and AS/NZS 1170. The minimum framing sizes and stud spacing layout must comply with this specification, as listed above.

对于特殊工程设计项目，木框架需要根据NZS 3603和AS/NZS 1170进行设计。框架的最小尺寸和立筋间距布局必须符合上述规范要求。

6.5.2 Gable Ends 山墙

In case of gable end trusses sitting on top plates of the external wall frame, the frame size must be in accordance with truss design and specification supplied by the frame and truss manufacturer/supplier supported by independent design producer statement.

如果位于山墙一侧的桁架处于外墙框架的上托板上，那么框架尺寸必须符合由框架和桁架制造商/供应商提供的桁架设计和规格，并且桁架制造商/生产商有独立设计建筑商声明文件支持。

6.5.3 Tolerances 误差

In order to achieve an acceptable wall finish, it is imperative that framing is straight and true. Framing tolerances must comply with the requirements of NZS 3604 and the manufacturer's specifications. All framing must be made flush. The visual aspects of the finished cladding can differ between two different sites or the builders installing the product. It is recommended that you also refer to a building guidance document published by MBIE to understand an acceptable level of tolerances allowed in building materials and workmanship. www.building.govt.nz Guide to tolerances, materials and workmanship in new residential construction 2015.

为了达到可接受的墙面效果，请务必保证框架平直。框架的误差必须符合NZS 3604和制造商规格的要求。所有的框架都必须齐平。成品外墙板的视觉效果可能因不同地点或安装产品的建筑工人而有所不同。建议参考MBIE发布的建筑指导文件，以了解建筑材料和工艺允许的误差范围。请访问www.building.govt.nz，查阅《2015年新住宅建筑中的误差、材料和工艺指南》。

6.5.4 T-Head Brad Nails T头细钉

A combination using stainless steel straight T-head brad nail and Bostik® 'Seal N Flex™-1' or Sika® 'Sikaflex®-11FC' adhesive sealant method of panel installation minimises the preparation required before painting the panels. T-head brad nails are fixed using a brad nail gun.

使用不锈钢直T头细钉固定，并使用Bostik® 'Seal N Flex™-1'或Sika® 'Sikaflex®-11FC'黏性密封胶的板材安装方法，能够简化喷涂板材之前需要做的准备工作。T头细钉可以使用钉枪进行固定。

Apply a 6mm thick continuous bead of Bostik® 'Seal N Flex™-1' or Sika® 'Sikaflex®-11FC' adhesive sealant to the face of the Hardie™ CLD™ Structural Cavity Batten first, then fix the panel with T-head brad nails, securing the panel in place while the adhesive cures. A good practice is to set the brad nail gun to fire nails 2-3mm proud of the panel surface, keeping a consistent pressure on the panel while fixing. Let the adhesive cure for approximately 1-2 hours, whilst continuing work on the next section. Come back later and hammer the nails flush with the panel surface. Use Paslode® C-25 304 stainless steel brad nails.

先在Hardie™ CLD™ 空腔结构板条表面涂抹一条连续的6mm粗的Bostik® 'Seal N Flex™-1'或Sika® 'Sikaflex®-11FC'黏性密封胶，然后使用T头细钉固定板材，在黏性密封胶成型的过程中确保板材不移位。较好的做法是把气钉枪设置成射钉突出板材表面2-3mm，在固定的过程中向板材平稳施加压力。黏性密封胶晾干要大约1-2小时，在

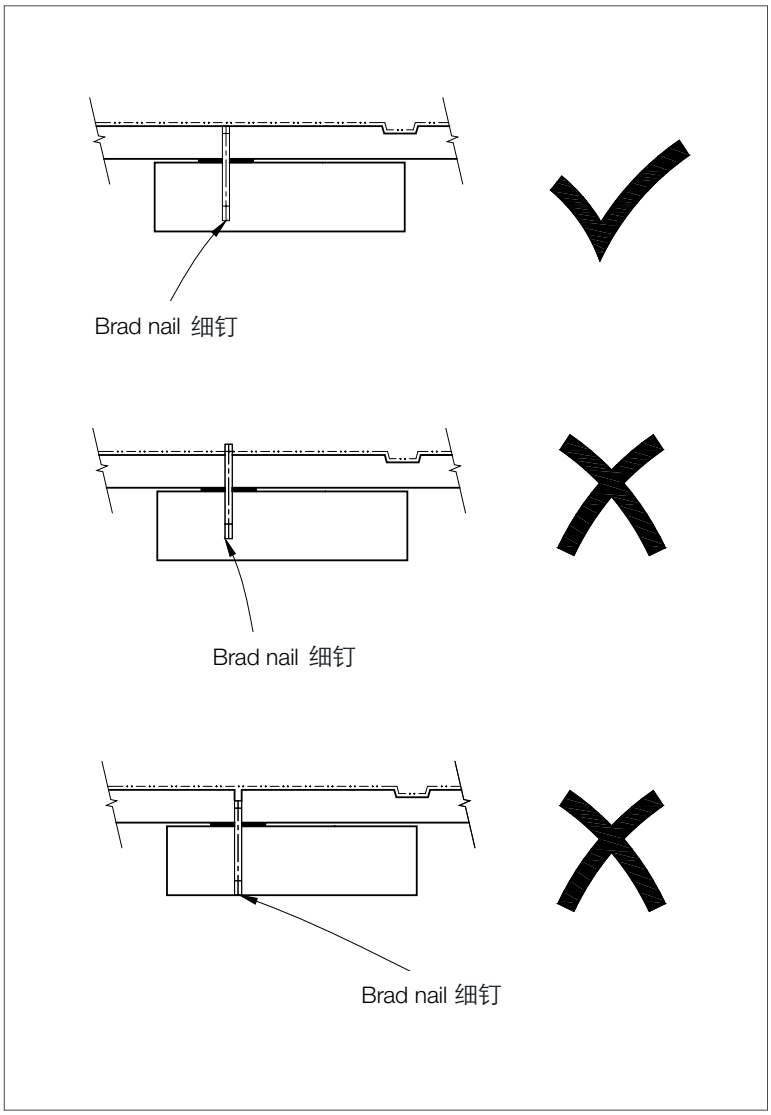
此期间可以接着做下面的部分，之后再回来把钉子锤到和板材表面齐平。使用Paslode® C-25 304不锈钢细钉。

The edge distance required for fixing T-head brad nails is 18mm from the underlap edge and 16mm from the overlap edge. Refer to Figure 6.

固定T头细钉的边缘距离要求是离下部搭接边缘18mm，离上部搭接边缘16mm。请参见图6。

Note: Do not use this fixing method in specific engineering design (SED) wind zones.

注：不要在特殊工程设计 (SED) 风区使用这一固定方法。



6.6 Flexible Underlay or HomeRAB™ Pre-Cladding
弹性垫层或HomeRAB™ 预置垫层

Flexible underlay or HomeRAB™ Pre-Cladding must be provided as per the requirements of the NZBC Acceptable Solution E2/AS1 'External Moisture' and NZS 3604. The flexible underlay must comply with Table 23 of E2/AS1 and AS/NZS 4200.1. The flexible underlay must be fixed in accordance with E2/AS1, NZS 3604 and AS/NZS 4200.2 and the underlay manufacturer's recommendations.

根据NZBC可接受方案E2/AS1“外部湿度”条款的要求，房屋必须铺设弹性垫层或HomeRAB™ 预置垫层。弹性垫层必须符合E2/AS1表23和AS/NZS 4200.1的要求。弹性垫层必须根据E2/AS1、NZS 3604和AS/NZS 4200.2的要求和垫层生产商的建议来固定安装。

Walls which are not lined on the inside face (e.g. garage walls or gable ends) must include a rigid sheathing or an air barrier behind the cladding which complies with the requirements of the NZBC Acceptable Solution E2/AS1 Table 23. For attached garages, flexible underlays must be selected in accordance with the NZBC Acceptable Solution E2/AS1, paragraph 9.1 3.4. HomeRAB™ Pre-Cladding is suitable for use in these applications. It must be installed in accordance with the HomeRAB™ Pre-Cladding/RAB™ Board installation manual.

对于无内衬的墙体（如车库墙或山墙），必须在外墙板的后方安装一层符合NZBC可接受方案E2/AS1表23要求的刚性隔板或密封板。对于与屋体连接的车库墙，必须依照NZBC可接受方案E2/AS1中第9.1.3.4条的要求选择弹性垫层。HomeRAB™ 预置垫层适用于以上情况。请务必按照《HomeRAB™ 预置垫层和RAB™ 板安装手册》的指导进行安装。

6.7 Intermediate Support
居中支撑

Where studs are at 600mm centres an intermediate means of restraining the flexible underlay and insulation from bulging into the cavity shall be installed. An acceptable method to achieve this is using a:

当立筋间距为600mm时，应该加入居中支撑，以防止弹性垫层和保温棉向空腔方向鼓胀。有效合格的处理方法有以下几种，请选择使用其一：

- 75mm galvanised mesh; or

  使用75mm的镀锌丝网；或者
- polypropylene tape at 300mm centres fixed horizontally and drawn taut.

  使用聚丙烯胶带，间距300mm，横向固定并拉紧。

No intermediate supports are required:

以下情况无需居中支撑：

- when studs are spaced at 400mm centres; or

  立筋间距为400mm；或者
- when a rigid air barrier instead of flexible underlays are used.

  使用刚性密封板代替弹性垫层。

6.8 RAB™ Board or a Rigid Air Barrier
RAB™ 板或刚性密封板

In EH wind zone or for specific design wind zone, a rigid air barrier eg RAB™ Board, must be used instead of flexible underlay. For building heights over 10m, RAB™ Board by James Hardie must be used.

在EH风区或特定设计风区，必须使用刚性密封板，如RAB™ 板，而非弹性垫层。对于高于10m的建筑而言，请务必使用James Hardie的RAB™ 板。

To achieve the temporary weathertightness using pre-cladding products from James Hardie, windows/doors must be

installed with required flashing tapes and seals etc. Refer to HomeRAB™ Pre-Cladding/RAB™ Board installation manual for information regarding its installation and requirements to achieve temporary weathertightness. For other rigid air barriers please refer to that manufacturers technical specification.

使用James Hardie的预置垫层产品实现临时的防风雨性，安装窗户/门时须要符合要求的防水胶带和密封剂等。请参见《HomeRAB™ 预置垫层和RAB™ 板安装手册》，了解安装和实现临时防风雨性能的相关要求。如使用其他刚性密封板，请参见相关厂商的技术规范。

6.9 Vent Strip 通风条

The Hardie™ uPVC cavity vent strip must be installed at the bottom of all walls constructed using the drained and ventilated cavity construction method. It is important that the openings in the vent strip are kept clear and unobstructed to allow free drainage and ventilation of cavities. Hardie™ uPVC vent strip has an opening area of 1000mm^2/m length.

所有墙体的底部必须安装Hardie™ uPVC空腔通风条，采用排水通风的空腔结构。请务必保持通风口开口处无遮挡、无堵塞，以便空腔顺利排水和通风。Hardie™ uPVC通风条的开口面积为1000mm^2/m。

6.10 Jointing 接缝

Axon™ Panels are fixed to form a shiplap joint at vertical edges. The panels have factory-made edges to suit this jointing.

Axon™ Panel板材通过固定纵向边缘可形成搭接缝。板材的边缘经过工厂处理，适用作此类接缝。

6.10.1 Vertical Joint 纵向接缝

Fix the Hardie™ CLD™ Structural Cavity Batten over the studs. Refer to Figures 2 and 3. The vertical shiplap joint is formed along the centre line of the batten. A bead of continuous sealant is applied to the vertical edge of the Axon™ Panel to seal the shiplap joint before fixing the panels. Refer to Figures 6 and 7. The edge distance for a brad nail must be 16mm and 18mm. Refer to Figures 6 and 7.

将Hardie™ CLD™ 空腔结构板条固定在立筋上。参见图2和图3。沿板条中心线形成纵向搭接缝。固定板材之前，在Axon™ Panel的纵向边缘涂抹一条连续的密封胶将搭接缝密封好。参见图6和图7。细钉与边缘的距离须为16mm和18mm。参见图6和图7。

6.10.2 Horizontal Joint 横向接缝

At floor joist levels a horizontal joint must be provided to accommodate the movement resulting from timber joist shrinkage and settlement. A Hardie™ 9mm panel aluminium horizontal ‘h’ mould or a Hardie™ 9mm panel aluminium horizontal angle ‘t’ flashing is used to form a horizontal joint. Use the aluminium ‘h’ mould /’t’ flashing jointer to cover over the butt joint of flashing. A purpose made metal ‘Z’ flashing could also be used to flash the horizontal joint. Refer to Figures 29 - 38.

在地板龙骨的高度，必须有横向接缝，以适应由木地板龙骨收缩和沉降引起的移位。可以使用Hardie™ 9mm铝制横向“h”型模具或Hardie™ 9mm铝制横向“t”型防水板形成横向接缝，并使用铝制“h”型模具/“t”型防水板接缝件覆盖防水板的对接缝，也可以使用专门制作的金属“Z”型防水板为横向接缝做防水处理。参见图29至图38。

6.10.3 Horizontal Drainage Joint 横向排水接缝

The wall cavities must be drained every two floors to facilitate moisture drainage and ventilation. Refer to Figure 45.

为促进排水和通风，墙体空腔每隔两层必须有排水接缝。参见图45。

6.10.4 External Corner 阳角

A Hardie™ 9mm panel aluminium radius/invert box corner mould is used to form the external corner. The site-cut sheet edges must be sealed before butting them into the box corner. Refer to Figures 10 and 11.

使用Hardie™ 9mm铝制圆角/反向箱角模具形成阳角。在与箱角对接之前，现场切割的板材边缘须进行密封。参见图10和图11。

On a two storey construction the aluminium box corner is finished under the aluminium flashing. A Hardie™ 9mm

aluminium ‘h’ mould external corner must be used over the corner when in this situation. Refer to Figure 32.

在双层建筑中，铝制箱角应在铝制防水板下方结束。这种情况下，必须在墙角使用Hardie™ 9mm铝制“h”型阳角。参见图32。

The bead of adhesive must be 10mm thick to accommodate for the thickness of the aluminium.

为适应铝材的厚度，须涂抹一条10mm粗的黏性密封胶。

Alternatively, on a two storey construction the aluminium corner is finished under the aluminium ‘t’ flashing. A Hardie™ 9mm aluminium ‘t’ external corner must be used over the corner when in this situation. Refer to Figure 37.

或者，在双层建筑中，铝制墙角应在铝制‘t’型防水板下方结束。这种情况下，必须在墙角使用Hardie™ 9mm铝制“t”型阳角。参见图37。

Alternatively, the corner can extend up corner and have horizontal flashings butting into corner mould.

或者，墙角可以延伸到角落，并在角模具中对接横向防水板。

6.10.5 Internal Corner 阴角

For Hardie™ CLD™ Structural Cavity Batten internal corner joint the Hardie™ 9mm aluminium internal corner must go to bottom of the panel. Refer to Figure 9.

对于Hardie™ CLD™ 空腔结构板条阴角接缝而言，Hardie™ CLD™ 空腔结构板条必须接在板材底。参见图9。

6.10.6 Flashing Material Durability 防水材料耐久性

Please refer to Table 20 of E2/AS1 of the NZBC regarding the durability requirements of various flashing materials.

请参见NZBC的E2/AS1表20，了解有关各类防水材料的耐久性要求。

6.11 Junctions and Penetrations 交汇与穿透

Refer to Clause 2.5 of this specification for moisture management requirements. All windows and doors must be detailed as per the requirements of this specification. James Hardie has developed the window details for Axon™ Panel which meet the requirements of E2 ‘External Moisture’, an approved document of the NZBC. Refer to Figures 22 to 28.

参见本技术规范第2.5条有关湿度管理的要求。所有门窗必须根据本规范的要求来设计详图。James Hardie 提供的Axon™ Panel 的窗户安装详图符合NZBC核准文件中E2“外部湿度”条款的要求。请参见图22至28。

6.12 Board and Batten Look 板与板条外观

In order to achieve a board and batten look, Hardie™ Axent™ Trim can be fixed vertically over the panel surface.

为了达到板与板条的外观效果，可以将Hardie™ Axent™ 饰板垂直固定在板材表面。

The trims can be placed to suit the project’s aesthetic requirements. However, we recommend the trim spacing @ 200mm centres minimum maintained between the trims. For any closer spacing of trims, Ask James Hardie™ on 0800 808 868 for assistance.

饰板可以根据项目的审美要求进行布置。但是，我们建议饰板之间的间距至少为200mm。如需更小的间距，请致电0800 808 868垂询Ask James Hardie™。

Refer to Figures 12 - 17 for information.

请参见图12至17获取相关信息。

7 Finishing 表面处理

7.1 Preparation 准备工作

Painting of Axon™ Panel is mandatory to meet the durability requirements of the NZBC and 15 year James Hardie product warranties. Axon™ Panel must be dry and free of any dust or grime before painting. The panels must be painted within 90 days of their installation. There is no restriction on the LRV of paint to be applied on the Axon™ Panel.

Axon™ Panel必须刷漆，以满足NZBC的耐久性要求和James Hardie的15年质保条件。在刷漆之前，Axon™ Panel必须保持干燥，且没有任何灰尘或污垢。刷漆必须在安装后的90天内完成。Axon™ Panel对于所刷漆料的LRV值没有限制。

All exposed faces, including the top edges under the sills and bottom edges of Axon™ Panel, Hardie™ Axent™ Trim and accessories must be finished with an exterior paint system. Dark paints can be used when using the aluminium flashings.

所有外露的表面，包括窗台下方的顶边和Axon™ Panel、Hardie™ Axent™ 饰板及配件的底边，必须使用外墙涂料系统进行处理。使用铝制防水板时，可以使用深色漆料。

Panels are pre-primed and are suitable for site applied acrylic paints. Axon™ Panel Grooved and Smooth is an unsanded fibre cement sheet.

板材已经预涂底漆，适合现场涂刷亚克力漆。Axon™ Panel凹槽型与光滑型均为未打磨的水泥板。

In order to seal cut edges or sanded patches, Dulux® 1 Step, Resene® quick dry, Taubmans® Underproof Acrylic Primer Undercoat or a similar product should be applied. The primer should be compatible with the paint to be used.

为了密封板材的切割面和砂纸抛光面，应使用Dulux® 1 Step, Resene® quick dry, Taubmans® Underproof Acrylic Primer Undercoat 或其它类似产品。底漆应与所刷漆料相兼容。

Where panels are fixed with brad nails, the nail heads must be finished flush with panel surface. The nail gun should be set to nail “proud” of the panel surface and nail heads to be manually finished flush with surface. Any nail heads that get slightly below the surface (1 mm max) can be skimmed over with an exterior grade 2 part builders fill, if required. The skimmed area must be primed prior to site-applied finishing.

如采用细钉固定板材，钉头必须与板材表面齐平。钉枪应设定为入钉后“突出”板材表面，然后再手动将钉头敲平。如有需要，任何略低于表面（最多1mm）的钉头都可以使用外墙级双组建筑填料进行填补。填补区域在现场涂饰之前必须先涂上底漆。

When filling over a nail head in Axon™ Panel Brushed Concrete, the following process can be followed.

在Axon™ Panel拉丝混凝土纹理面板上填补钉头时，可以按照以下步骤进行操作。

1. Wearing appropriate gloves, place filling compound on finger and wipe over nail hole.

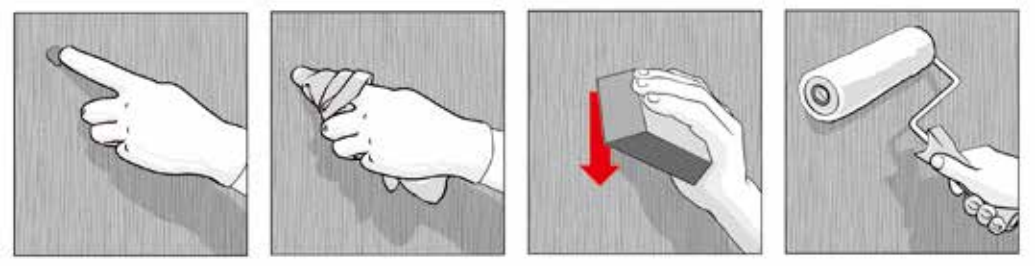
   戴上合适的手套，将填充剂放在手指上，然后覆盖在钉孔上。

2. If there is excess of filling compound around the nail head, gently wipe away with a moist sponge or cloth before the compound sets.

   如果钉头周围有多余的填充剂，在填充剂凝固前，用湿海绵或布轻轻擦去。

3. Only when patching Axon™ Panel Brushed Concrete, any compound excess can be removed using a 120 grit angled sanding sponge in a vertical motion. When required, a folded piece of 120 grit sanding paper can be used for finer detailing in the valley areas of the panel.

   仅在修补Axon™ Panel拉丝混凝土纹理时，可使用120号砂纸斜磨海绵垂直打磨去除多余的填充剂。如有需要，可使用折叠的120号砂纸在板材的凹槽区域进行更精细的打磨。



For site applied paint finishes, James Hardie recommends an undercoat and a minimum of two coats of acrylic paint. Follow the paint manufacturer's recommendations to prepare the surface.

对于现场涂装，James Hardie建议使用一层底漆和至少两层亚克力漆。请遵循油漆制造商的建议进行表面处理。

For best aesthetic results, a low sheen paint is recommended.

为了墙面的美观，推荐使用低光泽度的油漆。

7.2 Coating 刷漆

7.2.1 Paint 粉刷

Axon™ Panel are supplied pre-primed.

Axon™ Panel已经预涂底漆。

Panels must be painted within 90 days of installation. Use only quality exterior paints complying with AS 3730.

板材必须在安装后的90天内刷漆。请仅使用符合AS 3730标准的高质量外墙漆。

Manufacturer's specification for the selected paint must be followed.

必须遵照所选漆料的制造商提供的规范。

7.2.2 Staining - Only for Axon™ Panel 133mm Grooved with grained finish

染料 – 仅供带有木纹表面的Axon™ Panel 133mm 凹槽型

Stains containing linseed oil are specifically designed for wood and may not be suitable for fibre cement cladding products, primed or unprimed. Semi-transparent stains can vary in uniformity of appearance depending on method of application and conditions, requiring a high level of skill and craftsmanship to achieve a uniform appearance. Clear coats have not proven durable in exterior exposure and James Hardie considers them a maintenance item that may require application of a refurbishing sealer at regular intervals. James Hardie does not warrant the appearance and durability of the use of semi-transparent stains and clear coats.

含亚麻籽油的染料专为木材设计，可能不适用于纤维水泥外墙产品，无论是否预先经过底漆处理。半透明染料的均匀程度可能因施工方法和环境条件而有所不同，想要外观看上去均匀需要纯熟的技巧和工艺。透明涂层在户外环境下的耐久性未经证实，James Hardie认为其需要定期维护，可能需要定期使用翻新密封剂。James Hardie不保证使用半透明染料和透明涂层的美观性和耐久性。

For further information contact the stain manufacturers. Refer to Section 12 for stain manufacturer details.

需更多信息，请联系染料制造商。有关染料制造商的详细信息，请参见第12章。

7.2.3 Roll on Texture - Only for Axon™ Panel Smooth

滚涂纹理漆 —仅供Axon™ Panel 光滑型

Axon™ Panel Smooth can be finished with rolled on texture acrylic texture coatings. Panels are supplied pre-primed and are ready for acrylic textures to be applied directly to it. Acrylic texture products are available in a range of textures that vary from fine finish to rough texture for a fast application on site. Refer to Dulux® or other similar texture coating

suppliers for further information.

Axon™ Panel光滑型可以滚涂亚克力纹理漆。板材已预涂底漆，可以直接上亚克力纹理涂料。亚克力纹理产品有多种不同选择，从细腻的表面到粗糙的纹理，适用于快速现场涂装。更多信息请参考Dulux® 或其他类似的纹理涂料供应商。

7.2.4 Jointing and Texture Coating - Only for Axon™ Panel Smooth
接缝与纹理涂层 —仅供Axon™ Panel 光滑型

A full mesh jointing and texture coating systems must comply with EM4 requirements of the NZBC Acceptable Solutions 'E2/AS1'. The Light Reflectance Value (LRV) for coatings to be used with Axon™ Panel Smooth cladding must be minimum 40% or higher. Proprietary flashing systems supplied by the texture coating supplier/applicator are acceptable when installed as per their technical specifications.

完整的网格接缝和纹理涂层系统必须符合NZBC可接受方案“E2/AS1”中的EM4要求。用于Axon™ Panel光滑型外墙的涂层光反射值（LRV）必须至少为40%或更高。按照纹理涂层供应商/应用商的技术规范安装的专有防水系统也是认可的。

7.2.5 Axon™ Panel Brushed Concrete Finishing Requirements
Axon™ Panel 拉丝混凝土纹理面板的表面处理要求

Exterior acrylic flat paint. A nap roller of 12mm or greater is recommended for optimal finish. For best results, use low-sheen or matt finish exterior paints in natural colours.

平光亚克力外墙漆。建议使用12mm或更大的滚轮毛刷以优化表面处理。为了达到最佳效果，建议使用自然色的低光泽度或哑光外墙漆。

7.3 Flexible Sealant 弹性密封胶

All sealants used must comply with the relevant requirements of the NZBC. Their application and usage must be in accordance with manufacturer's instructions. Check with sealant manufacturer prior to coating over sealants. Some sealant manufacturers do not recommend coating over their products.

所用的密封胶都必须满足NZBC的相关要求。用法和用量必须符合制造商的说明。在密封胶表层上刷漆之前，请先与密封胶制造商确认。有些密封胶的制造商并不建议在其产品上刷漆。

8 Care and Maintenance
保养与养护

The extent and nature of maintenance will depend on the geographical location and exposure of the building. As a guide, it is recommended that basic normal maintenance tasks shall include but not be limited to:

房屋外墙所需的维护方法和程度跟其所在的地理位置和暴露在什么样的环境有关系。作为指南，我们仅建议一些基本的维护措施，包括但不仅限于：

- Washing down exterior surfaces every 6-12 months using low pressure water and a brush, and every 3-4 months in extreme coastal conditions or sea spray zones. Refer to your paint manufacturer for wash down requirements and do not use a water blaster to wash down the cladding.

  每6-12个月使用低压水和刷子清洗外墙表面，在极端沿海条件或海雾区每3-4个月清洗一次。不要使用高压水枪清洗外墙。请参见涂料制造商的清洗要求。
- Re-applying of exterior protective finishes if necessary. Always refer to your paint manufacturer for re-coating requirements.

  如有必要，重新粉刷保护涂层。始终参见涂料制造商有关重新粉刷的要求。
- Maintaining the exterior envelope and connections including joints, penetrations, flashings and sealants that may provide a means of moisture entry beyond the exterior cladding.

  维护外部围护结构和连接处，包括接缝、穿透处、防水板和密封胶，以防止水分进入外墙后方。
- Cleaning out gutters, blocked pipes and overflows as required.

  根据需要清理排水沟、下水管和溢流排水管。
- Pruning back vegetation that is close to or touching the building

  经常修剪靠近建筑物或有接触的植物
- The clearance between the bottom edge of Axon™ Panel and the finished ground must always be maintained.

  确保Axon™ Panel的底边与已铺地面始终保持适当的间隙。

9 Details Section Index
工程详图索引

The following generic details have been provided in this document for both direct fixed and cavity construction methods.
本文档中的通用详图是为空腔结构提供的。

Table 7 表7

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Figure 1: Framing setout | 图1：框架布局

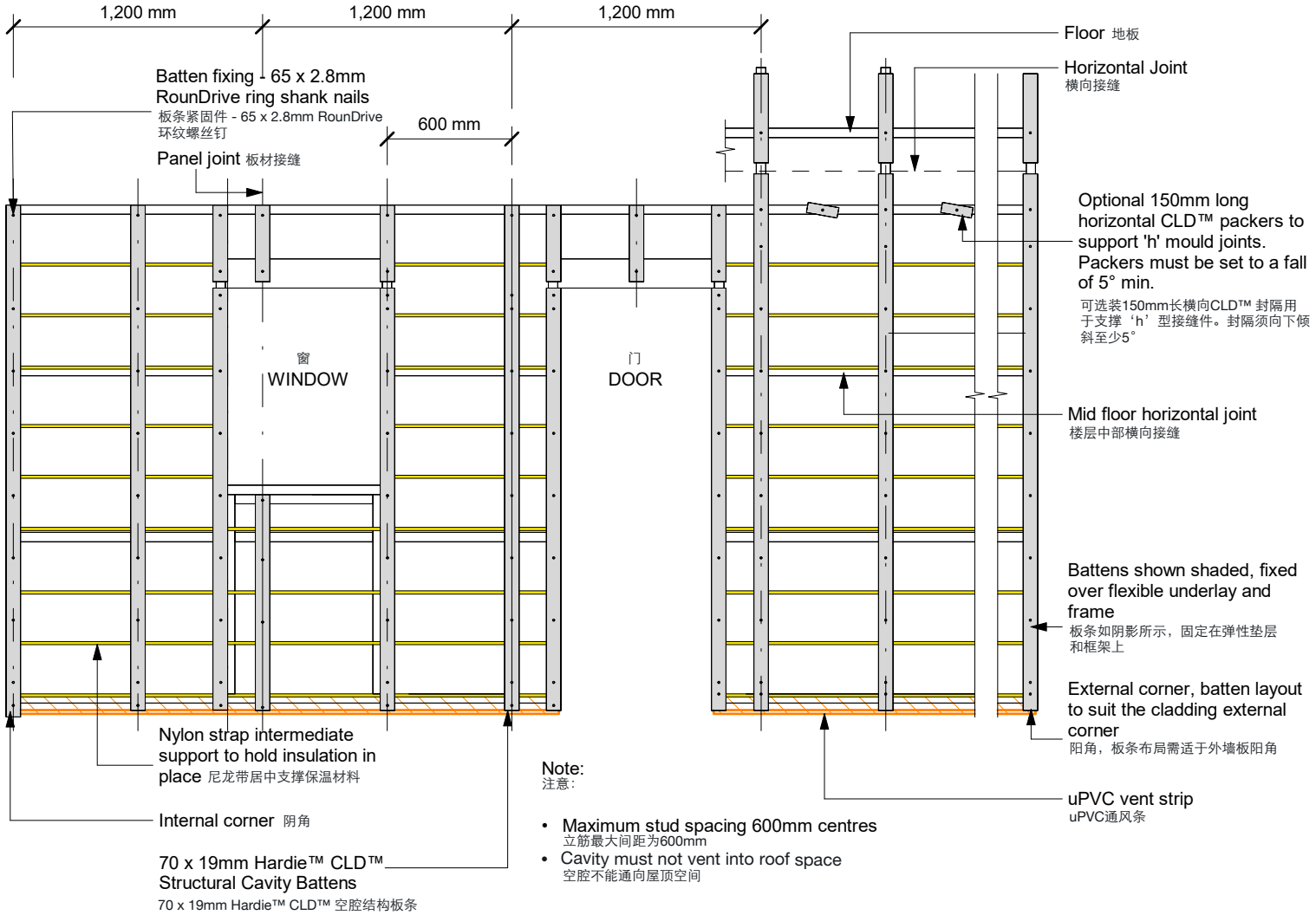
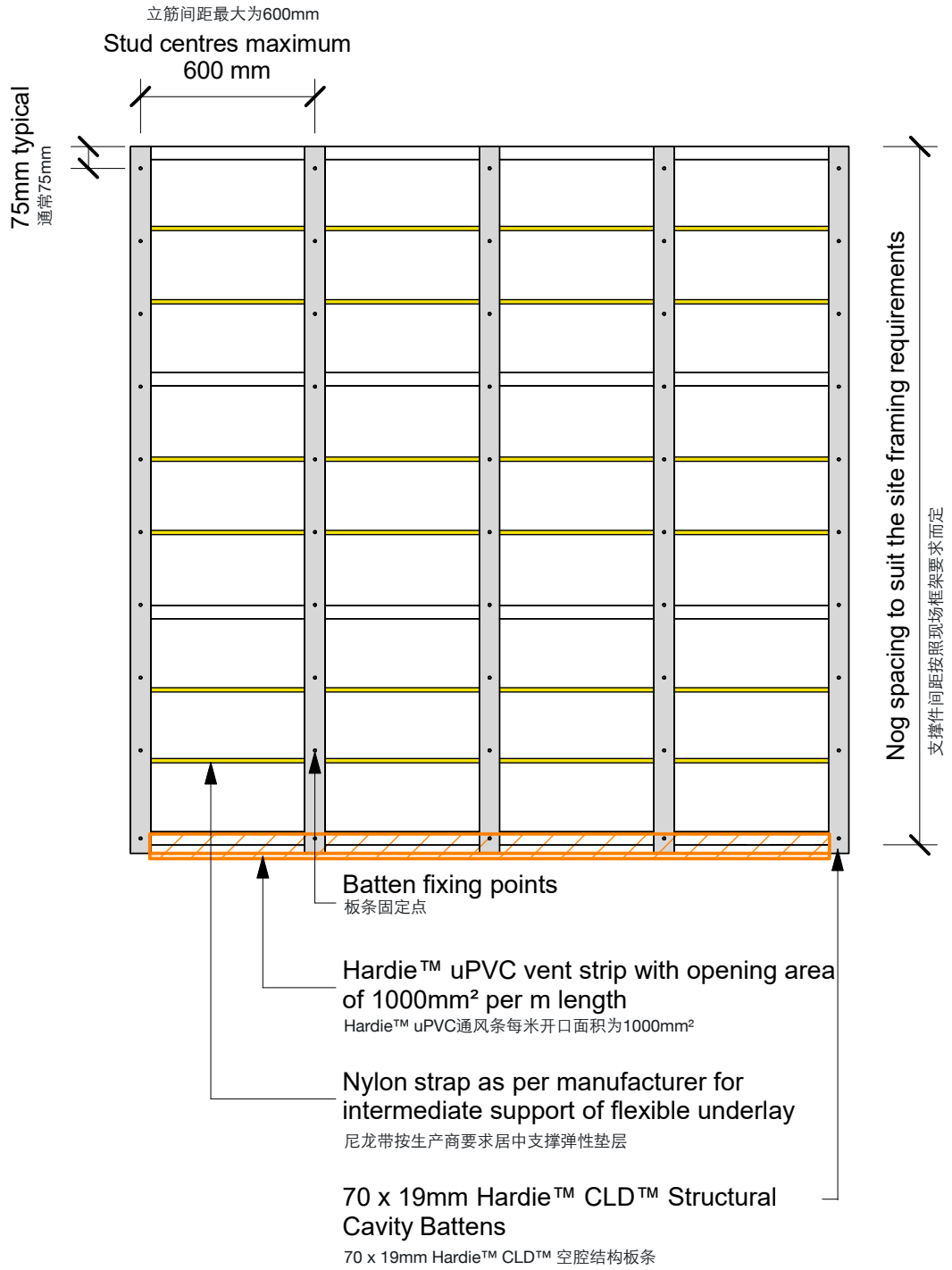


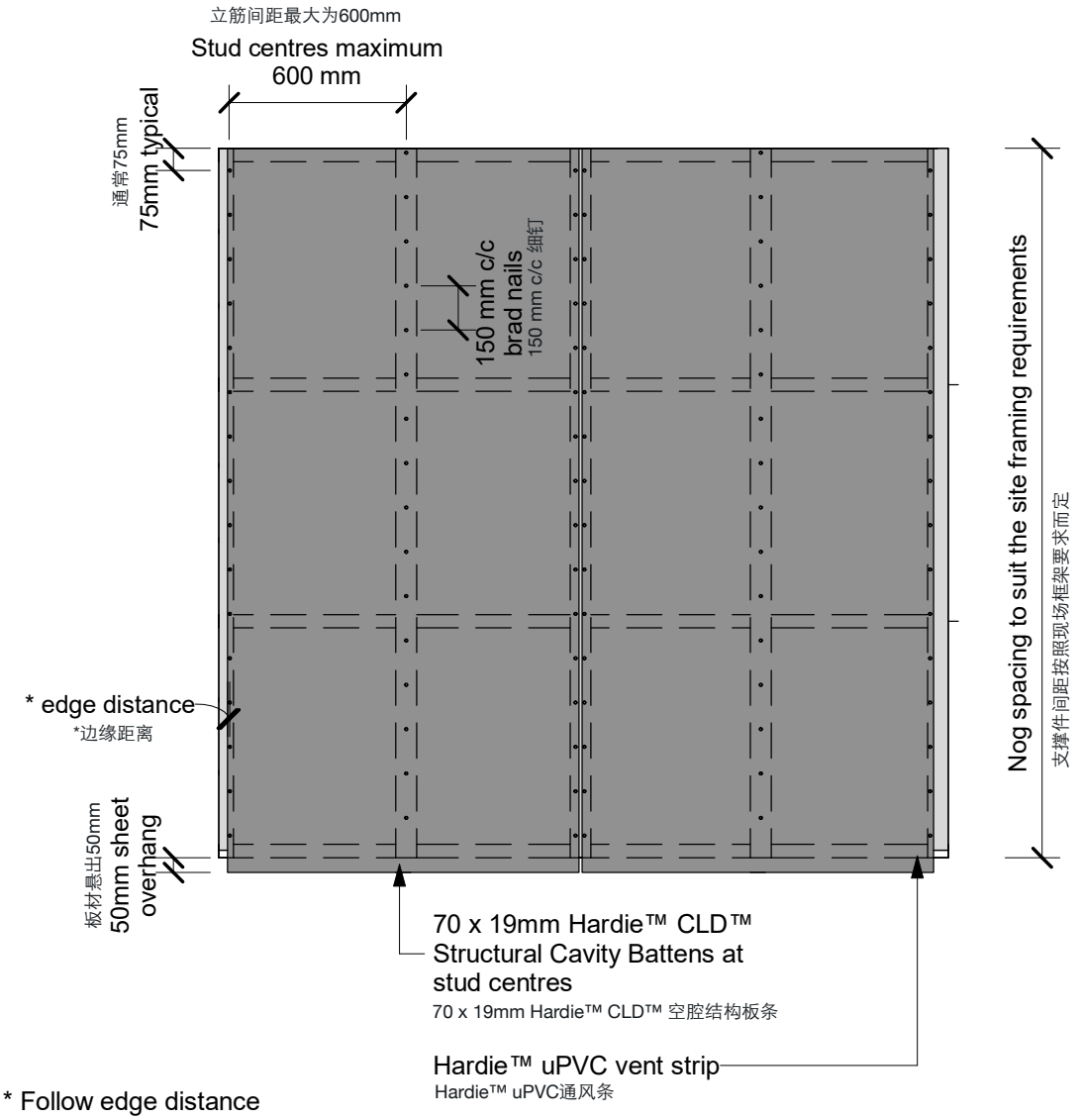
Figure 2: Batten fixing setout | 图2：板条固定布局



Note
注意

- For fire rated wall systems by James Hardie RAB Board must be used and nog spacing must be 800mm centres maximum
  必须使用James Hardie的RAB板建造防火墙系统，并且务必保证支撑件的最大间距小于800mm

Figure 3: Sheet fixing setout | 图3：板材固定布局



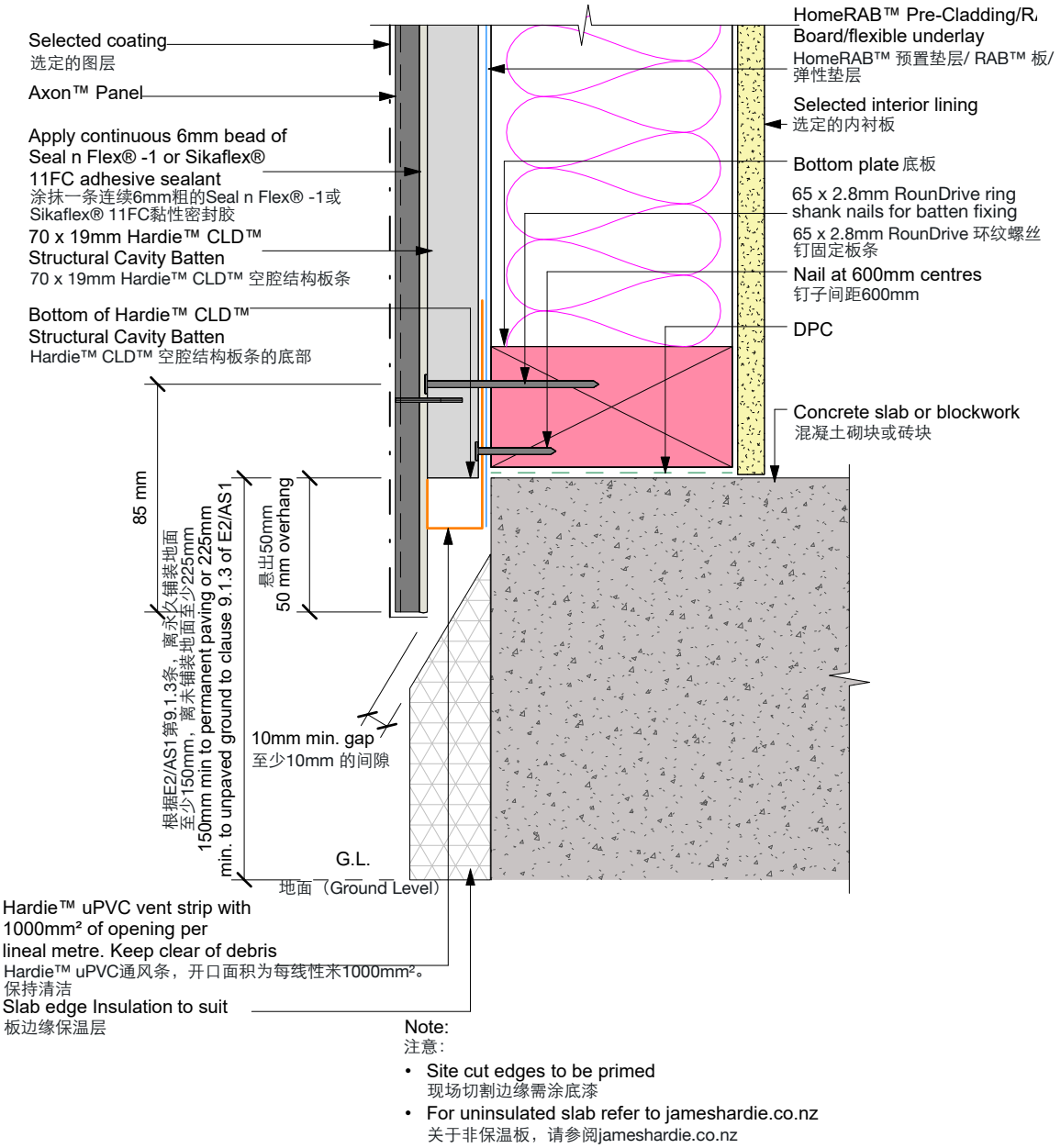
* Follow edge distance
as per figure 6 and 7
*遵照图6和7的边缘距离

Note:
注意：

- When studs spaced at 400mm centres using Axon™ Panel Grooved 400, the nail fixings to intermediate studs to be offset 5mm from the groove in Panel.
  使用Axon™ Panel 400且立筋间距为400mm时，将板材固定在居中立筋上的入钉应避开板材上的凹槽5mm。

- For fire rated wall systems by James Hardie RAB Board must be used and nog spacing must be 800mm centres maximum
  必须使用James Hardie的RAB板建造防火墙系统，并且务必保证支撑件的最大间距小于800mm

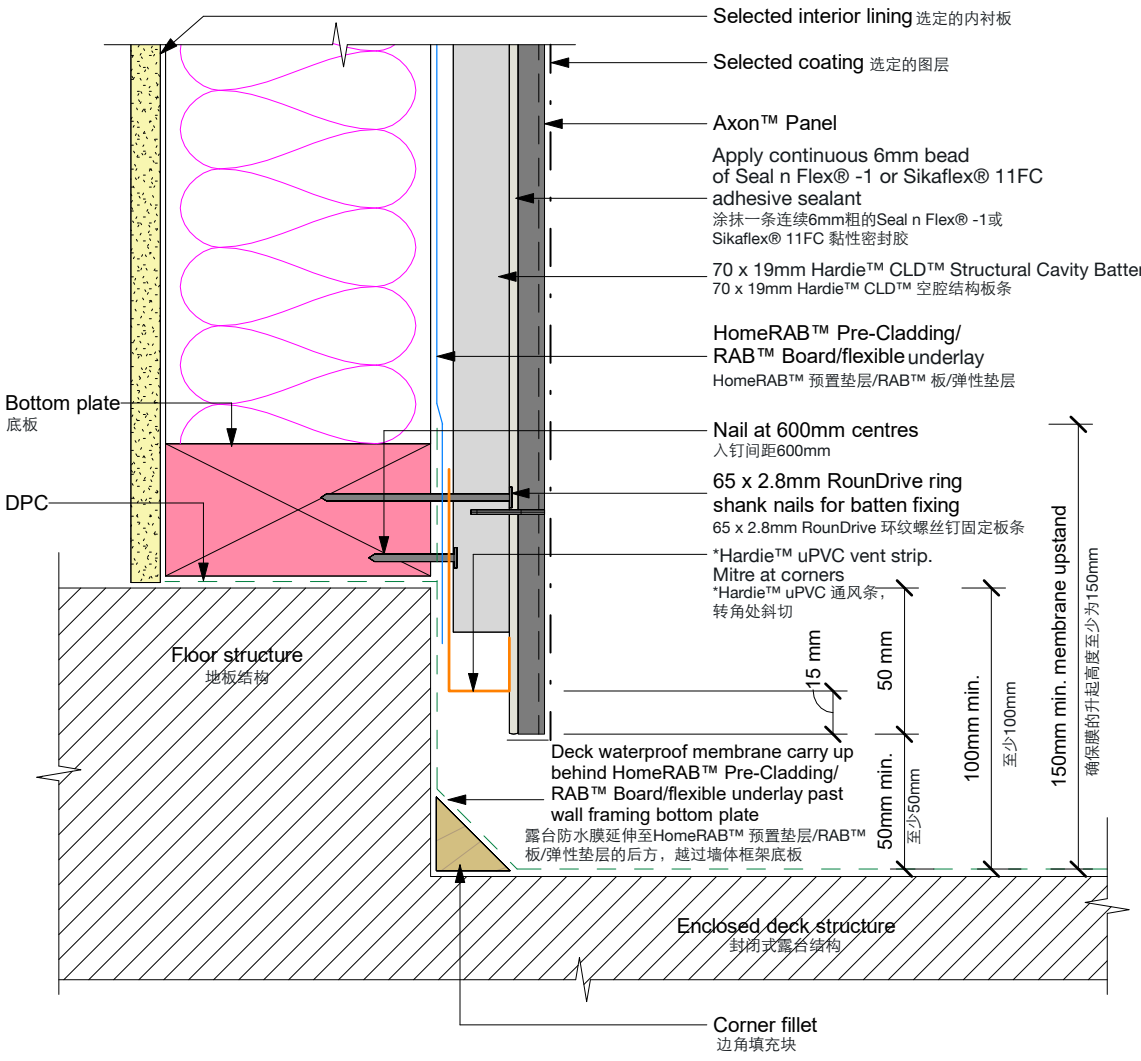
Figure 4: Insulated Foundation detail | 图4：保温地基详图



Note:
注意：

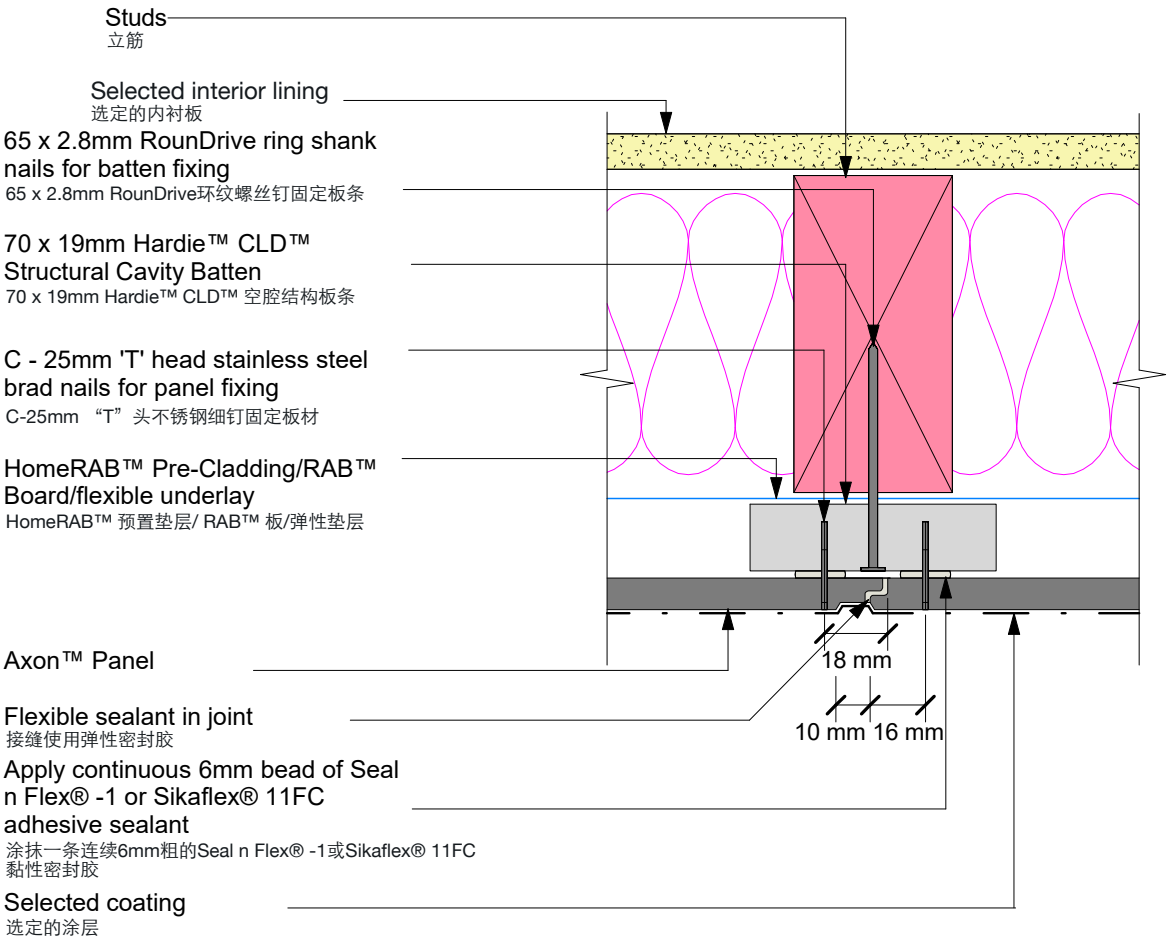
- Site cut edges to be primed
  现场切割边缘需涂底漆
- For uninsulated slab refer to jameshardie.co.nz
  关于非保温板，请参阅jameshardie.co.nz

Figure 5: Enclosed deck | 图5：封闭式露台



*Drain holes in Hardie™ uPVC vent strip to achieve the required ventilation openings of 1000mm² per lineal metre
*Hardie™ uPVC通风条的排水孔，用于达到通风开口面积每线性米1000mm²的要求

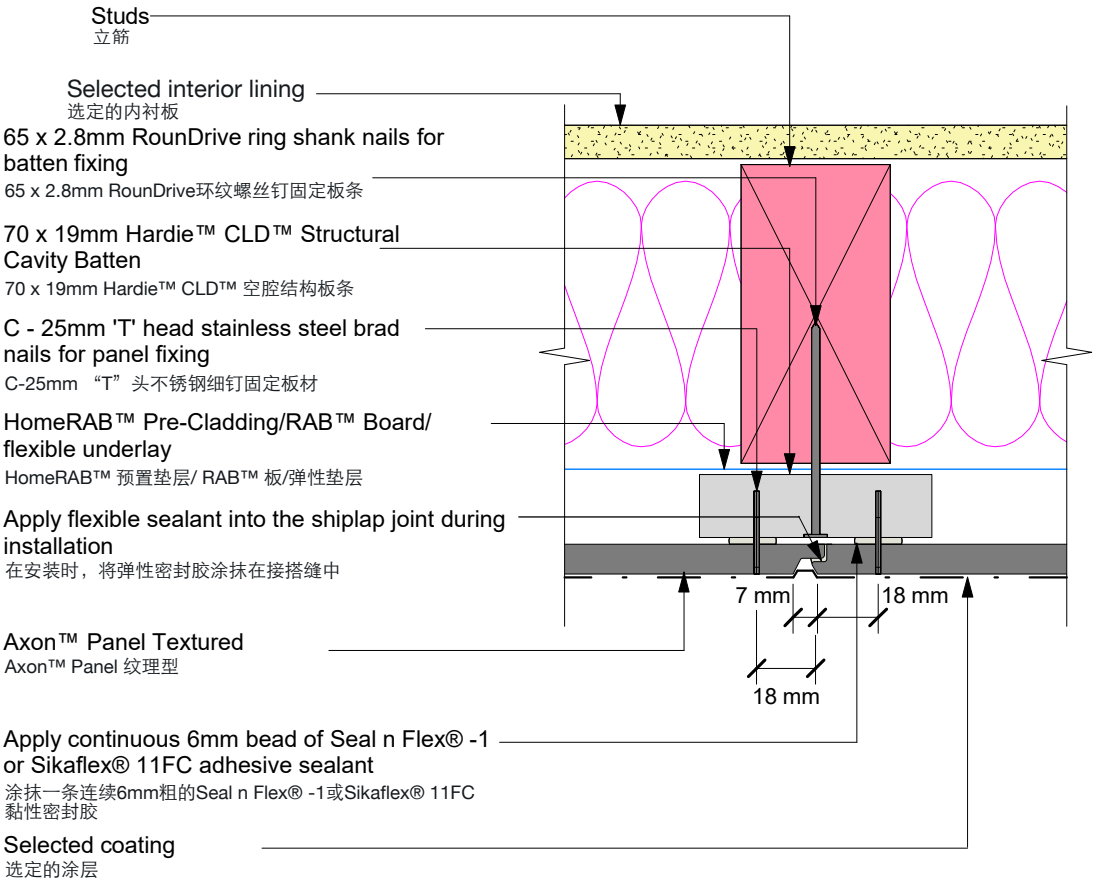
Figure 6: Axon™ Panel grooved shiplap joint | 图6：凹槽型Axon™ Panel搭接缝



Note:
注意：

* Ensure that a continuous 6mm bead of adhesive sealant is applied between Hardie™ CLD™ Structural Cavity Batten and Axon™ Panel.
  确保在Hardie™ CLD™ 空腔结构板条和Axon™ Panel 之间涂抹一条连续6mm粗的黏性密封胶。
* Ensure that the required edge distance is maintained when fixing.
  确保固定时留出符合要求的边缘距离。
* Seal cut edges with a primer compatible with final coatings.
  现场切割边缘须使用与最终涂层相兼容的底漆。

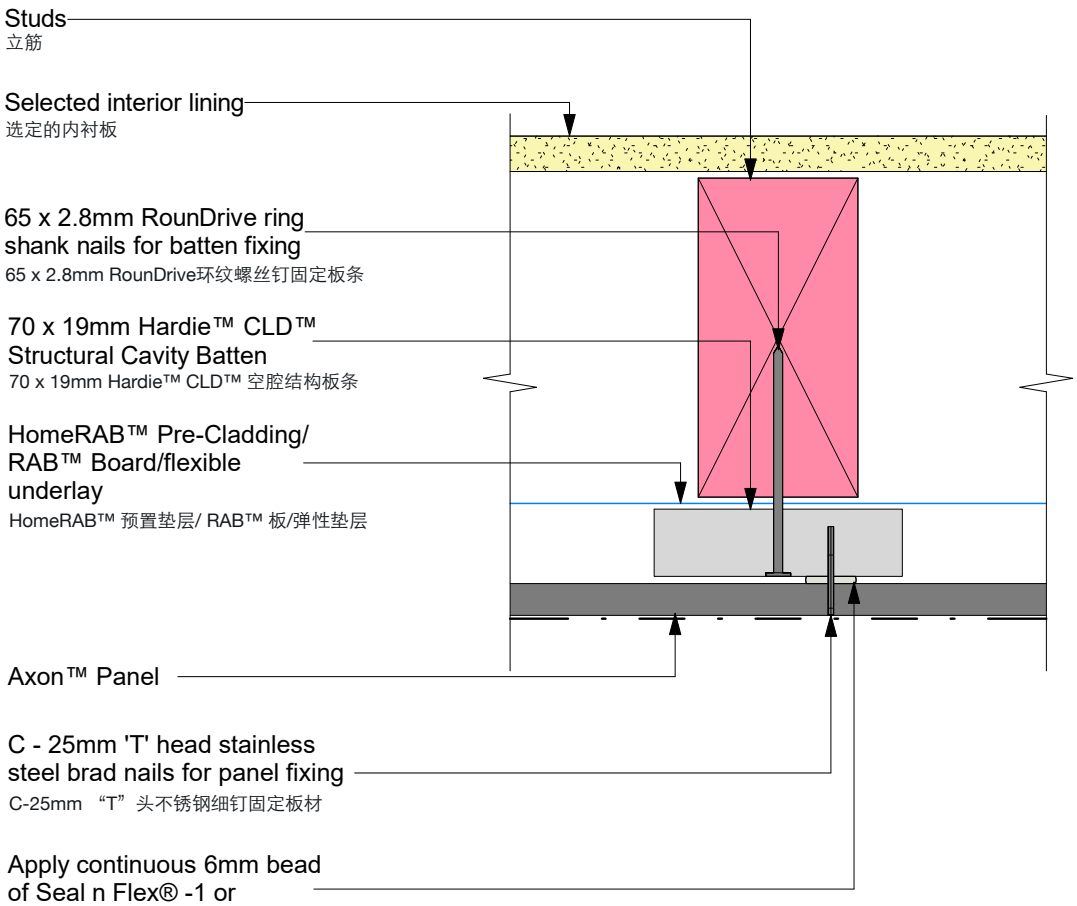
Figure 7: Axon™ Panel textured shiplap joint | 图7：纹理型Axon™ Panel搭接缝



Note:
注意：

* Ensure that a continuous 6mm bead of adhesive sealant is applied between Hardie™ CLD™ Structural Cavity Batten and Axon™ Panel.
确保在Hardie™ CLD™ 空腔结构板条和Axon™ Panel 之间涂抹一条连续6mm粗的黏性密封胶。
* Ensure that the required edge distance is maintained when fixing.
确保固定时留出符合要求的边缘距离。
* Seal cut edges with a primer compatible with final coatings.
现场切割边缘须使用与最终涂层相兼容的底漆。

Figure 8: Intermediate stud fixing | 图8: 居中立筋的固定



Note:
注意:

* Fix panel from the middle of the panel outwards.
从板材的中央向外固定。

Figure 9: Hardie™ 9mm Aluminium internal corner | 图9：Hardie™ 9mm 铝制阴角

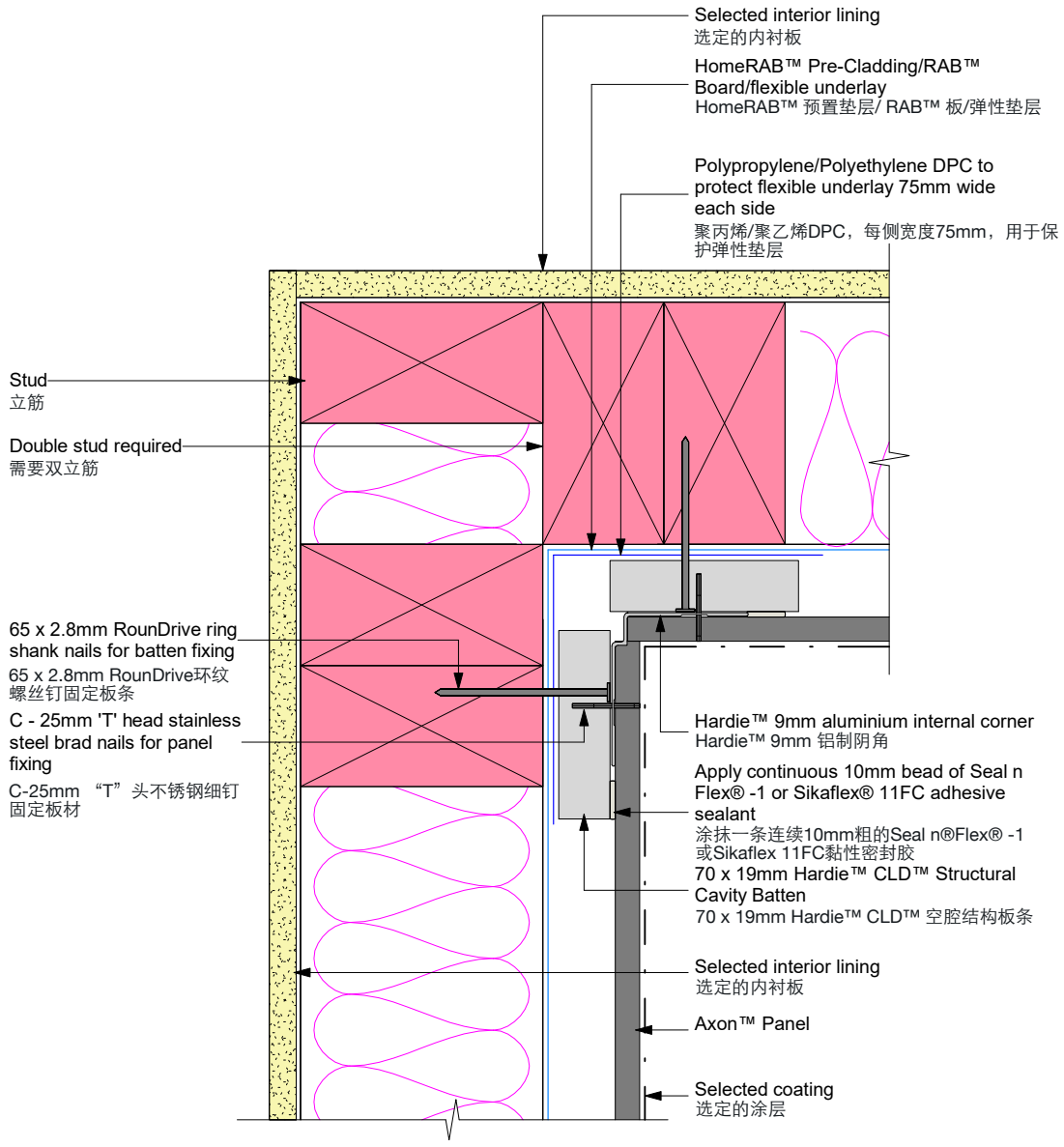


Figure 10: External Corner - Radius | 图10：阳角 - 圆角

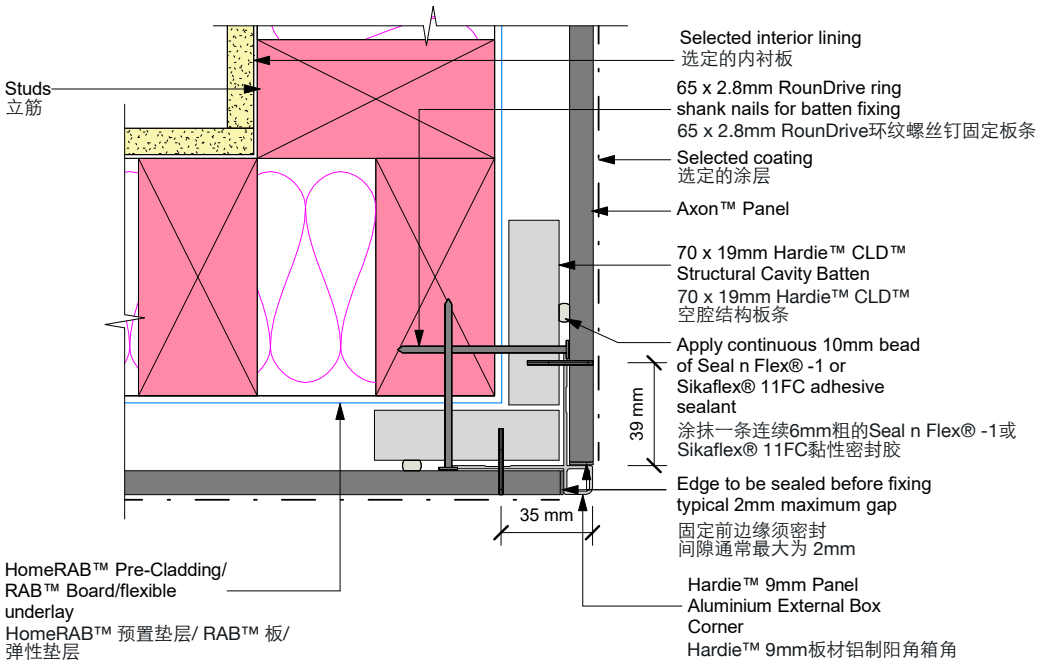


Figure 11: External Corner - Invert | 图11：阳角 - 反向

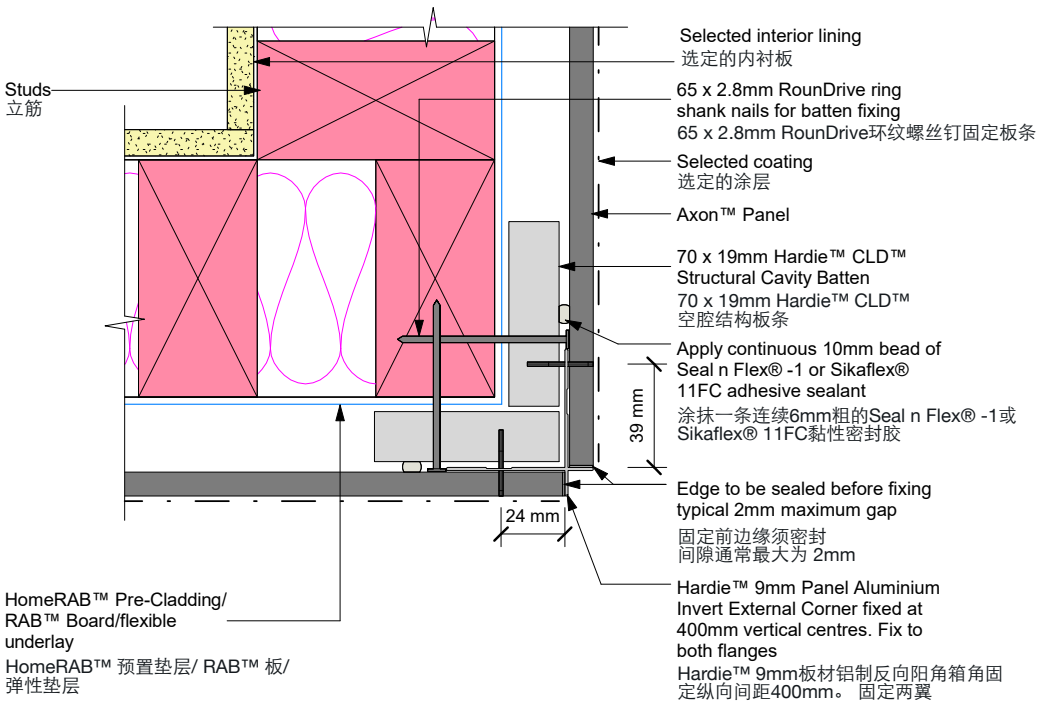
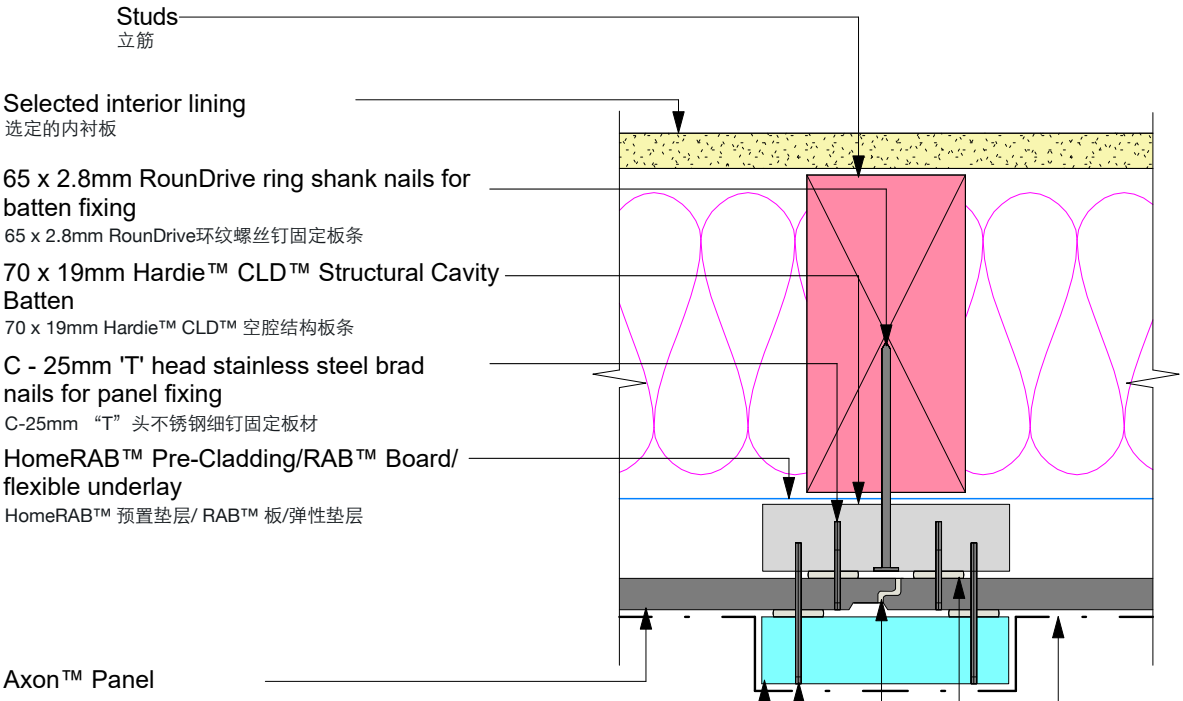


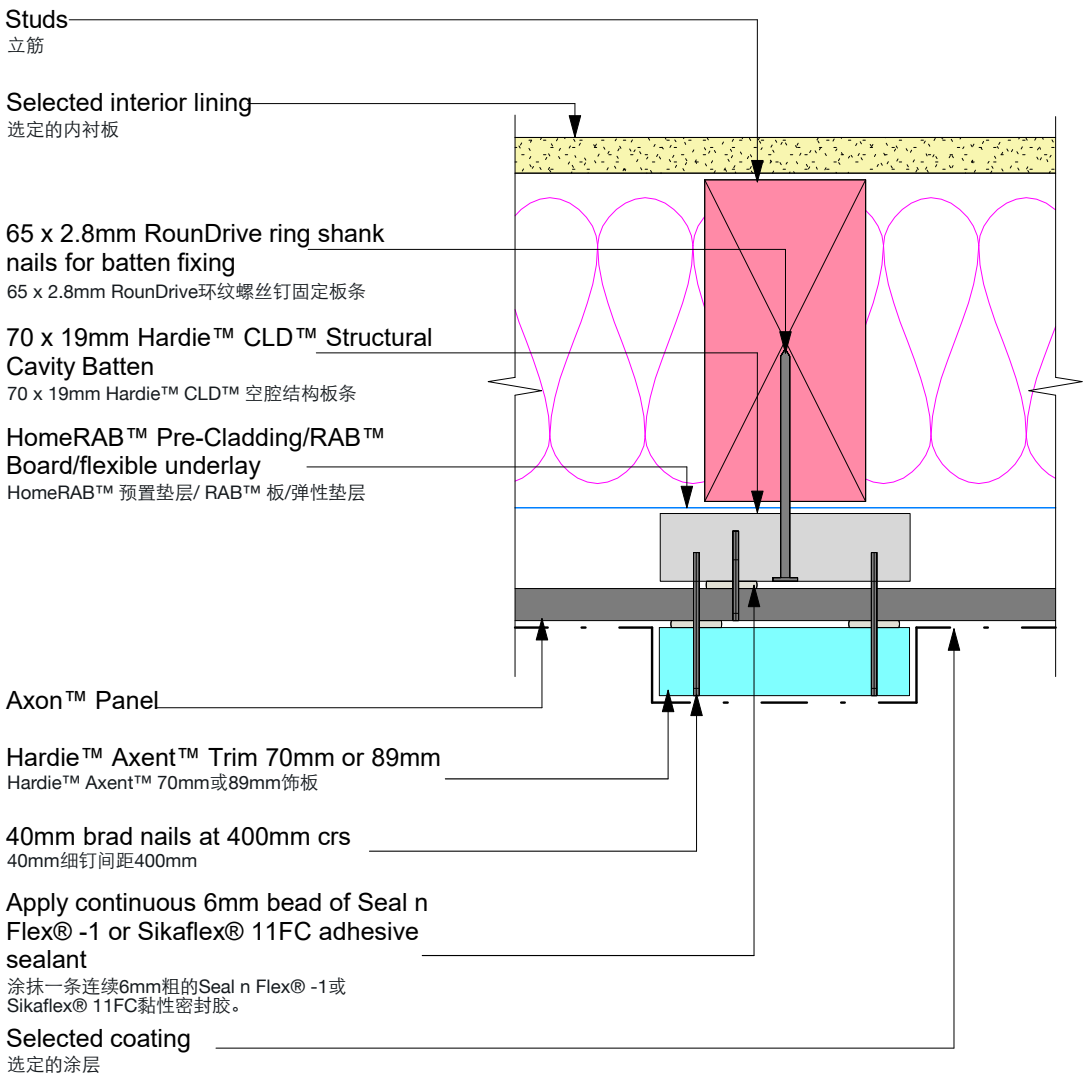
Figure 12: Hardie™ Axent™ Trim at joint | 图12: 接缝处 Hardie™ Axent™ 饰板的安装



Note:
注意：

* Ensure that a continuous 6mm bead of adhesive sealant is applied between Hardie™ CLD™ Structural Cavity Batten and Axon™ Panel.
  确保在Hardie™ CLD™ 空腔结构板条和Axon™ Panel 之间涂抹一条连续6mm粗的黏性密封胶。
* Ensure that the required edge distance is maintained when fixing.
  确保固定时留出符合要求的边缘距离。
* Seal cut edges with a primer compatible with final coatings.
  现场切割边缘须使用与最终涂层相兼容的底漆。

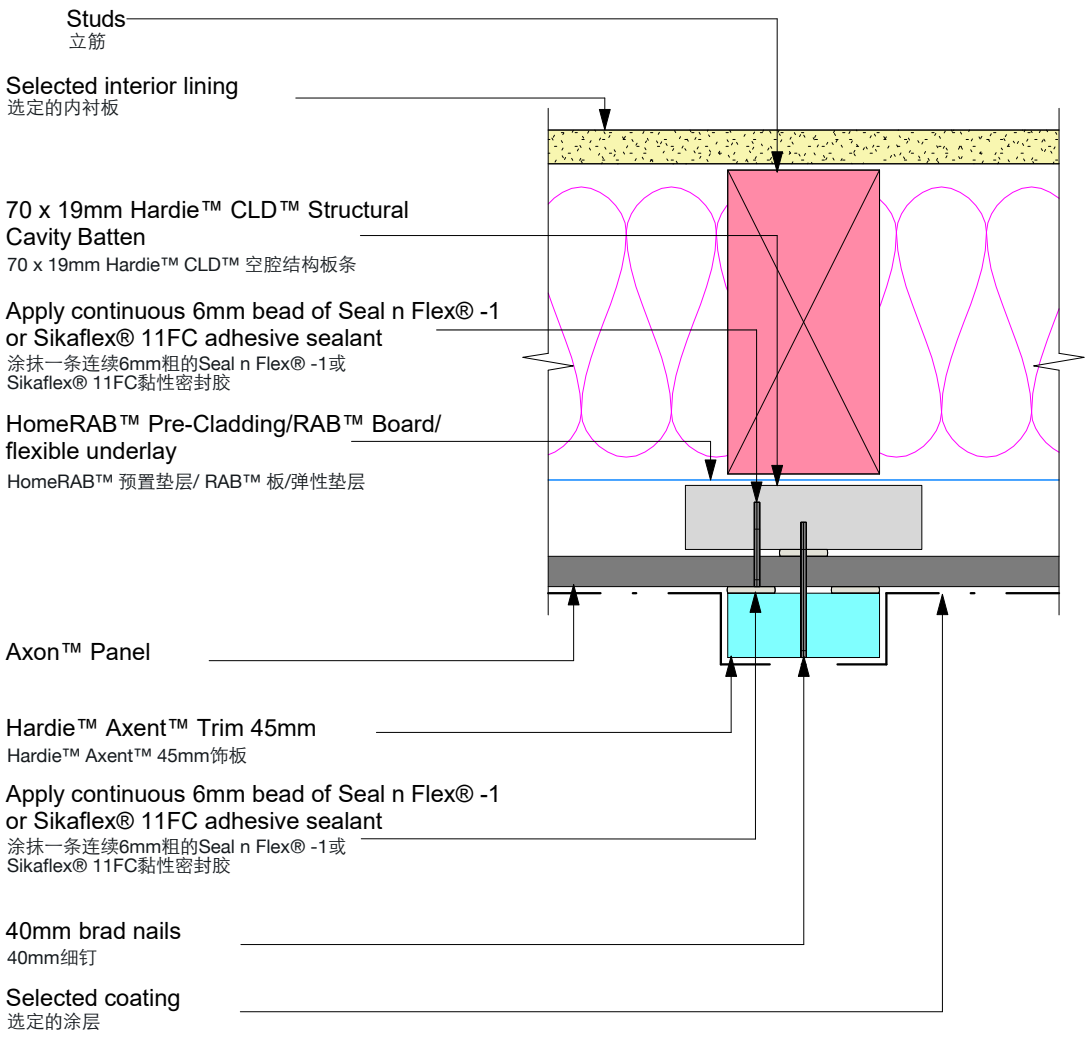
Figure 13: Hardie™ Axent™ Trim 70 and 89mm at intermediate stud
图13: 居中立筋处70mm和89mm宽的Hardie™ Axent™ 饰板的安装



Note:
注意:

* Ensure that a continuous 6mm bead of adhesive sealant is applied between CLD™ Structural Cavity Batten and Axon™ Panel.
  确保在CLD™ 空腔结构板条和Axon™ Panel 之间涂抹一条连续6mm粗的黏性密封胶。
* Ensure that the required edge distance is maintained when fixing.
  确保固定时留出符合要求的边缘距离。
* Seal cut edges with a primer compatible with final coatings.
  现场切割边缘须使用与最终涂层相兼容的底漆。

Figure 14: Hardie™ Axent™ Trim 45mm at intermediate stud
图14：居中立筋处45mm宽的Hardie™ Axent™ 饰板的安装



Note:
注意：

* Ensure that the required edge distance is maintained when fixing.
  确保固定时留出符合要求的边缘距离。
* Seal cut edges with a primer compatible with final coatings.
  现场切割边缘须使用与最终涂层相兼容的底漆。

Figure 15: Hardie™ Axent™ Trim fixing | 图15: Hardie™ Axent™ 饰板的固定

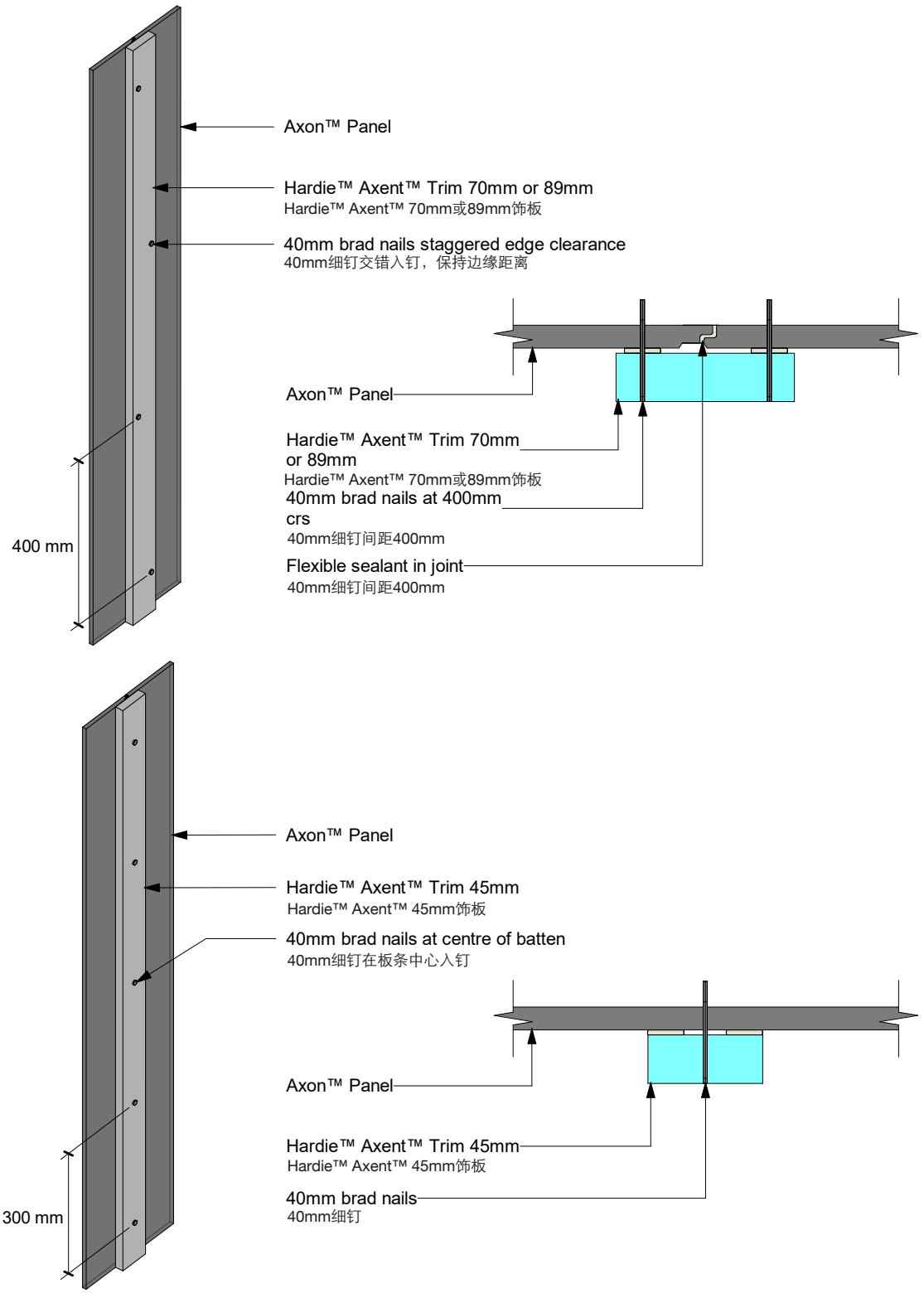


Figure 16: Hardie™ Axent™ Trim at internal corner
图16：阴角处Hardie™ Axent™ 饰板的安装

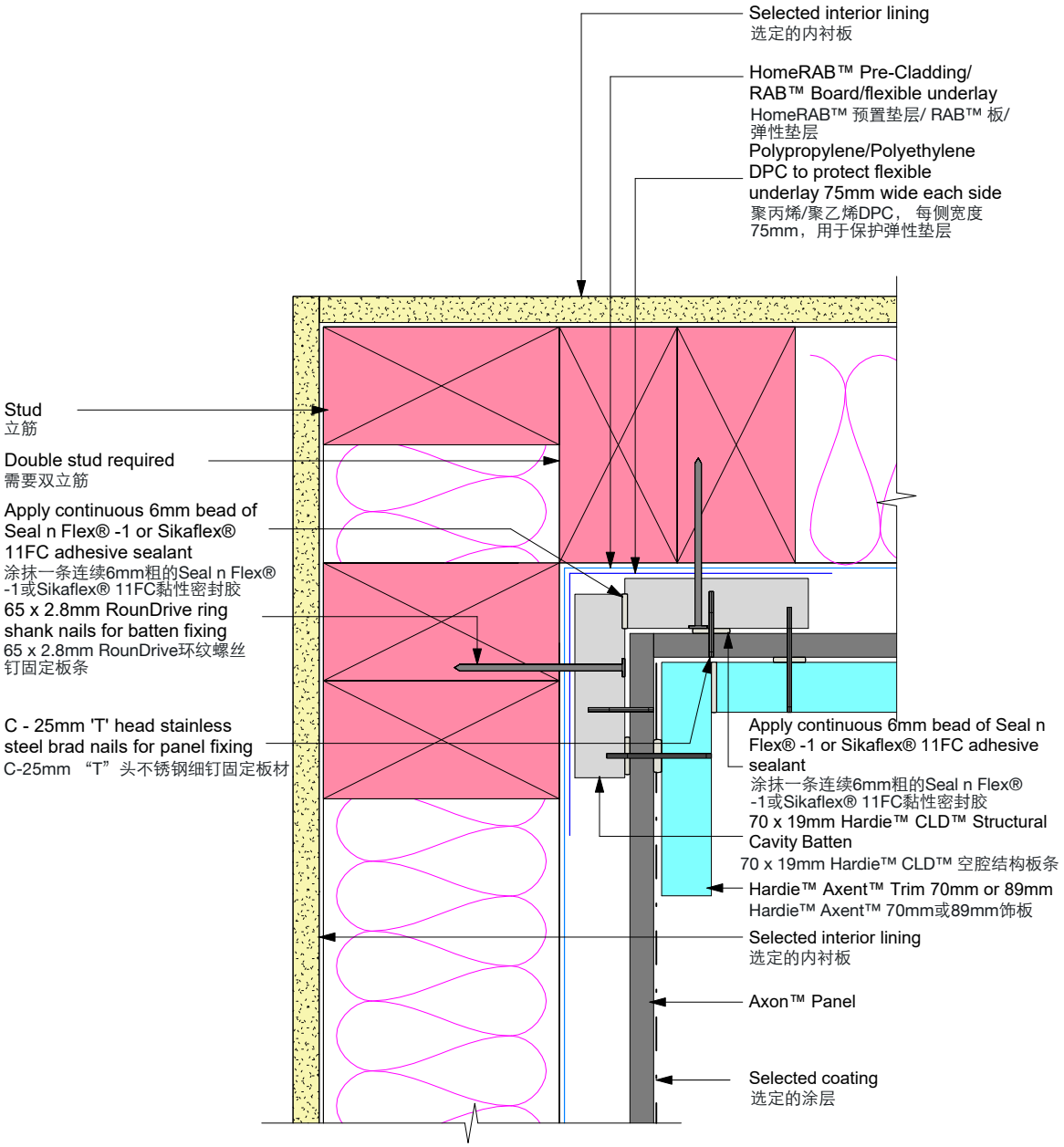


Figure 17: Hardie™ Axent™ Trim at external Corner
图17：阳角处Hardie™ Axent™ 饰板的安装

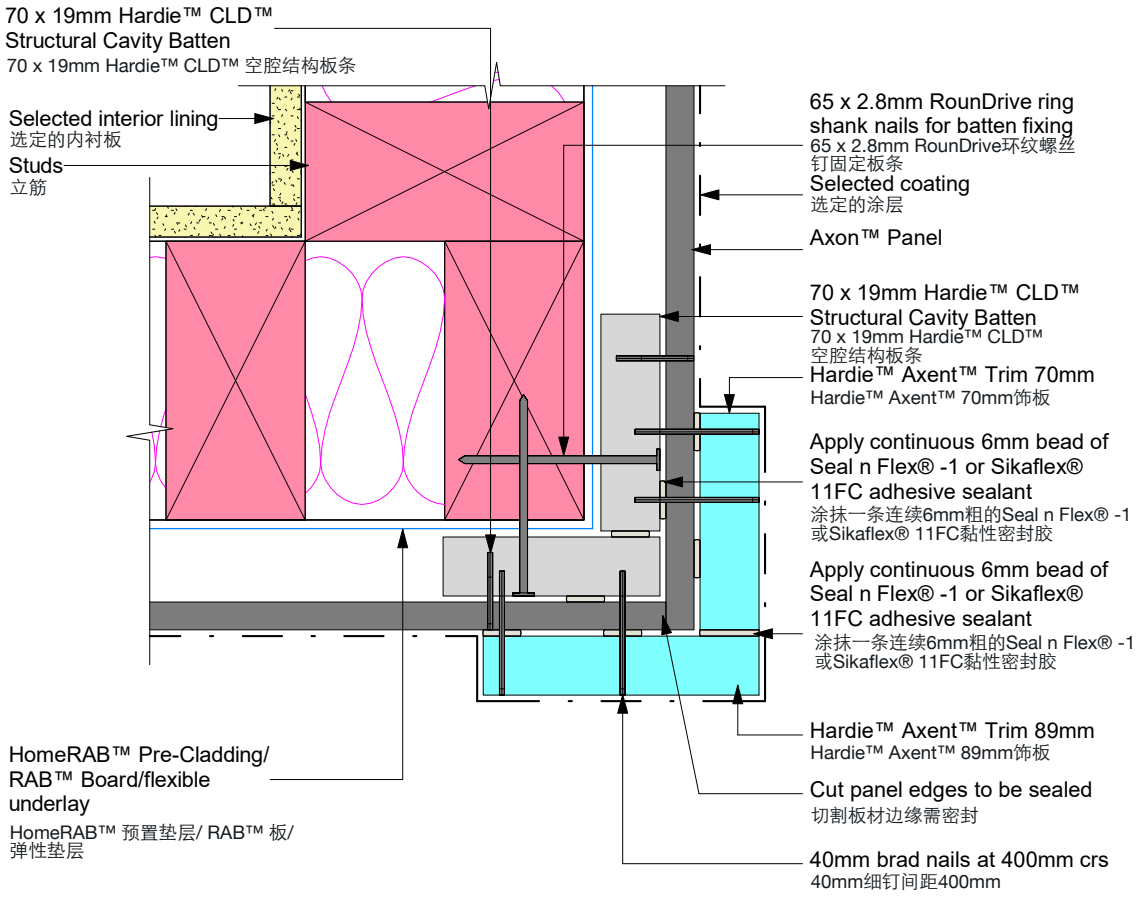


Figure 18: Jointing of Hardie™ CLD™ Structural Cavity Batten
图18: Hardie™ CLD™ 空腔结构板条的接缝

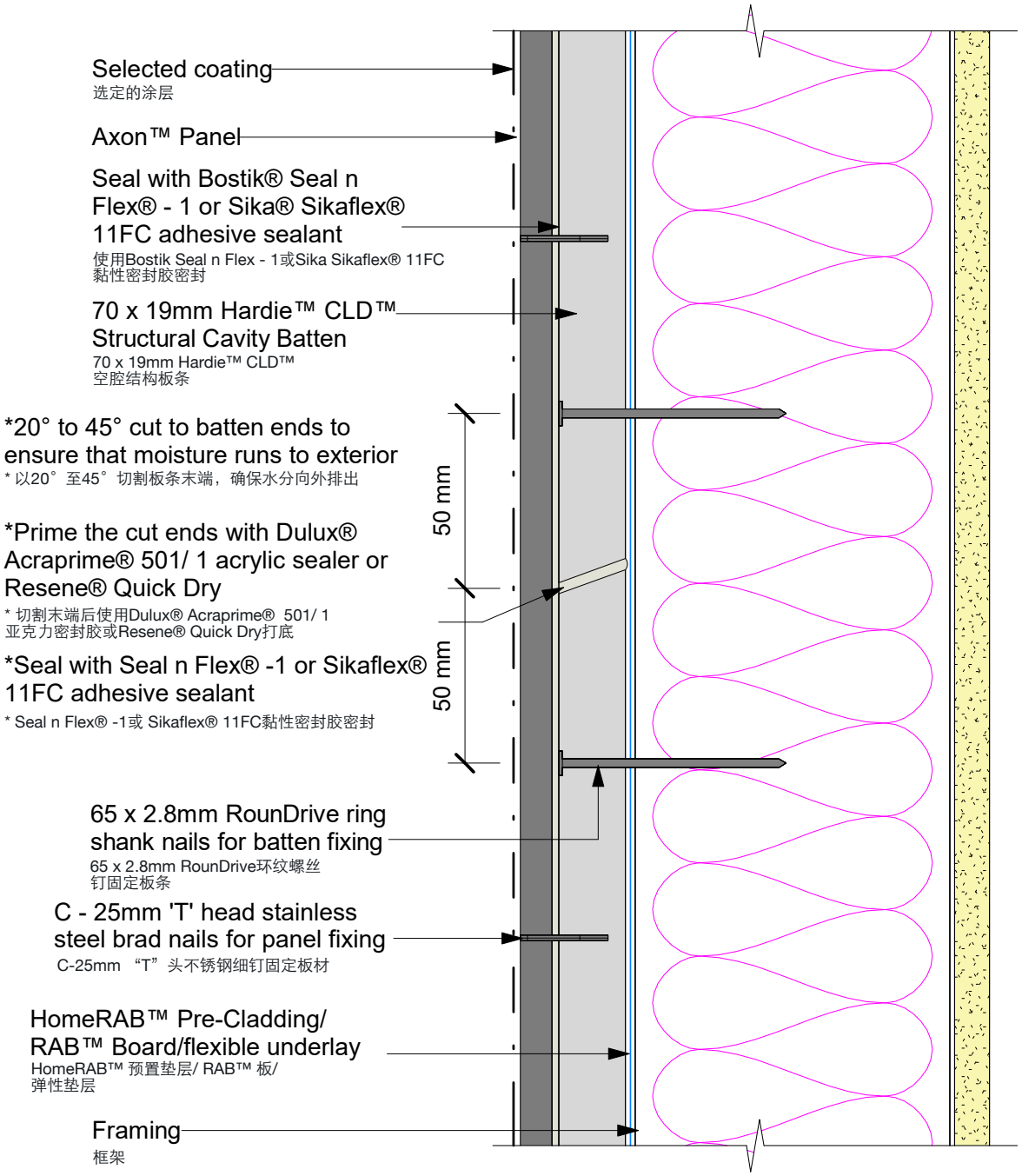
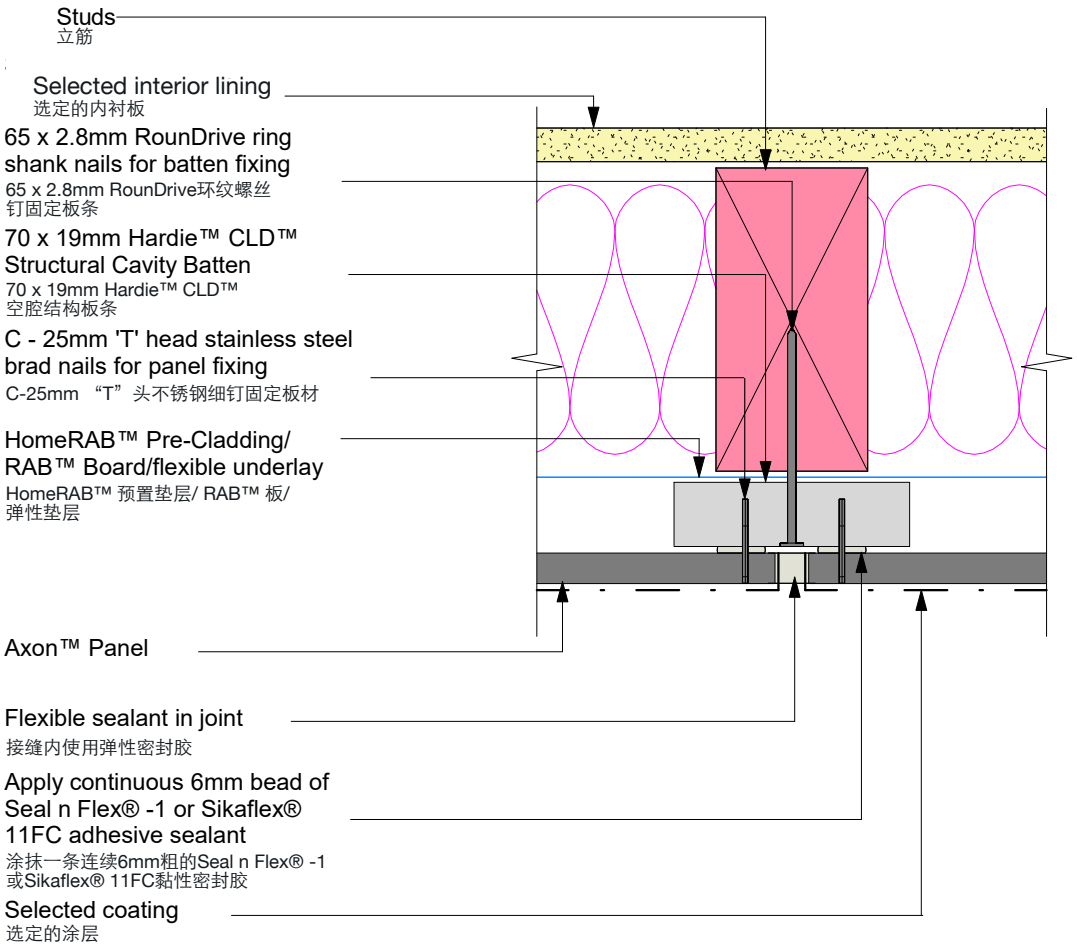


Figure 19: Vertical sealant joint | 图19：垂直密封接缝

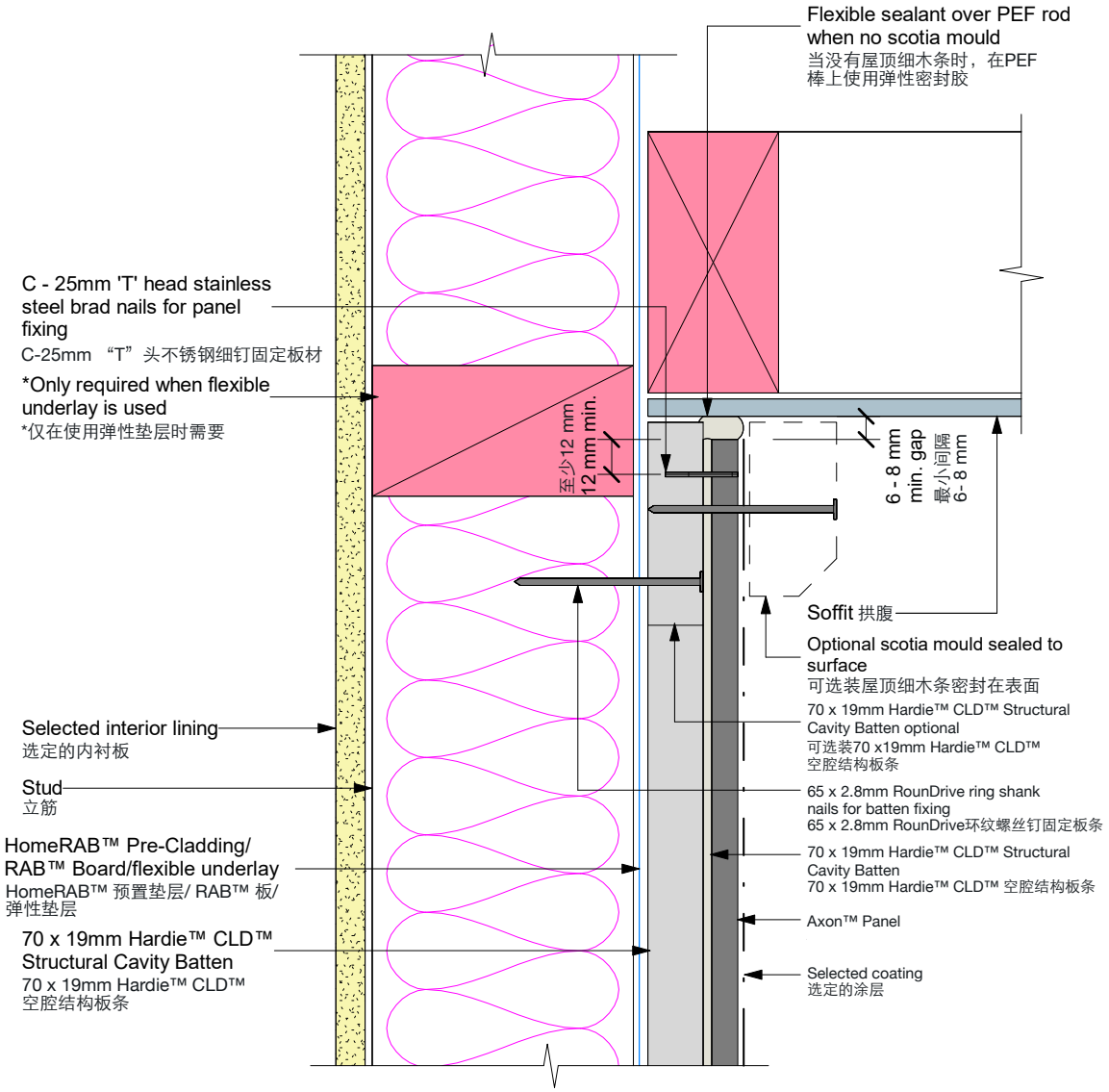


Note: 注意：

* Ensure that a continuous 6mm bead of adhesive sealant is applied between Hardie™ CLD™ Structural Cavity Batten and Axon™ Panel.
  确保在Hardie™ CLD™空腔结构板条和Axon™ Panel 之间涂抹一条连续6mm粗的黏性密封胶。
* Ensure that the required edge distance is maintained when fixing.
  确保固定时留出符合要求的边缘距离。
* Seal cut edges with a primer compatible with final coatings.
  现场切割边缘须使用与最终涂层相兼容的底漆。
* Push panel hard against Hardie™ CLD™ Structural Cavity Batten.
  将面板用力推到Hardie™ CLD™空腔结构板条上。

For use ONLY where manufactured edge jointing not possible for build ie small window in full sheet
仅在无法构建制造边缘接头的地方使用，即全片小窗

Figure 20: Soffit detail | 图18: 拱腹详图



Note:
注意:

Site cut edges to be primed. Ensure cavity does not vent into roof space. Refer to E2/AS1 clause 9.1.8.2.
现场切割边缘须涂底漆。确保空腔不通向屋顶。参见E2/AS1第9.1.8.2条。

Figure 21: Nil soffit detail | 图21： “零拱腹”详图

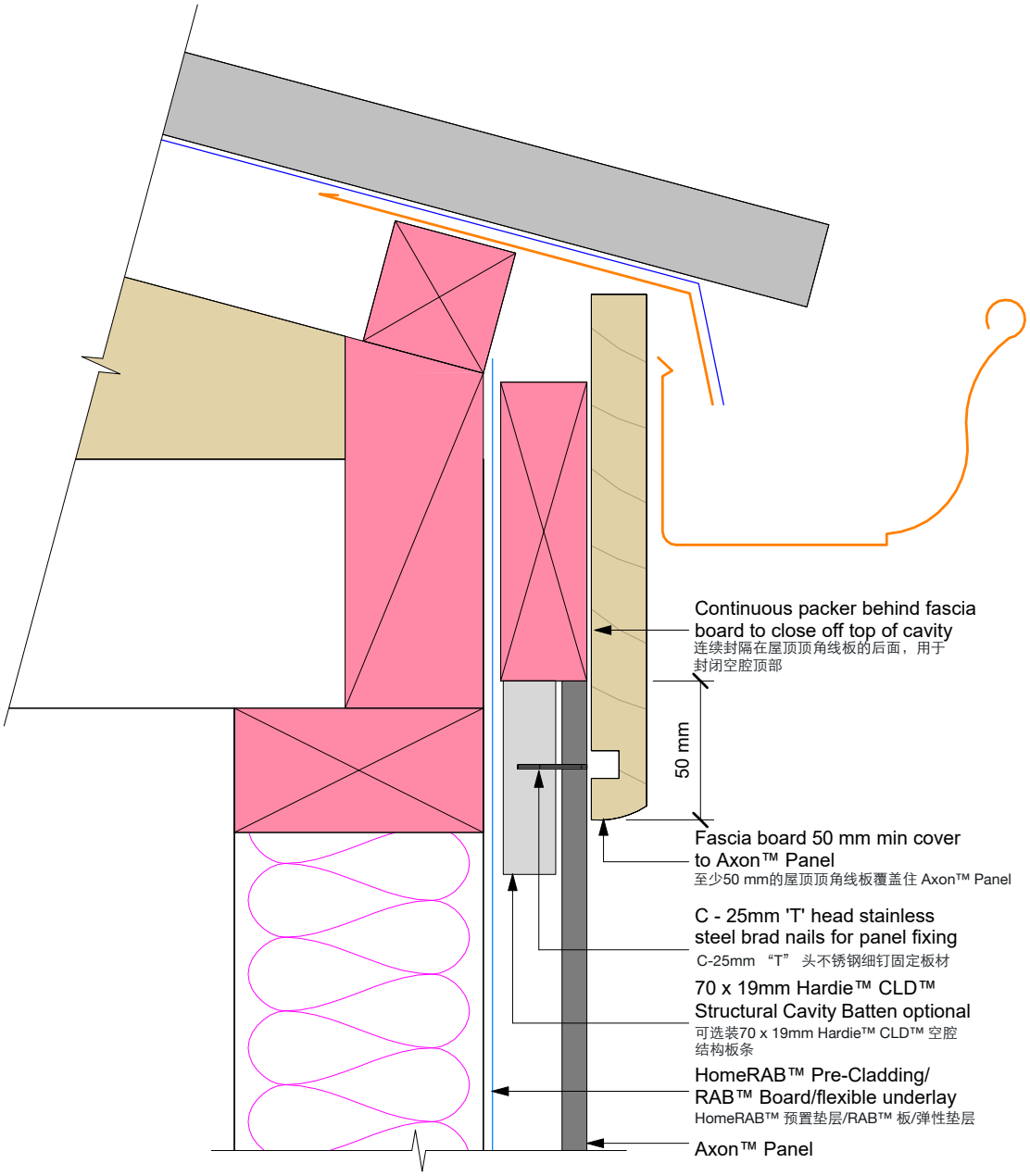
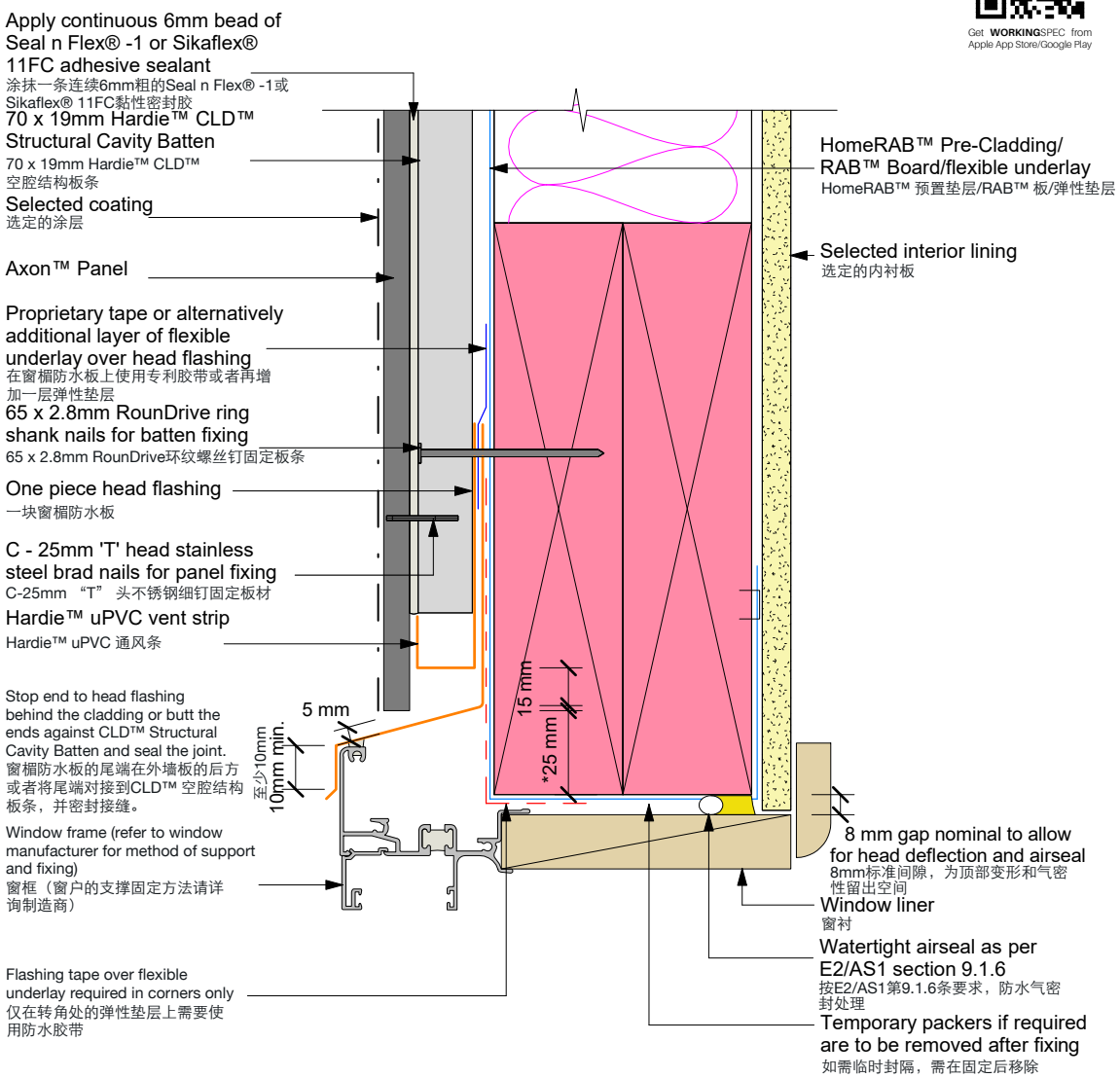


Figure 22: Window head | 图22: 窗楣

interactive assembly instructions available
http://wksp.nz/jh-axn-win
Get WORKINGSPEC from Apple App Store/Google Play



Note:
注意：

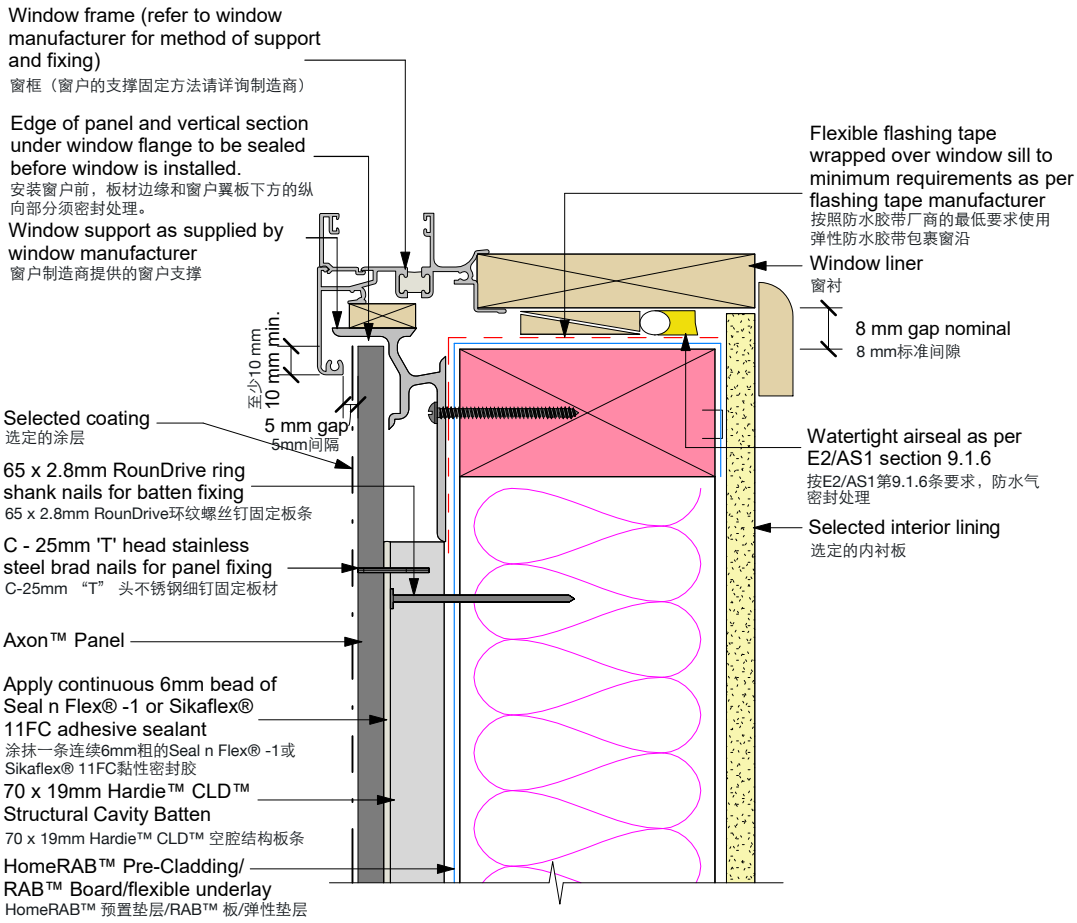
* When HomeRAB™ Pre-Cladding/RAB™ Board is used flashing tape to be applied to the entire window opening.
当使用预置垫层板时，需要在整个窗户开口上使用防水胶带

* Also refer to Figure 116 NZBC clause E2/AS1 for head and jamb details
同时参考NZBC E2/AS1条款图116以获取窗楣和窗框详图

* Sealant must be applied between head flashing and window flange VH and EH wind zones and SED wind pressures
在VH和EH风区以及SED风压环境下，必须在窗楣防水板和窗户翼板之间涂抹密封胶

Figure 23: Window sill | 图23: 窗沿

interactive assembly instructions available
http://wksp.nz/jh-axn-win
Get WORKINGSPEC from Apple App Store/Google Play



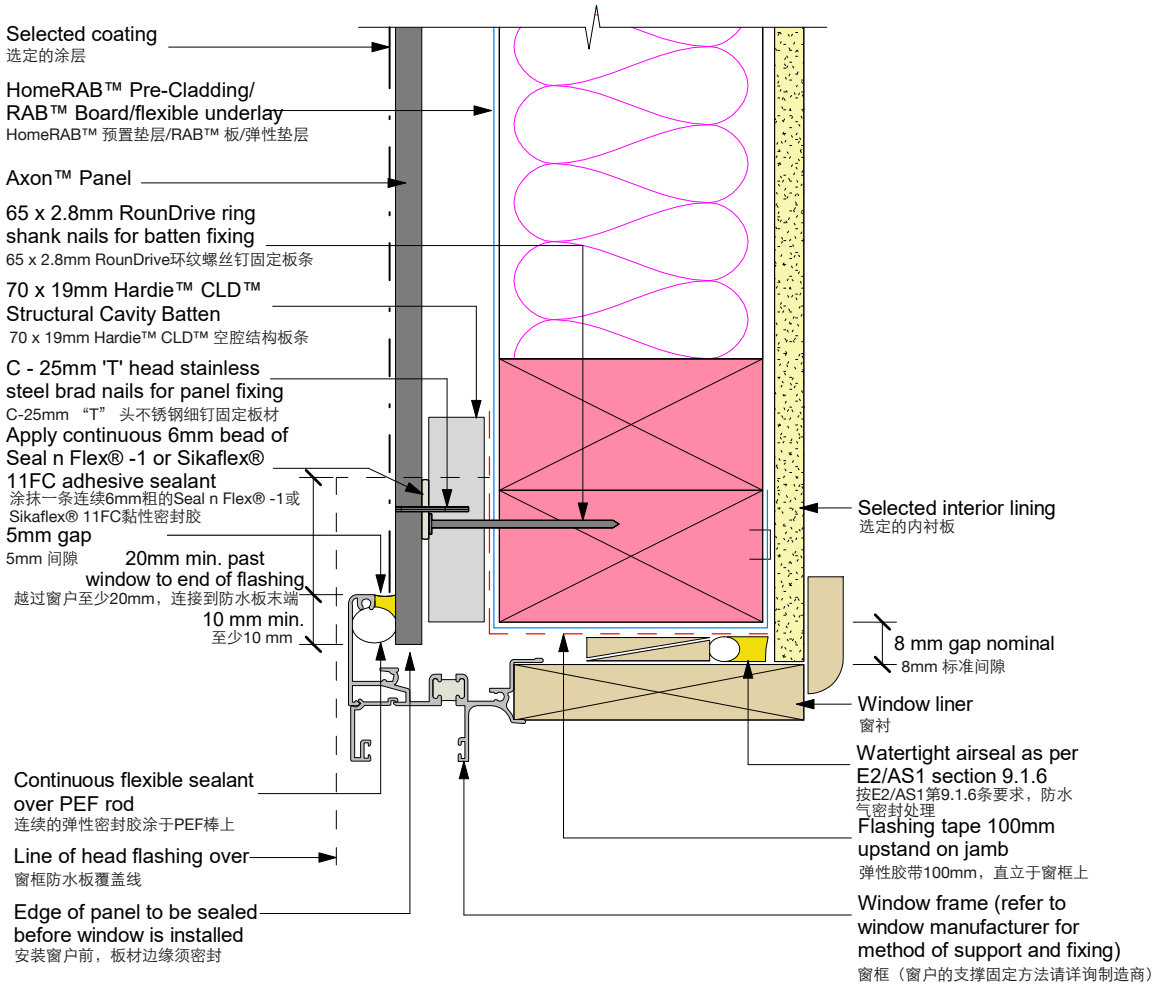
General notes for materials selection
材料选择的一般注意事项

* Flexible underlay must comply with acceptable solution E2/AS1.
  弹性垫层须符合可接受方案的要求。
* Flashing tape must have proven compatibility with the selected flexible underlay and other materials with which it comes into contact.
  防水胶带必须与所选的弹性垫层或其它相互接触的材料兼容。

Refer to the manufacturer or supplier for technical information for these materials.
请参考制造商或供应商提供的材料技术信息。

Figure 24: Window jamb | 图24: 窗框

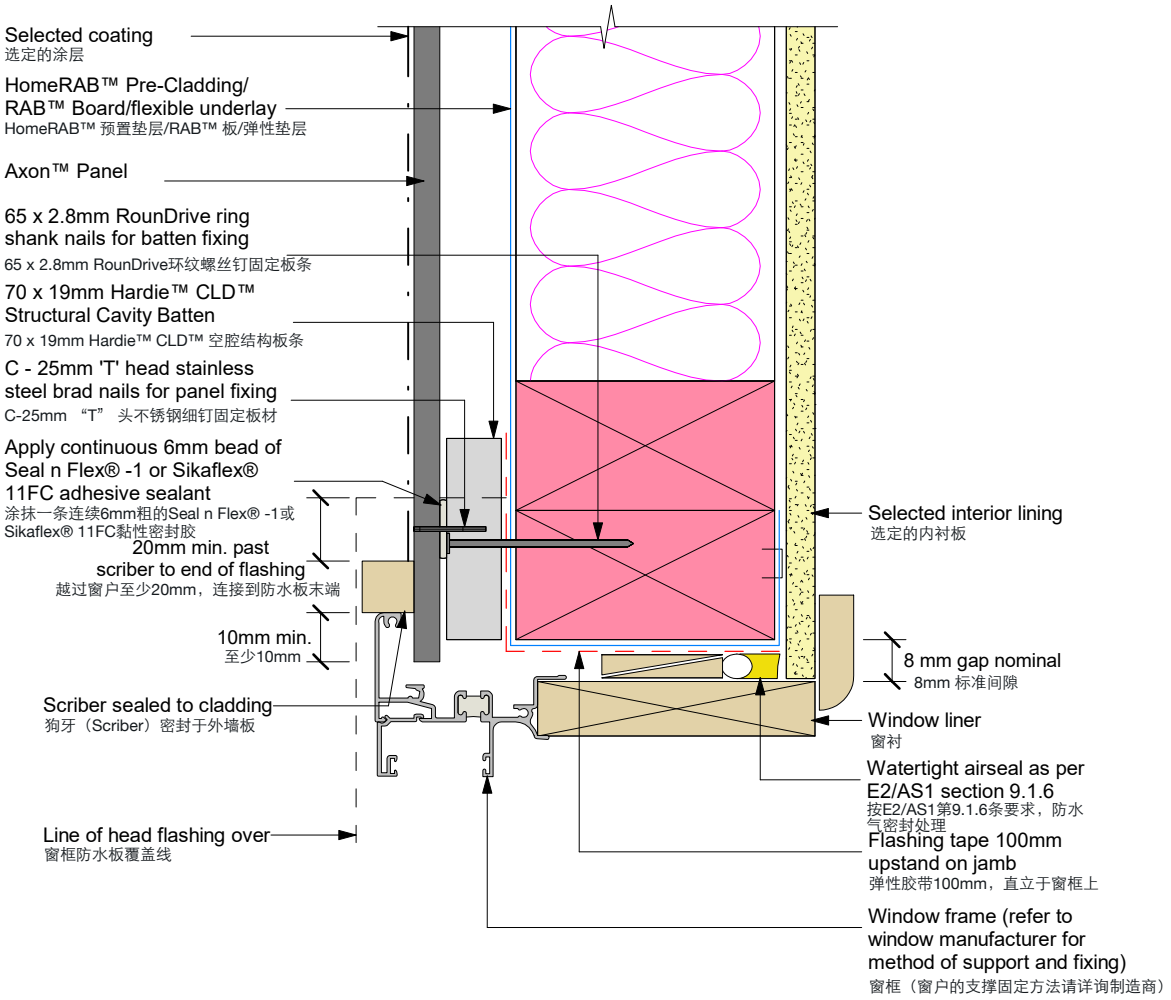
interactive assembly instructions available
http://wksp.nz/jh-axn-win
Get WORKINGSPEC from Apple App Store/Google Play



Note:
注意:

When HomeRAB™ Pre-Cladding/RAB™ Board is used flashing tape to be applied to the entire window opening.
当使用HomeRAB™ 预置垫层/RAB™ 板时，需要在整个窗户开口上使用防水胶带。

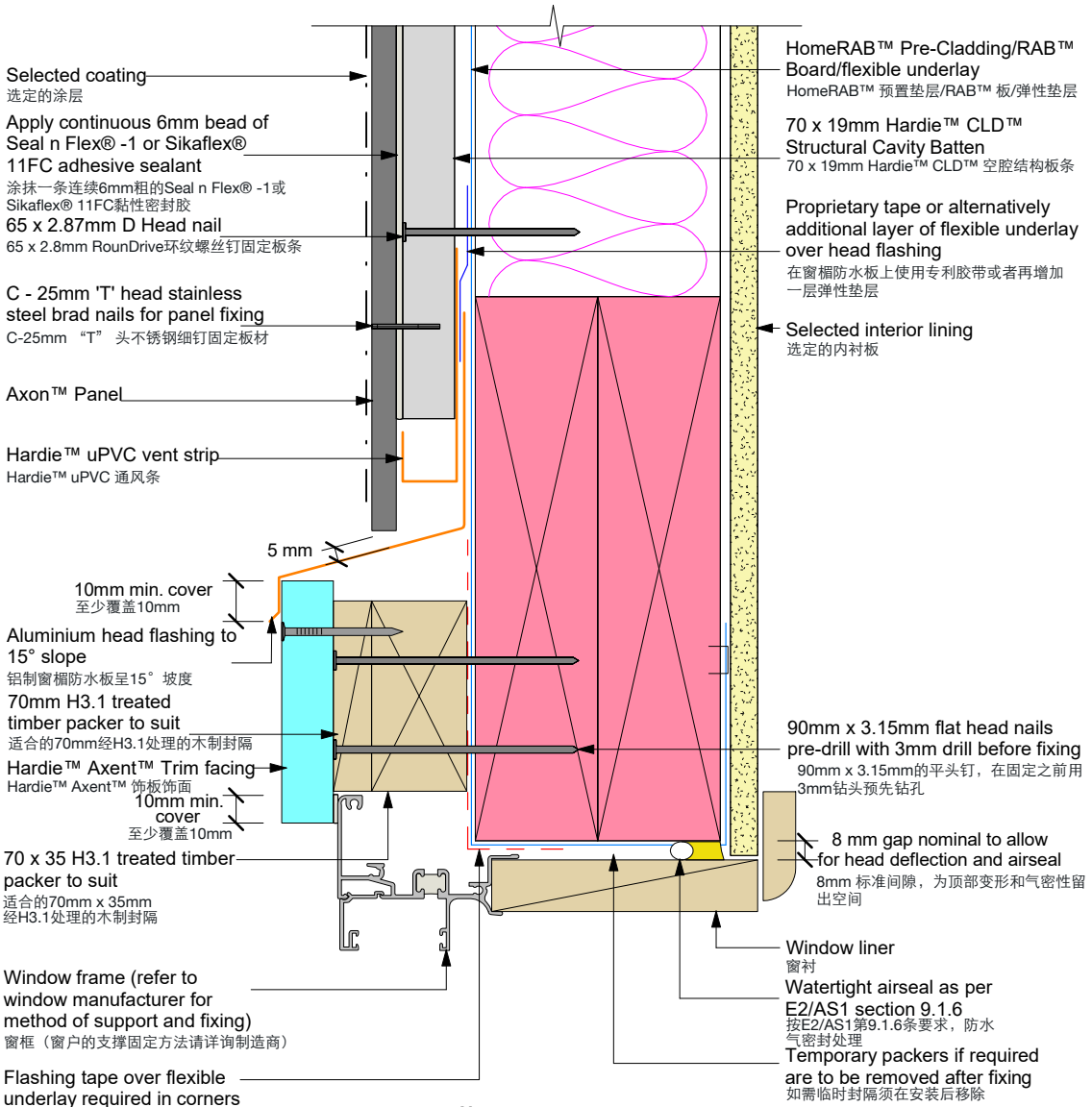
Figure 25: Window jamb with scriber | 图25: 窗框及狗牙（scriber）



Note: When HomeRAB™ Pre-Cladding/RAB™ Board is used flashing tape to be applied to the entire window opening.

注：当使用HomeRAB™ 预置垫层/RAB™ 板时，需要在整个窗户开口上使用防水胶带。

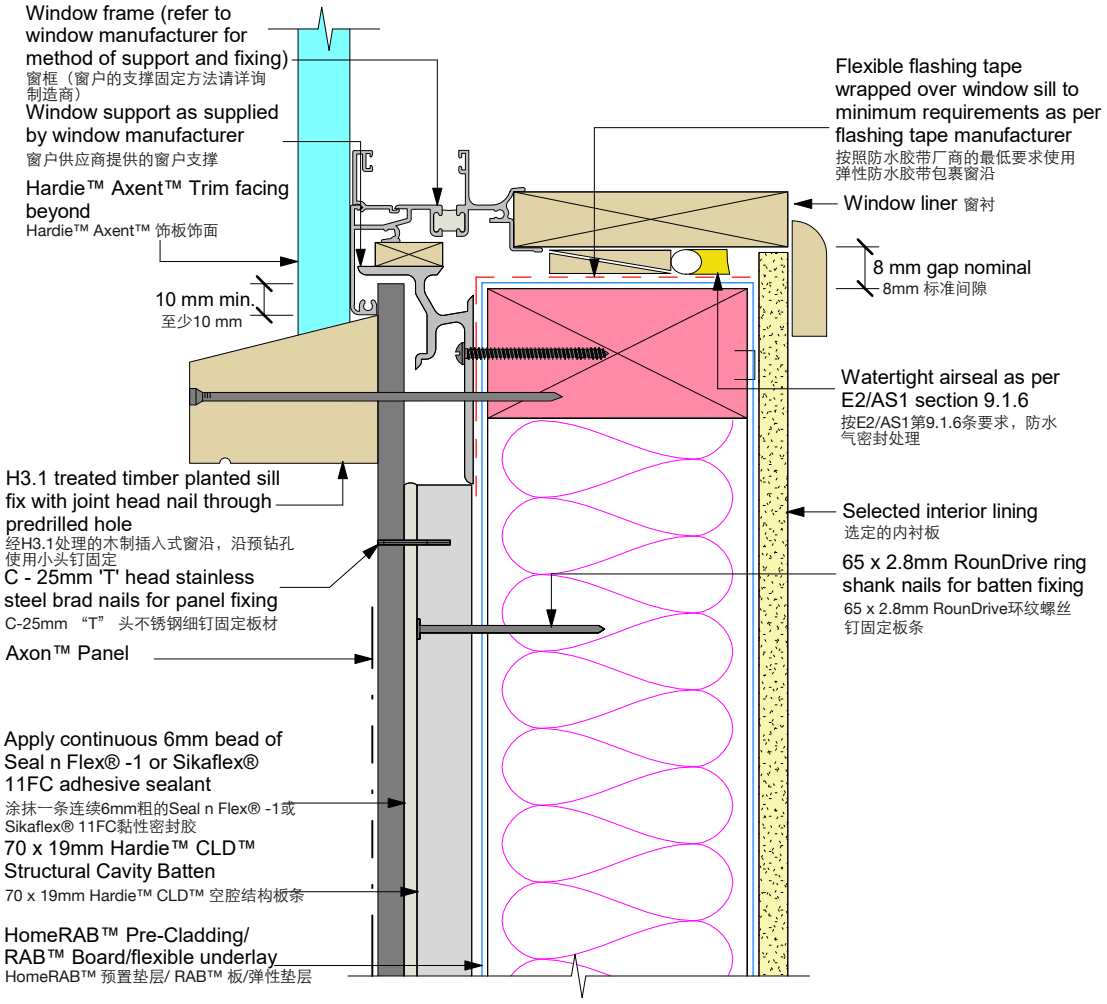
Figure 26: Window head with facing | 图26: 带饰面的窗楣



Note:
注意:

- Sealant must be installed between Hardie™ Axent™ Trim and window flange in VH wind zones
  在VH风区，必须在Hardie™ Axent™ 饰板与窗户翼板之间使用密封胶
- Sealant must be applied between the head flashing and Axent Trim in VH and EH wind zone.
  在VH和EH风区，必须在窗楣防水板和Axent饰板之间涂抹密封胶。

Figure 27: Window sill with planted sill | 图27: 插入式窗沿

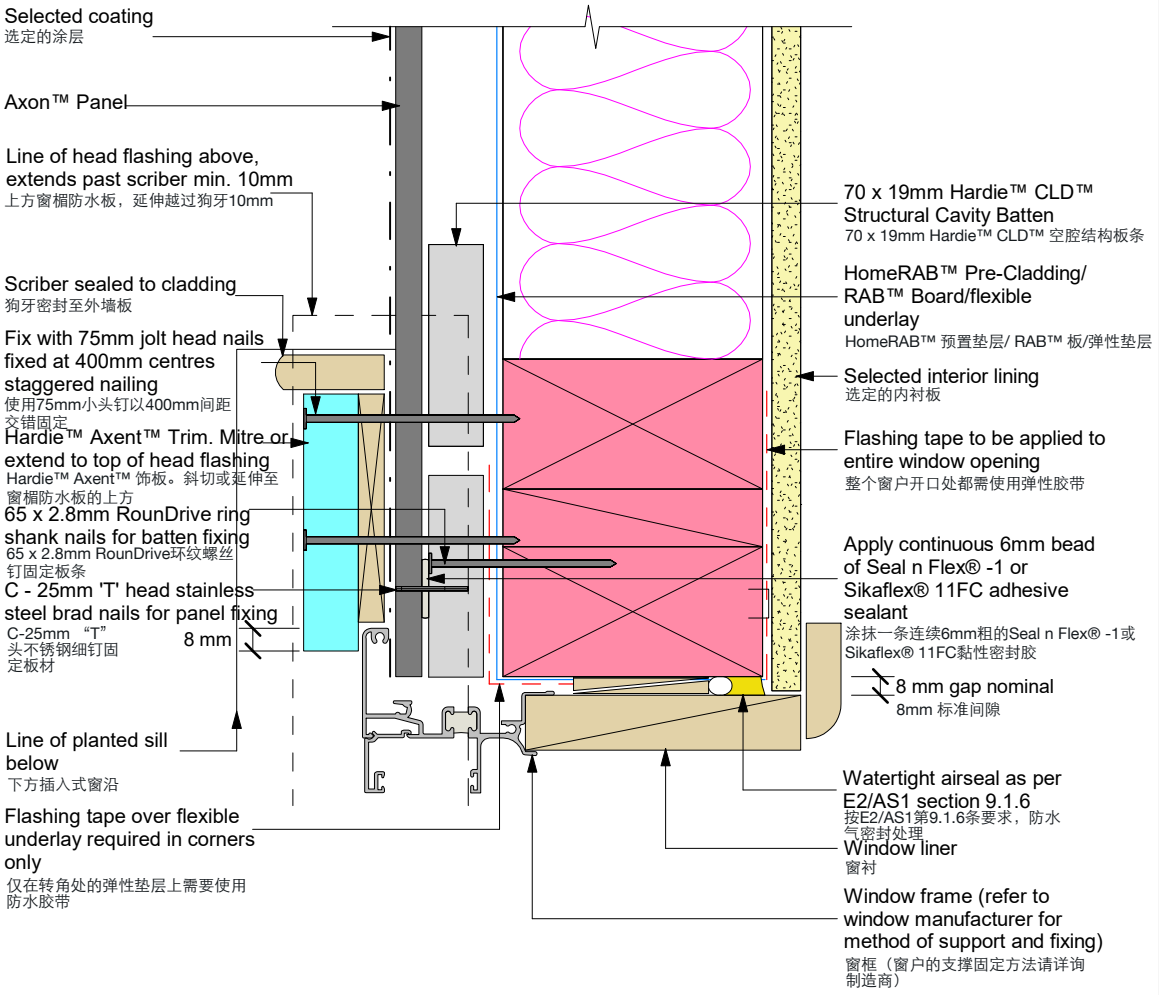


General notes for materials selection
材料选择的一般注意事项

* Flexible underlay must comply with acceptable solution E2/AS1.
  弹性垫层须符合可接受方案E2/AS1的要求。
* Flashing tape must have proven compatibility with the selected flexible underlay and other materials with which it comes into contact.
  防水胶带必须与所选的弹性垫层或其它相互接触的材料兼容。
* When HomeRAB™ Pre-Cladding/RAB™ Board are used flashing tape to be applied to the entire opening.
  当使用HomeRAB™ 预置垫层/ RAB™ 板时，需要在整个窗户开口上使用防水胶带。

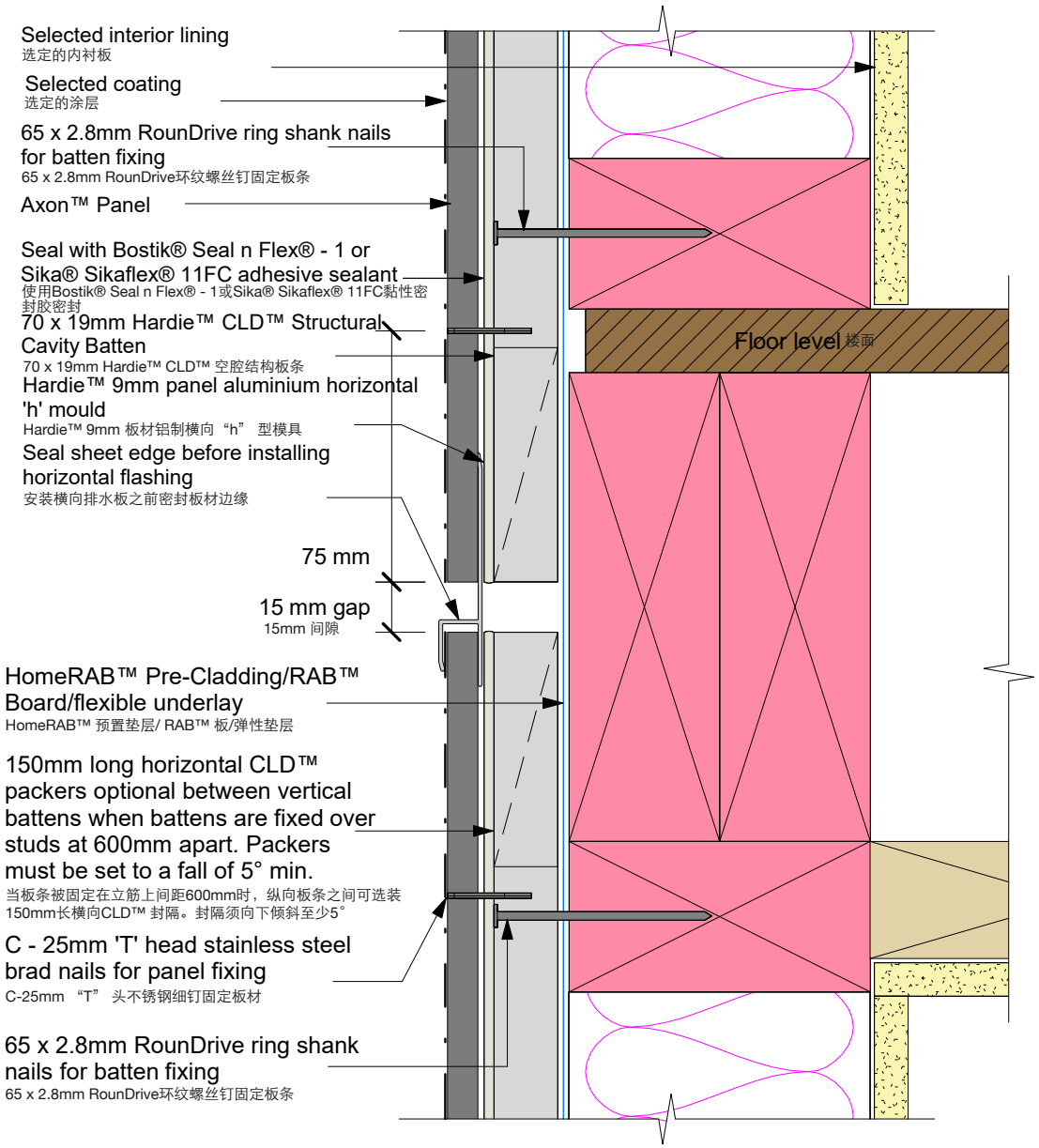
Refer to the manufacturer or supplier for technical information for these materials.
请参考制造商或供应商提供的材料技术信息。

Figure 28: Window and door jamb with facing | 图28: 带有饰面的窗框和门框



Note: When HomeRAB™ Pre-Cladding/RAB™ Board is used flashing tape to be applied to the entire window opening.
注：当使用HomeRAB™ 预置垫层/RAB™ 板时，需要在整个窗户开口上使用防水胶带。

Figure 29: Horizontal joint at floor joist | 图26: 地板龙骨高度的横向接缝



Note: When 50 year durability is required refer Table 20 of NZBC E2/AS1 document.
注：须要实现50年耐久性时，参见NZBC E2/AS1表20。

Figure 30: Horizontal joint in tall wall | 图30: 高墙的横向接缝

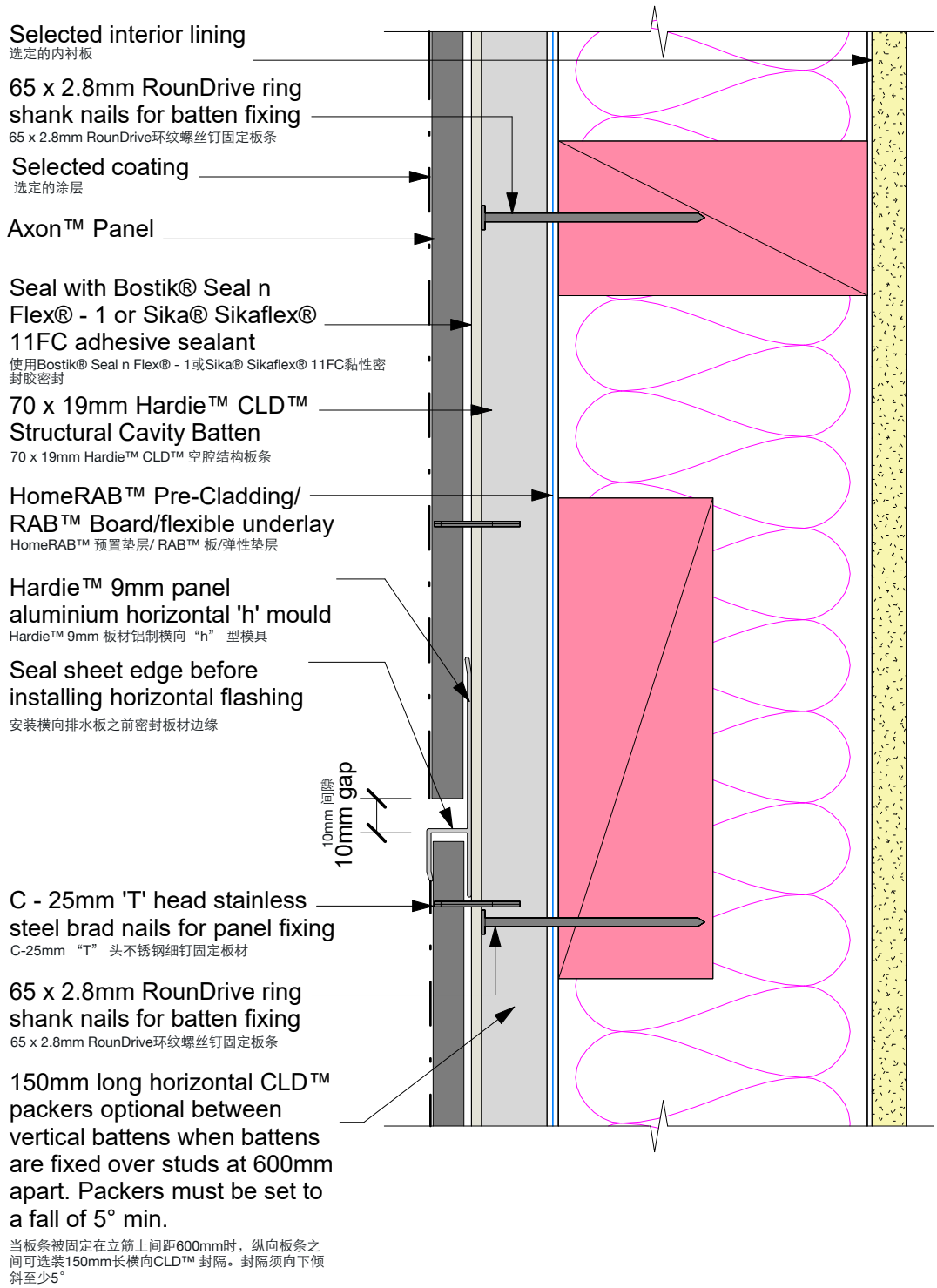
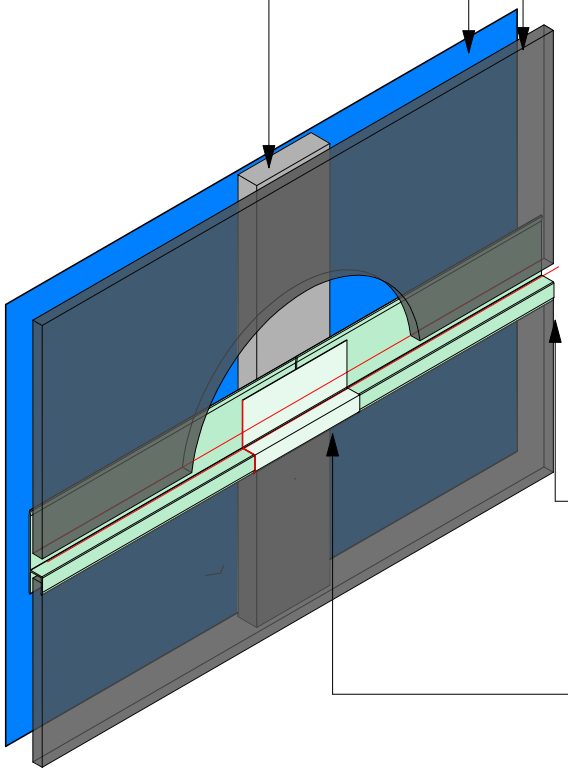


Figure 31: Aluminium ‘h’ mould joiner | 图31: 铝制“h”型模具接缝件



70 x 19mm Hardie™ CLD™ Structural Cavity Batten
70 x 19mm Hardie™ CLD™ 空腔结构板条

HomeRAB™ Pre-Cladding/ RAB™ Board/flexible underlay
HomeRAB™ 预置垫层/ RAB™ 板/ 弹性垫层

Axon™ Panel

Hardie™ 9mm Panel aluminium 'h' mould ends butted together
Hardie™ 9mm板材铝制横向“h”型模具末端对接在一起

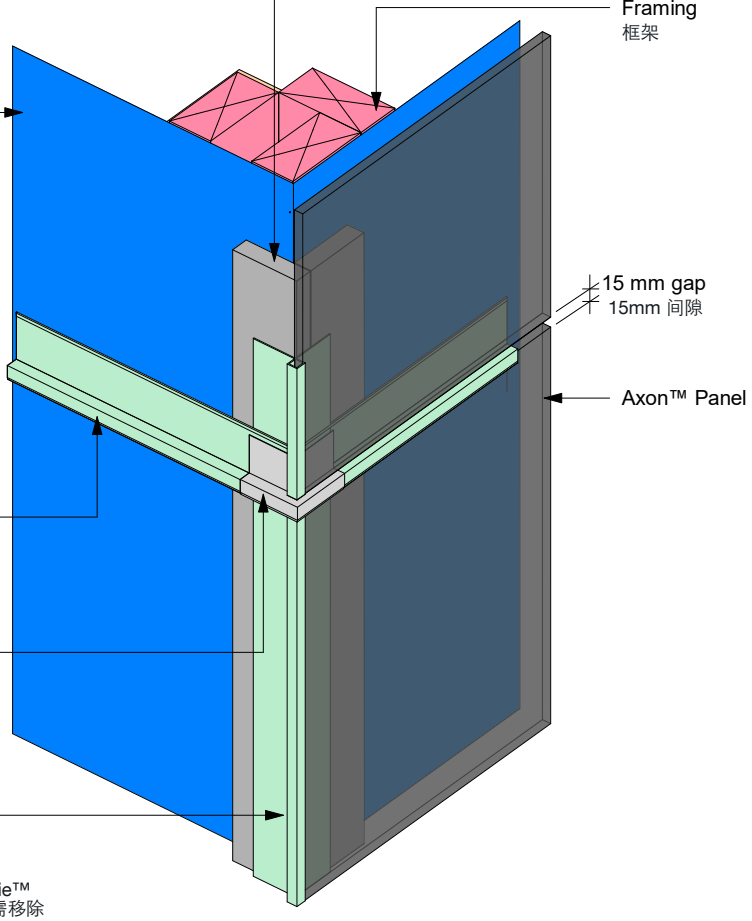
Hardie™ aluminium 'h' mould joiner, flexible sealant to allow for expansion to both sides of joiner. Ensure adequate seal between both components.
Hardie™ 铝制“h”型模具接缝件，使用弹性密封胶允许向接缝件的两侧扩张。确保组件之间妥善密封。

Figure 32: External corner at ‘h’ mould joint detail
图32: 阳角处“h”型模具接缝详图

interactive assembly instructions available

http://wksp.nz/jh-axn-mfl

Get **WORKING**SPEC from Apple App Store/Google Play



Note: Site cut edges to be primed

注：现场切割边缘须涂底漆

Figure 33: Internal corner at ‘h’ mould joint detail
图33: 阴角处“h”型模具接缝详图

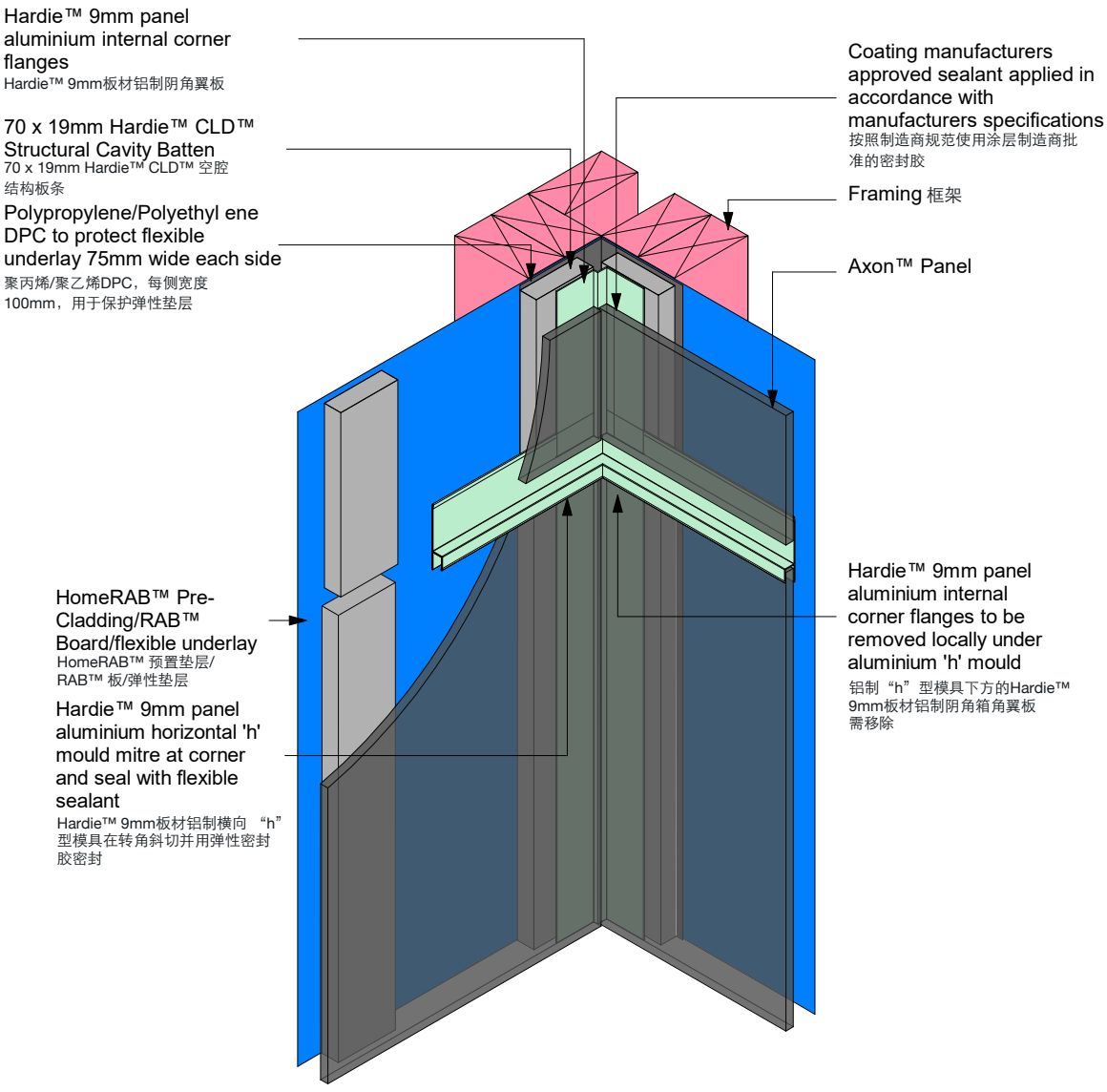
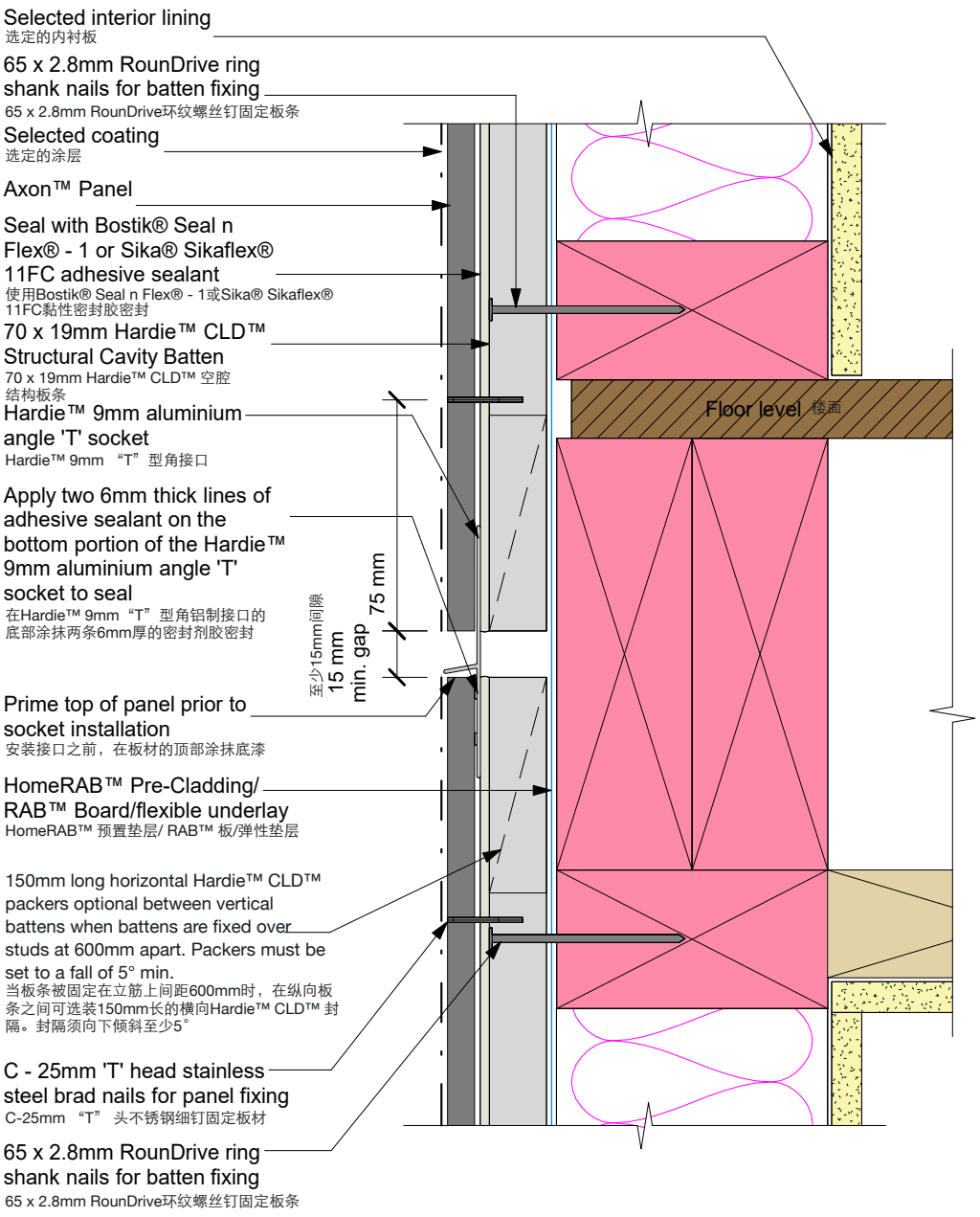


Figure 34: Angle ‘T’ socket joint at floor joist
图34：地板龙骨高度的“T”型角接口接缝



Note: When 50 year durability is required refer Table 20 of NZBC E2/AS1 document.
注意：须要实现50年耐久性时，参见NZBC E2/AS1表20。

Figure 35: Horizontal joint in tall wall | 图35: 高墙的横向接缝

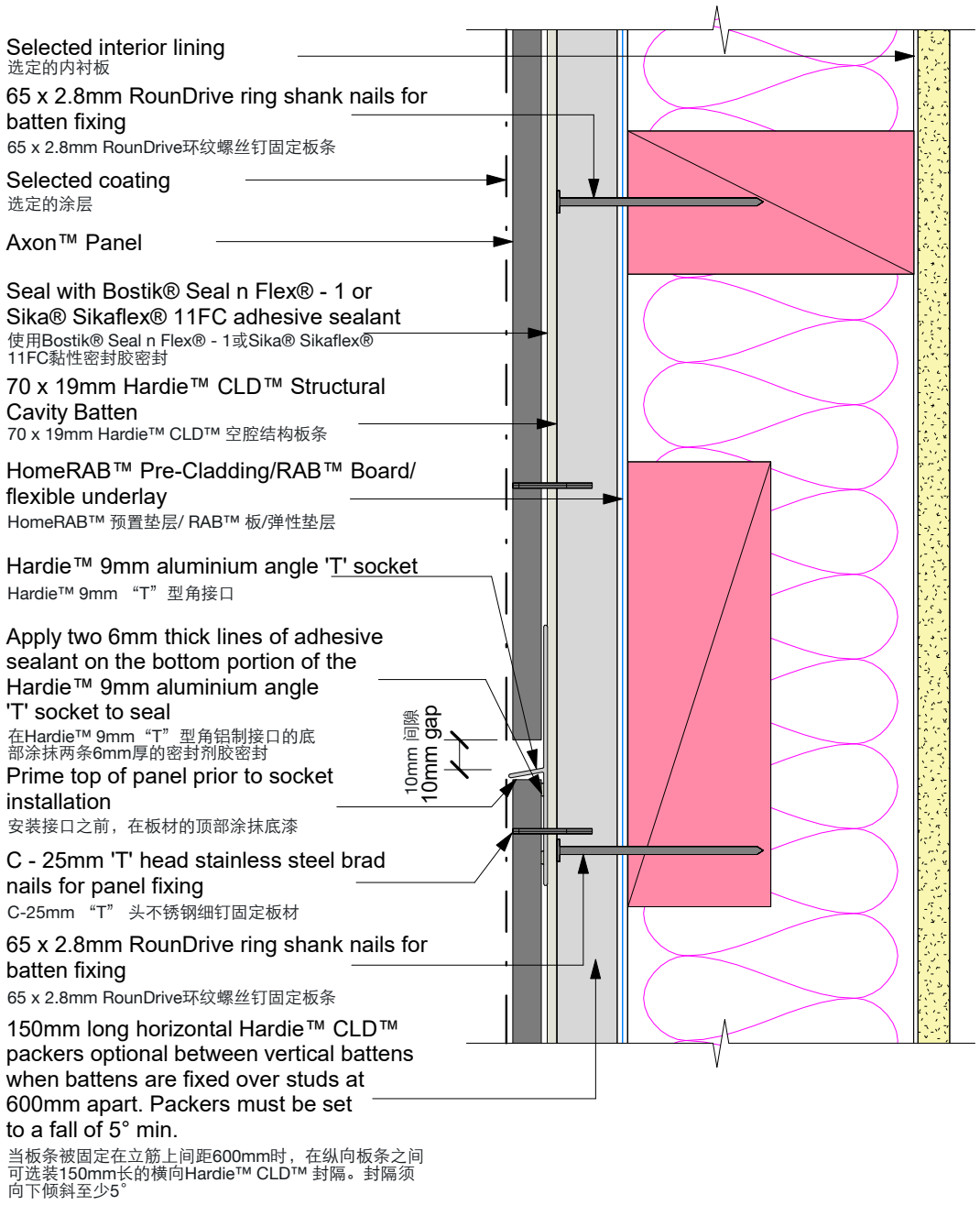
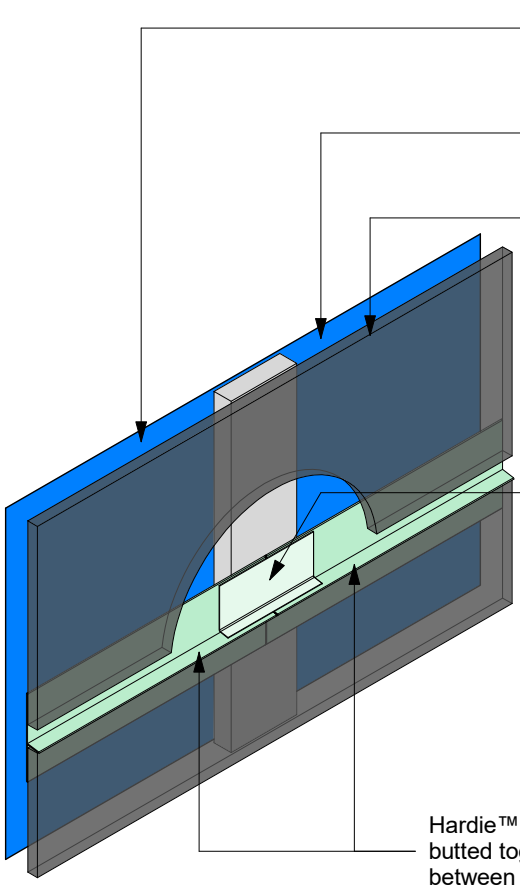


Figure 36: Angle ‘T’ horizontal jointer | 图36：横向“T”型角接缝件



70 x 19mm Hardie™ CLD™ Structural Cavity Batten
70 x 19mm Hardie™ CLD™ 空腔结构板条

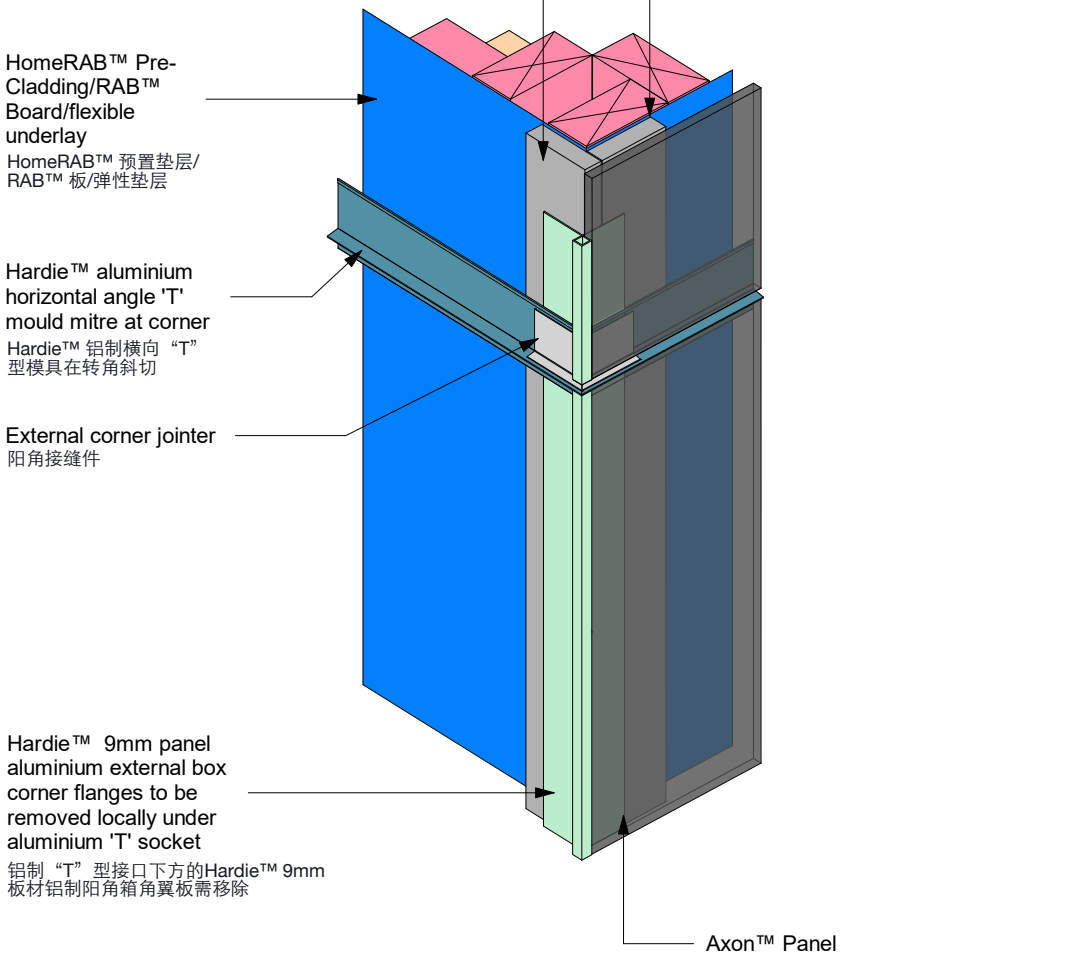
HomeRAB™ Pre-Cladding/ RAB™ Board/flexible underlay
HomeRAB™ 预置垫层/ RAB™ 板/弹性垫层

Axon™ Panel

Hardie™ angle 'T' horizontal jointer
Hardie™ 横向“T”型角接缝件

Hardie™ aluminium angled 'T' mould ends butted together. Ensure adequate seal between two components.
将Hardie™“T”铝制模具末端连在一起。确保两个组件之间妥善密封。

Figure 37: Angle ‘T’ external corner at ‘T’ mould joint
图37：“T”型模具接缝处的“T”型阳角



Note: Site cut edges to be primed
注：现场切割边缘须涂底漆

Figure 38: Internal corner at angle ‘T’ socket joint detail
图38：“T”型角接口接缝处的阴角详图

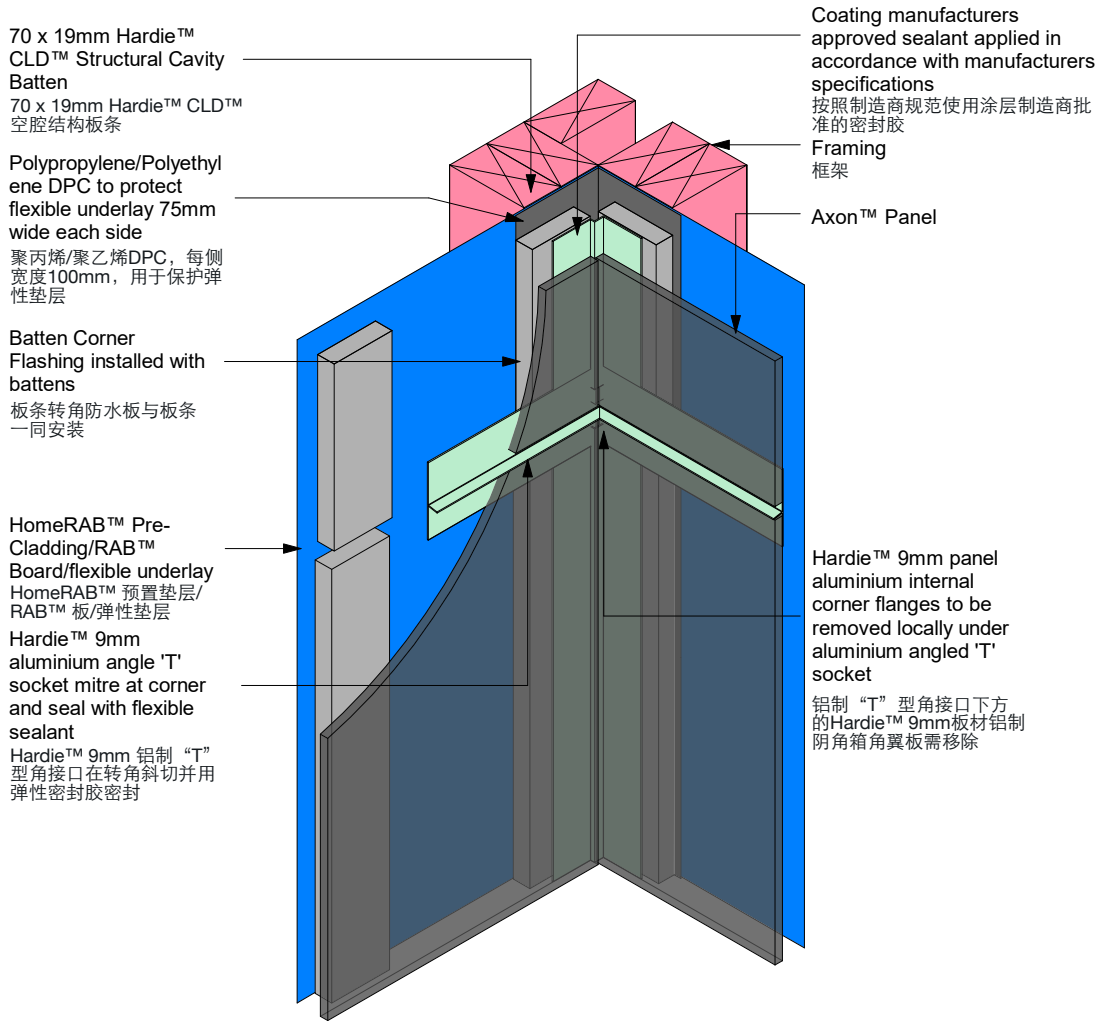


Figure 39: Joining moulding | 图39：线脚搭接

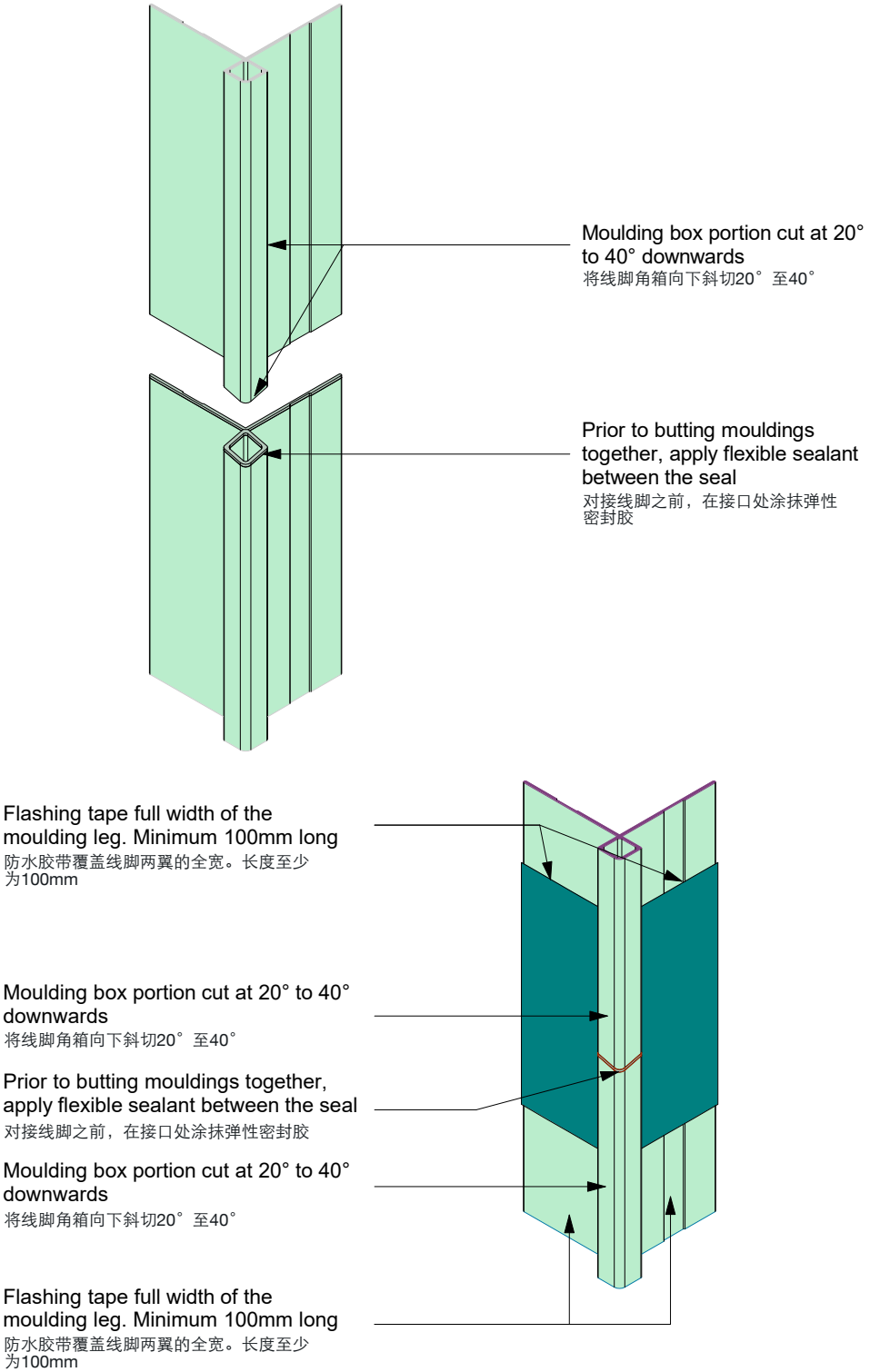


Figure 40: Cavity pipe penetration | 图40: 空腔管道穿透

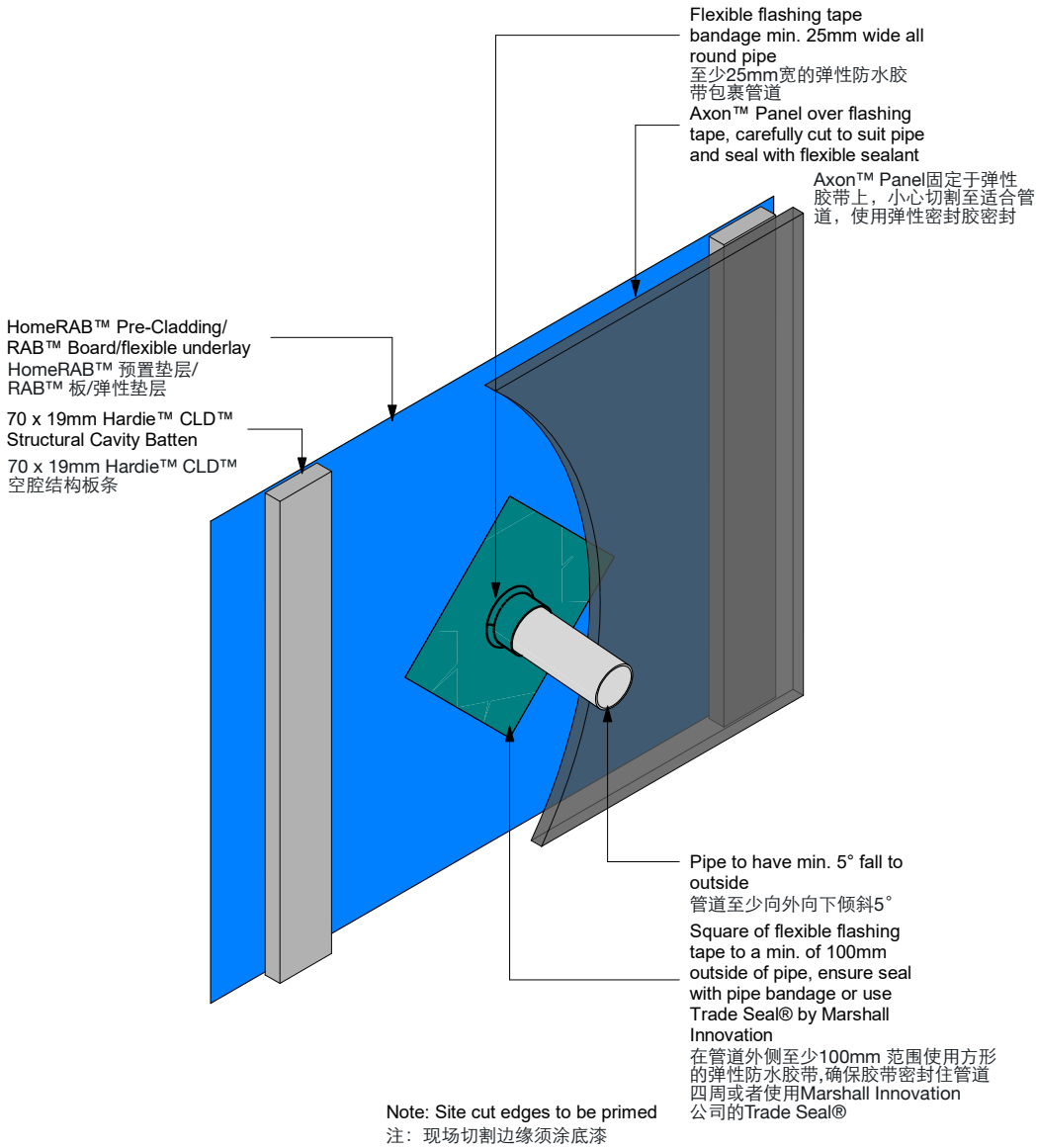


Figure 41: ‘h’ mould joint at window head | 图41: 窗楣处“h”型模具接缝详图

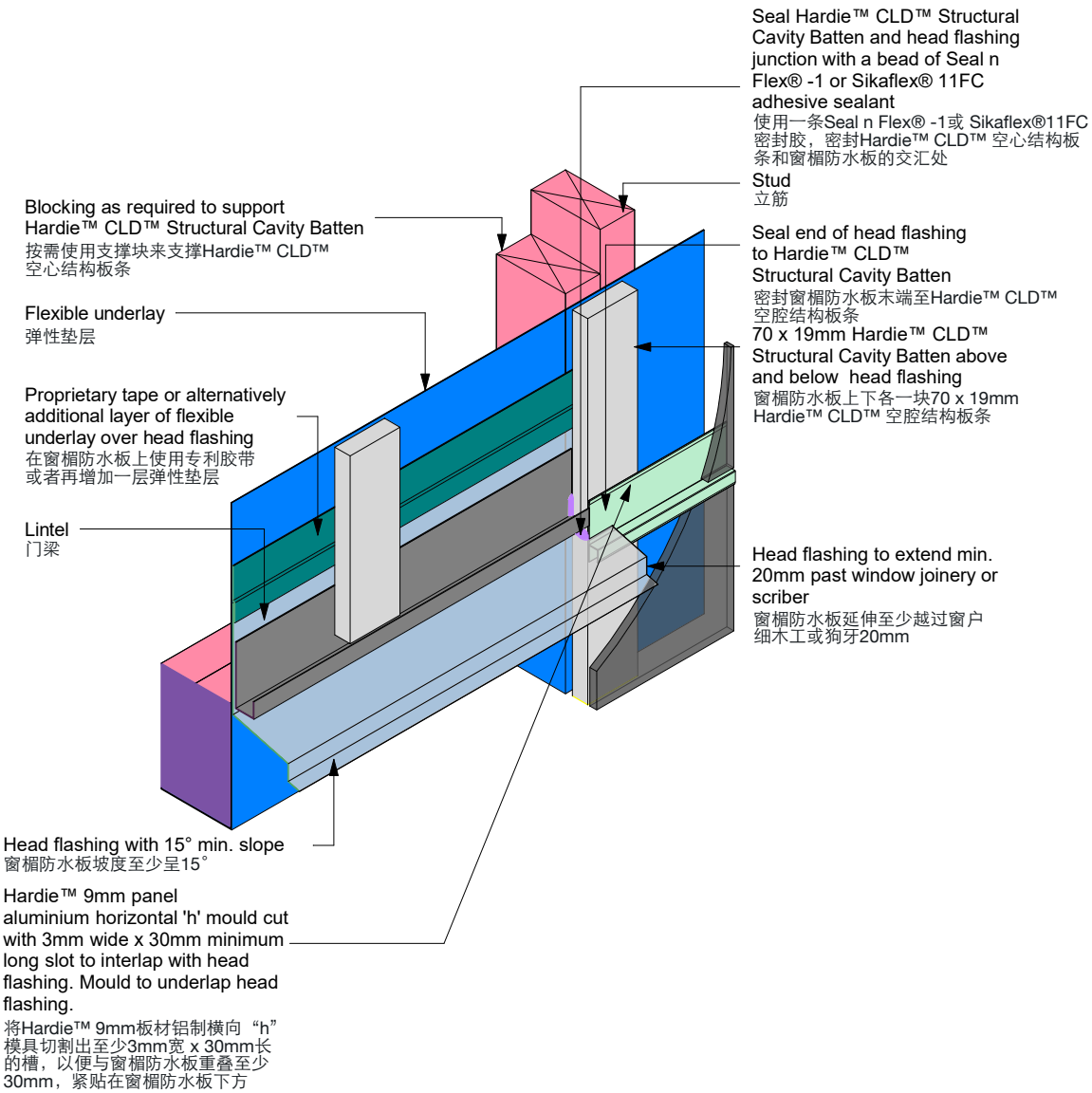


Figure 42: Angle ‘T’ socket at window head | 图42：窗楣处的“T”型角接口接缝件

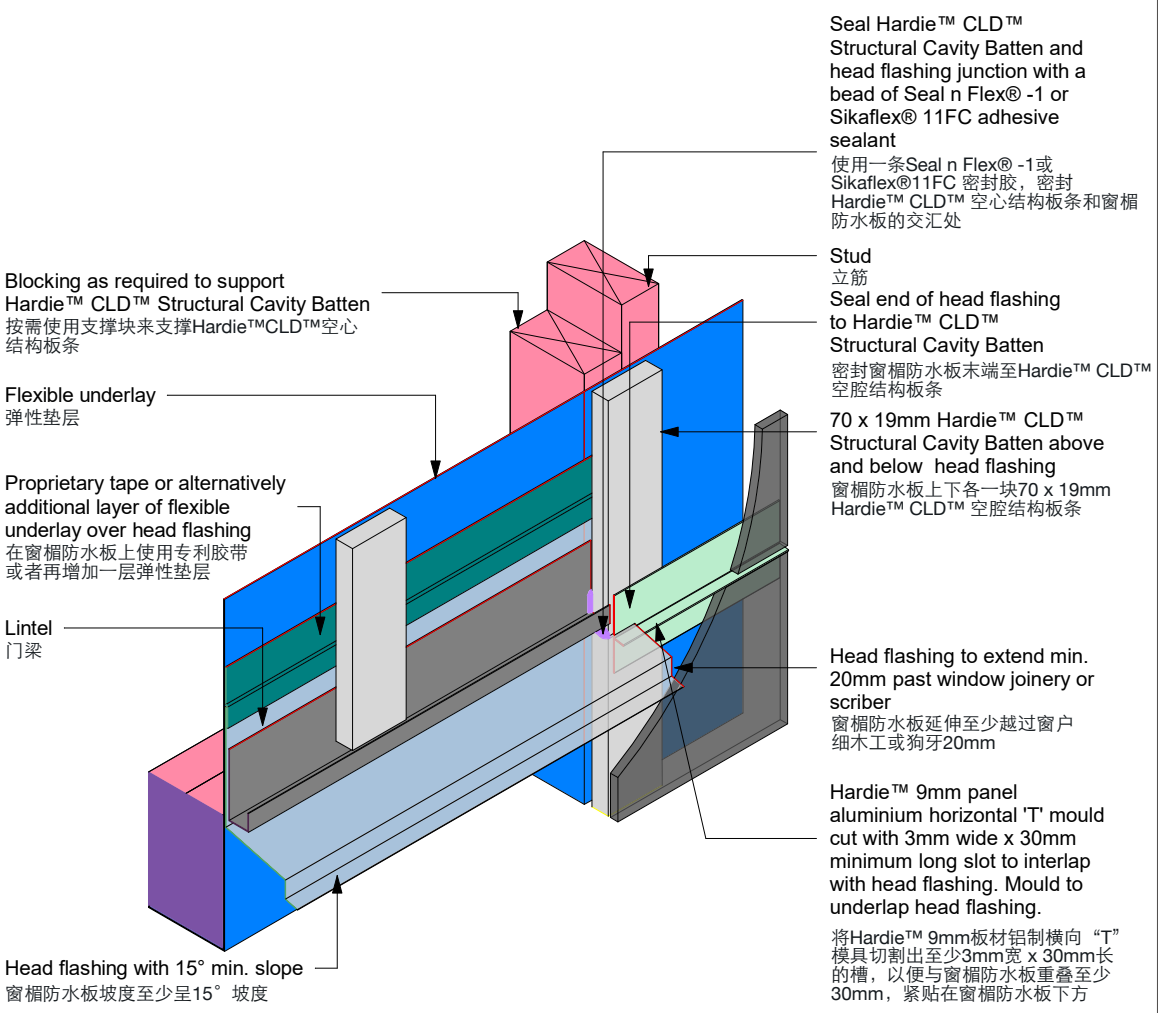


Figure 43: Horizontal flashing at window head | 图43：窗楣处的横向防水板

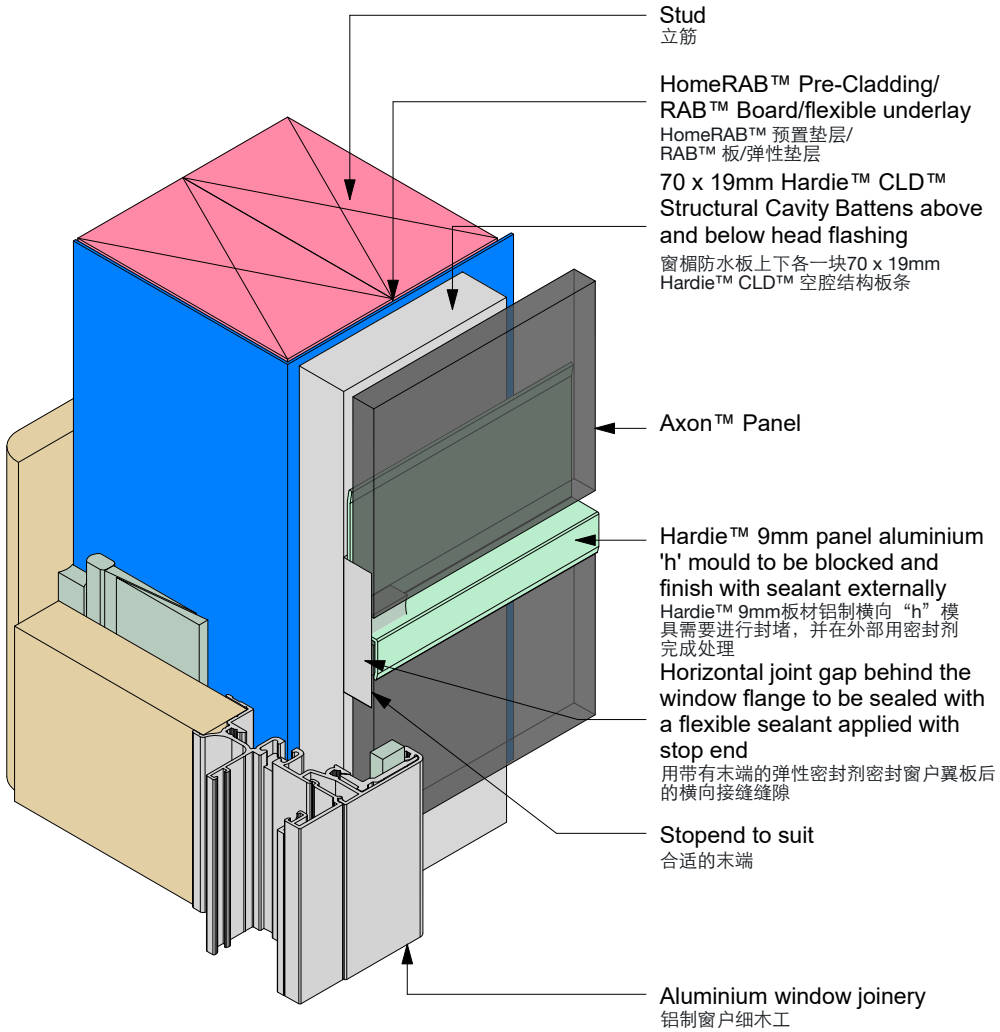


Figure 44: Angle ‘T’ socket butting window jamb
图44：与窗框对接的“T”型角接口

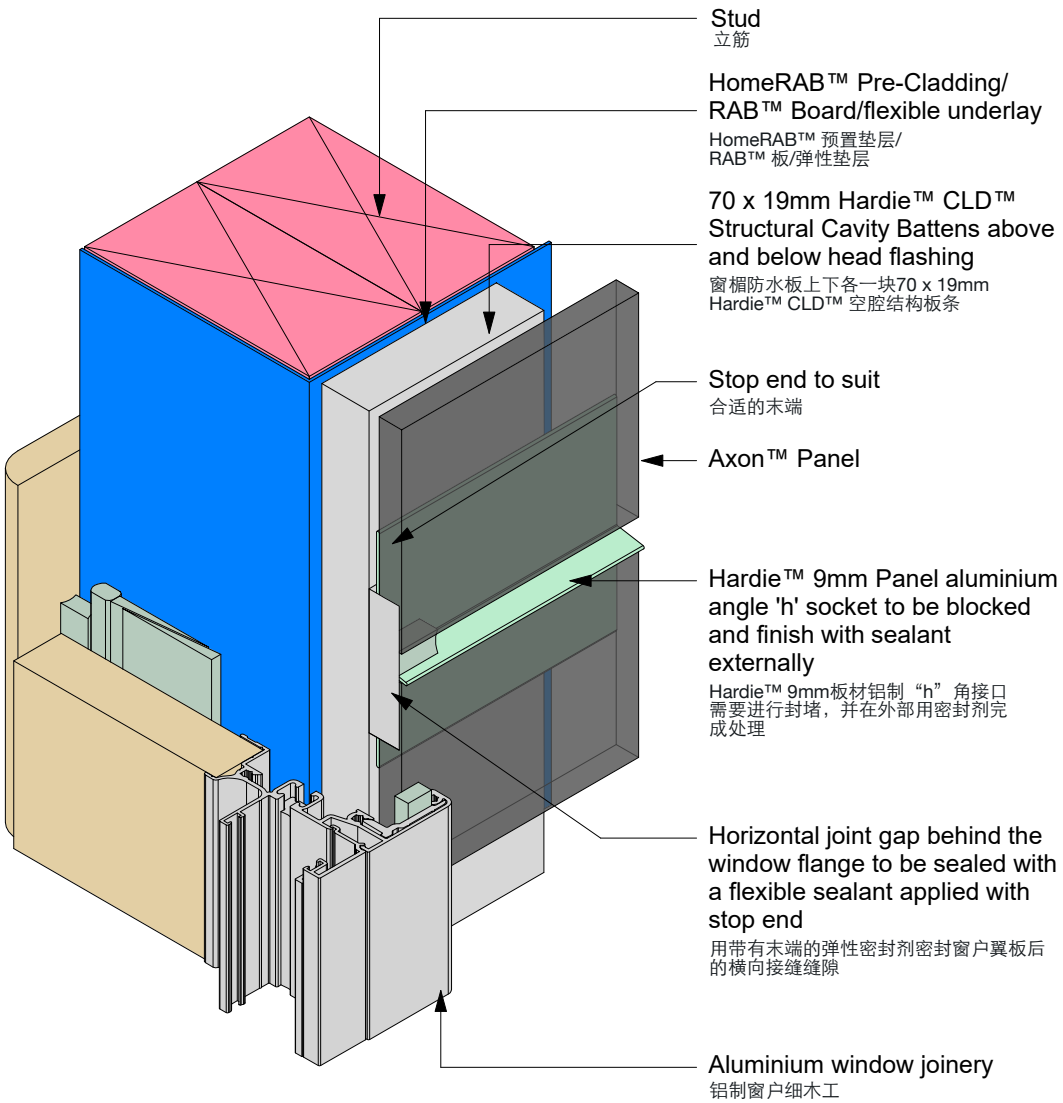
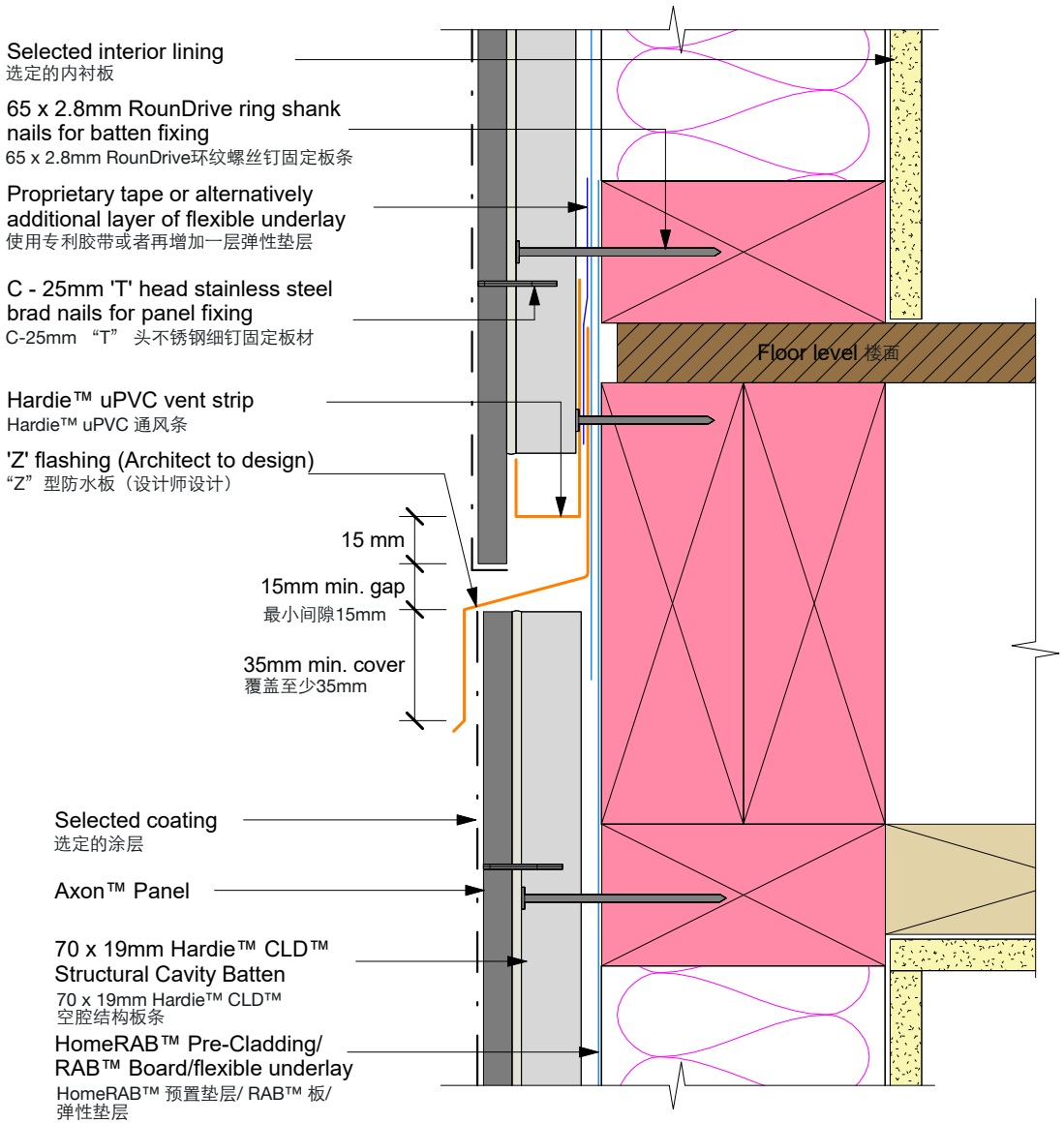


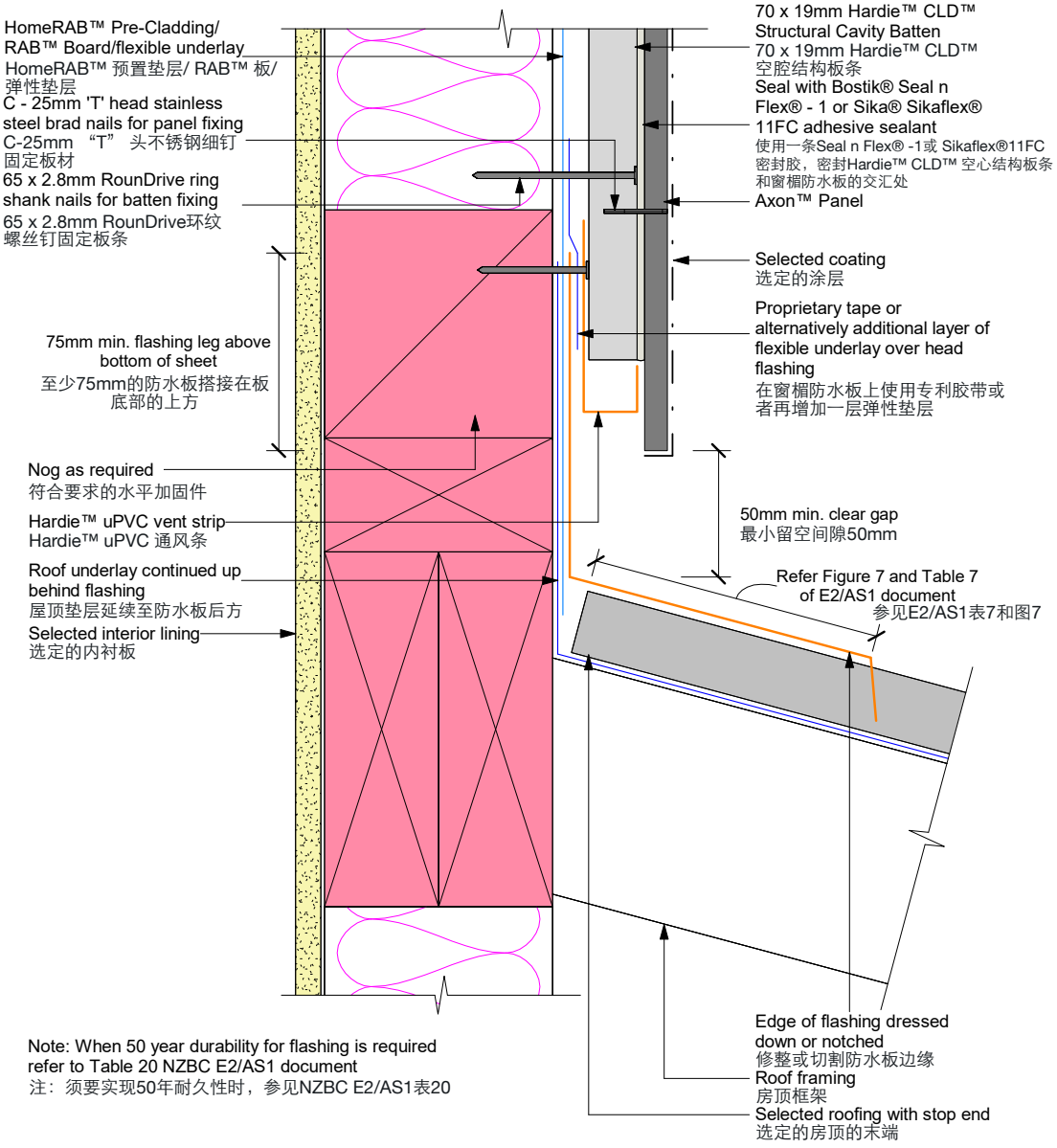
Figure 45: Drained flashing joint at floor joist | 图45: 地板龙骨高度排水防水接缝



Note:
注意：

- Check architect's plans for the type of flashing to be used.
  查看设计师规划确定需要使用的防水板种类。
- Cut edges need to be primed with sealer.
  切割边缘须使用密封胶预处理。
- When 50 year durability is required refer Table 20 E2/AS1.
  须要实现50年耐久性时，参见NZBC E2/AS1表20。
- The flashing to be placed in the centre of the floor joists. Do not fix Hardie™ CLD™ Structural Cavity Battens or panels into floor joists.
  防水板须置于地板龙骨中央。不要将Hardie™ CLD™ 空腔结构板条或板材固定至地板龙骨。
- The joint can be placed anywhere within the floor joist area.
  接缝件可以放置在地板龙骨区域内的任何地方。

Figure 46: One piece apron flashing joint
图46: 屋顶斜坡与墙面之间的一体式防水板接缝



Note: When 50 year durability for flashing is required refer to Table 20 NZBC E2/AS1 document
注：须要实现50年耐久性时，参见NZBC E2/AS1表20

Figure 47: Enclosed deck balustrade to wall junction - Aluminium internal corner
图47：封闭式阳台栏杆与墙体交汇处 – 铝制阴角

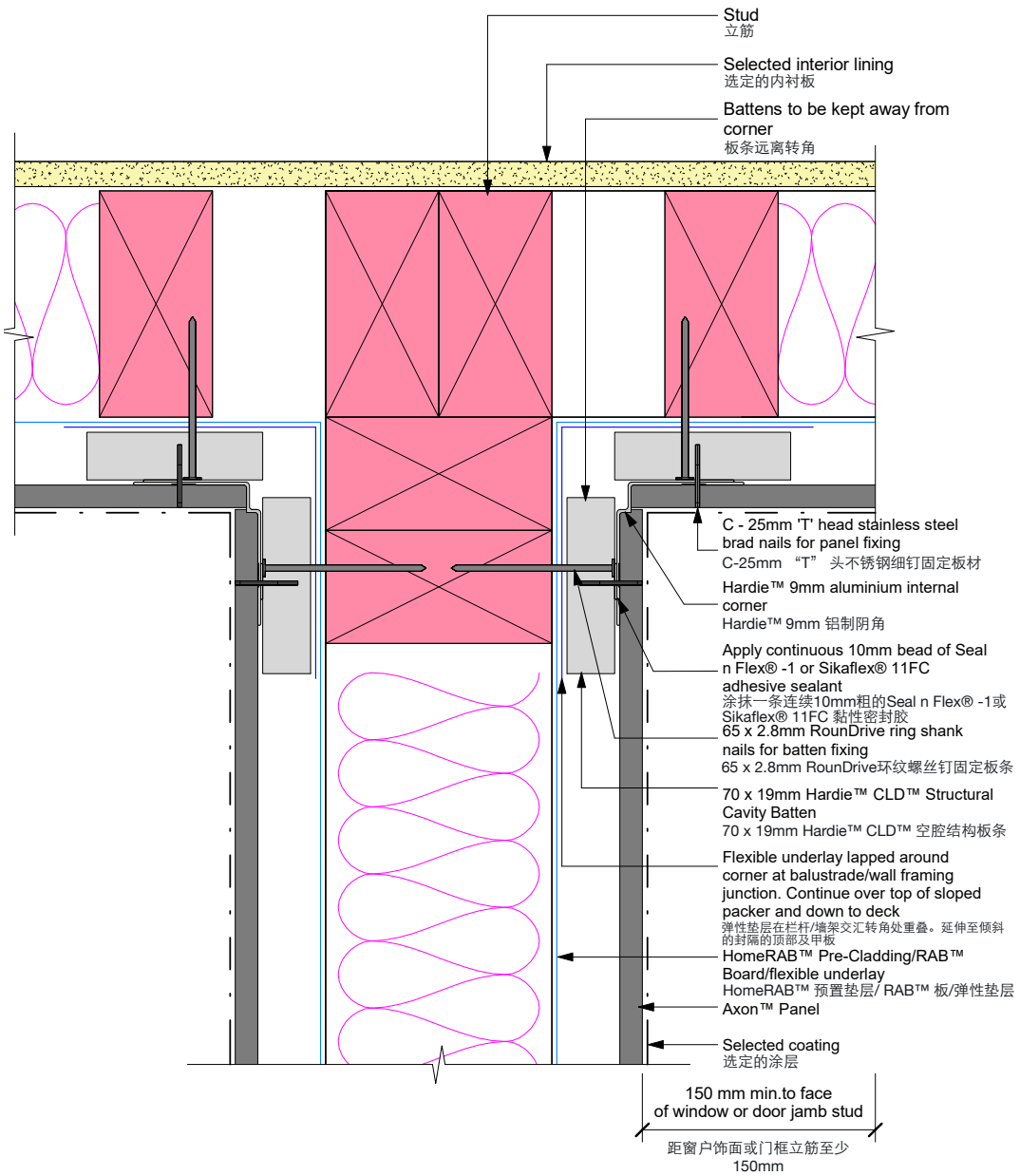
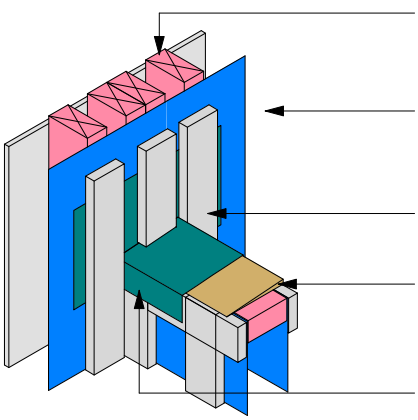


Figure 48: Enclosed deck ballustrade to wall junction
图48: 封闭式阳台栏杆与墙体交汇处



Stud
立筋

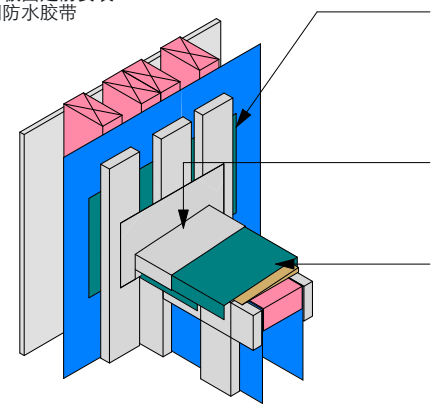
HomeRAB™ Pre-Cladding/ RAB™ Board/ flexible underlay
HomeRAB™ 预置垫层/ RAB™ 板/弹性垫层

70 x 19mm Hardie™ CLD™ Structural Cavity Batten
70 x 19mm Hardie™ CLD™ 空腔结构板条

Sloping packer
倾斜的封隔

Flexible flashing tape dressed up and adhered to flexible underlay behind battens
弹性防水胶带修整并粘贴到板条后方的弹性垫层

Batten and Flashing Tape Application Prior to Metal Flashing Fixing
在金属防水板固定前安装板条并使用防水胶带



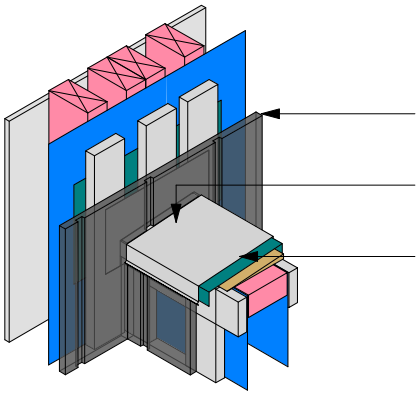
Flexible flashing tape dressed up and adhered to HomeRAB™ Pre-Cladding/ RAB™ Board/flexible underlay behind battens
弹性防水胶带修整并粘贴到板条后方的HomeRAB™ 预置垫层/RAB™ 板/弹性垫层

Rivet and seal capping to saddle flashing across top
在顶部安装铆钉并密封，覆盖马鞍式防水板的上方

Flexible flashing tape to extend min 50mm down face of battens
弹性防水胶带至少延伸50mm至板条的表面

Cladding omitted for clarity
为图示明确忽略外墙板

Saddle Flashing Application Prior to Cladding and Cap Flashing Fixing
在外墙板和顶帽防水板固定前安装马鞍式防水板



Axon™ Panel

5mm gap between cladding and top of parapet flashing. Seal with flexible sealant
外墙板和矮墙防水板顶部间隙5mm。使用弹性密封胶密封

Parapet flashing with underlay
矮墙防水板和垫层

Figure 49: Parapet flashing | 图49: 矮墙防水板

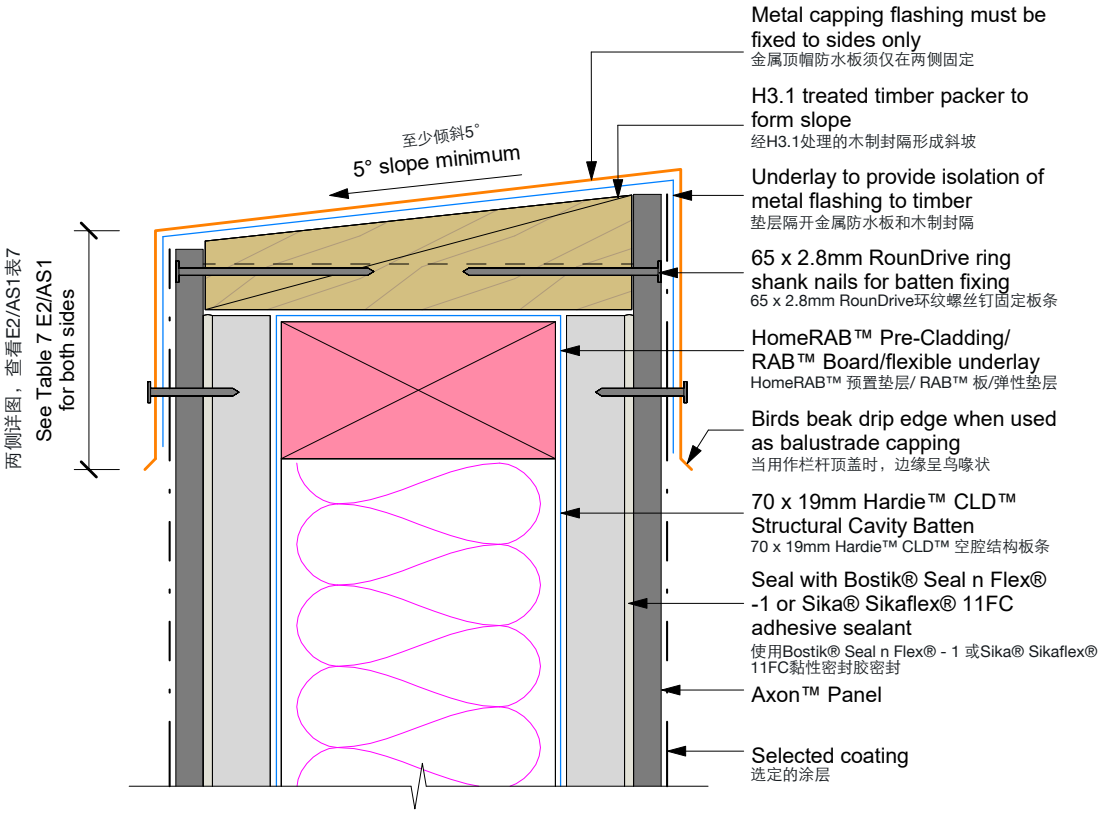


Figure 50: Garage door jamb | 图50: 车库门框

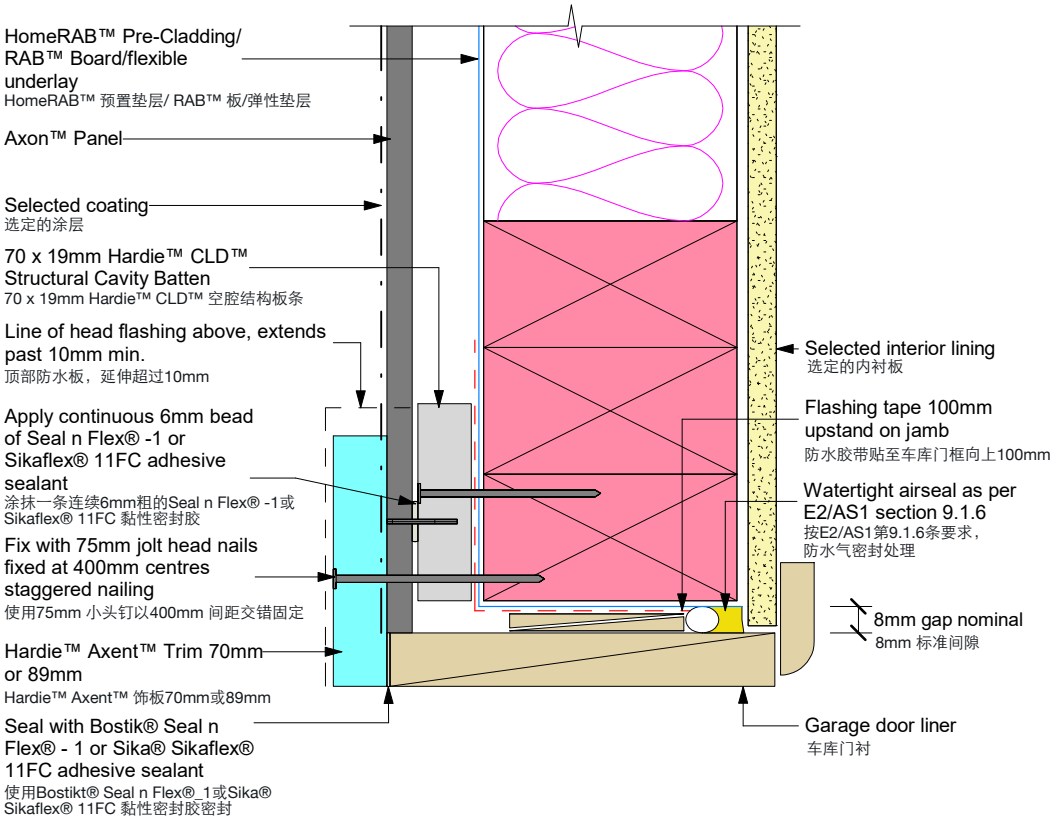
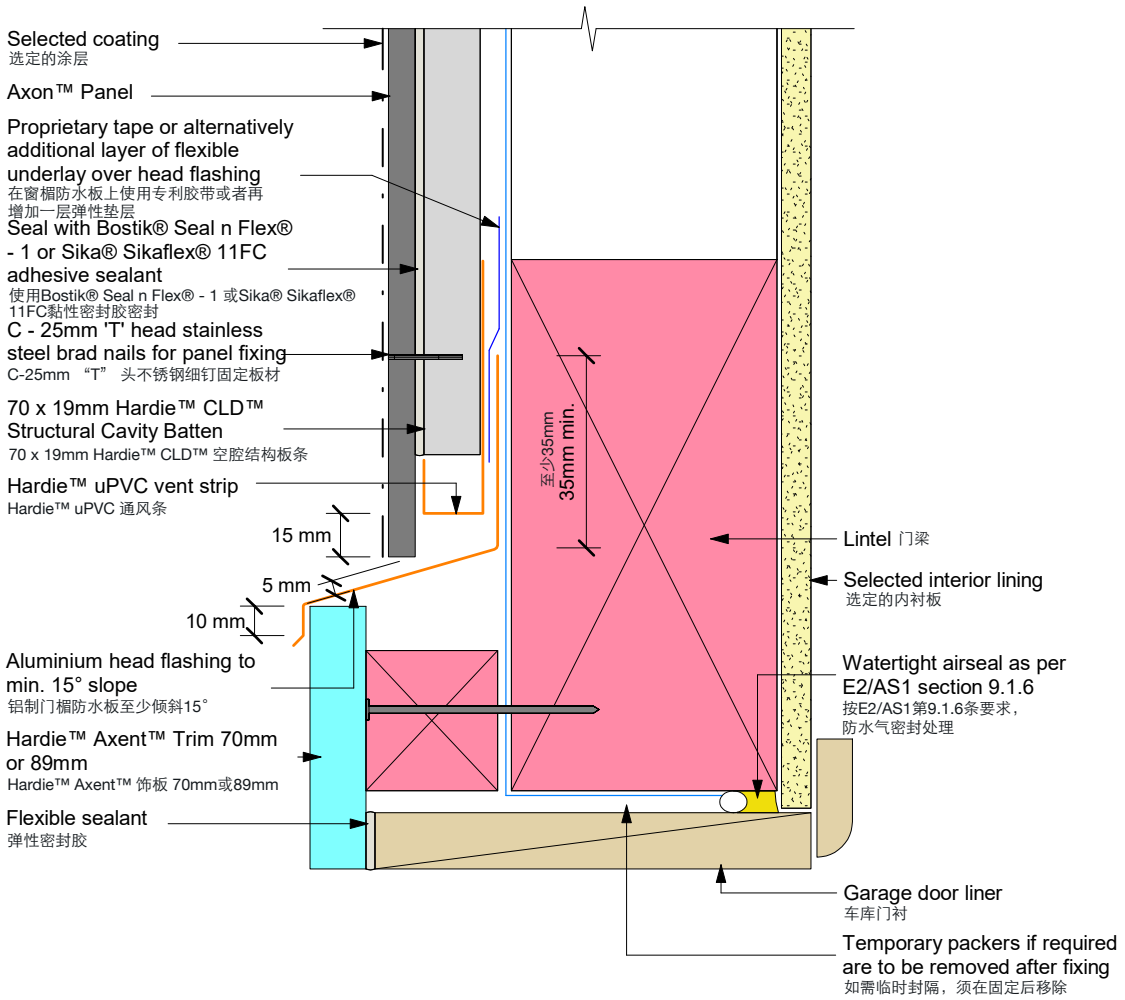


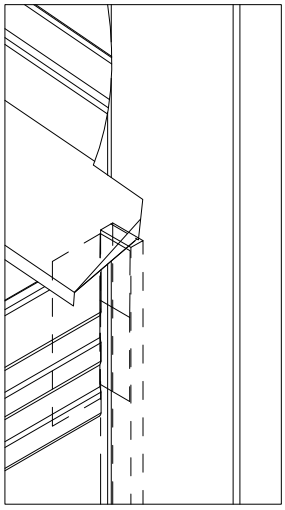
Figure 51: Garage door head | 图51: 车库门楣

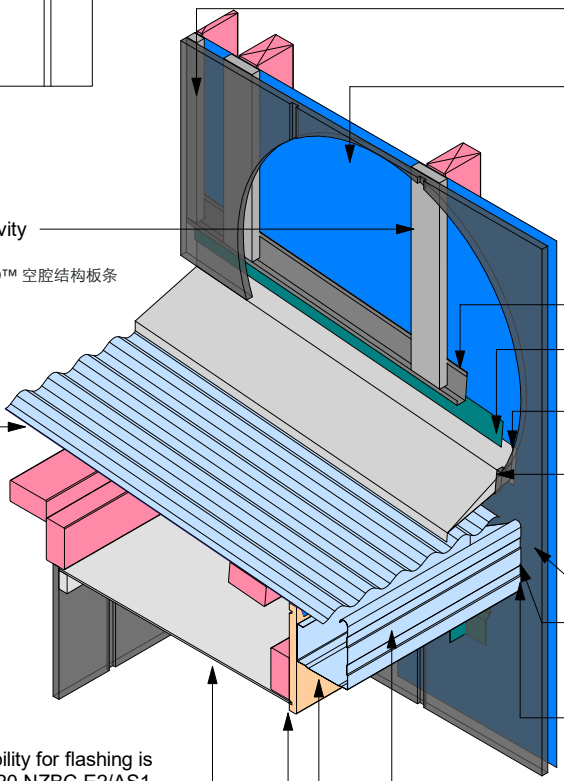


- Sealant must be applied between head flashing and Hardie™ Axent™ Trim in VH and EH wind zones
  在VH和EH风区，门楣防水板和Hardie™ Axent™ 饰板之间须使用密封胶
- Site cut edges to be primed
  现场切割的边缘须预涂底漆

Figure 52: Junction between panel and fascia board
图52: 板材和屋顶顶角线板的交汇处

interactive assembly instructions available
http://wksp.nz/jh-axn-rfw
Get **WORKING**SPEC from Apple App Store/Google Play





Axon™ Panel

HomeRAB™ Pre-Cladding/ RAB™ Board/flexible underlay
HomeRAB™ 预置垫层/ RAB™ 板/弹性垫层

70 x 19mm Hardie™ CLD™ Structural Cavity Batten
70 x 19mm Hardie™ CLD™ 空腔结构板条

Hardie™ uPVC vent strip
Hardie™ uPVC 通风条

Flashing tape or extra layer of flexible underlay over flashing
弹性胶带或在防水板上增加一层弹性垫层

Flashing upstand behind flexible underlay
弹性垫层后方防水板

Selected roofing
选定的屋顶

*Apron flashing with tapered stopend. Cladding to be carefully cut over stop end and sealed
*屋顶斜坡与墙面之间的防水板的锥形尾端。在尾端小心切割并密封

Batten behind 后方板条

50 x 50mm metal/uPVC corner flashing fitted over cavity batten and under fascia board.
50 x 50mm 金属/uPVC 转角防水板，安装在板条上并位于顶角线板下方

Packing rod and sealant between end of fascia and Axon™ Panel
在顶角线板末端与Axon™ Panel之间放置填充杆和密封胶

End of spouting must be 10mm min. clear of finished Axon™ Panel
排水管的末端必须与完工的Axon™ Panel保持至少10mm的间隙

Selected spouting
选定的排水管

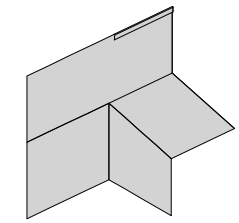
Fascia board
屋顶顶角线板

Soffit
拱腹

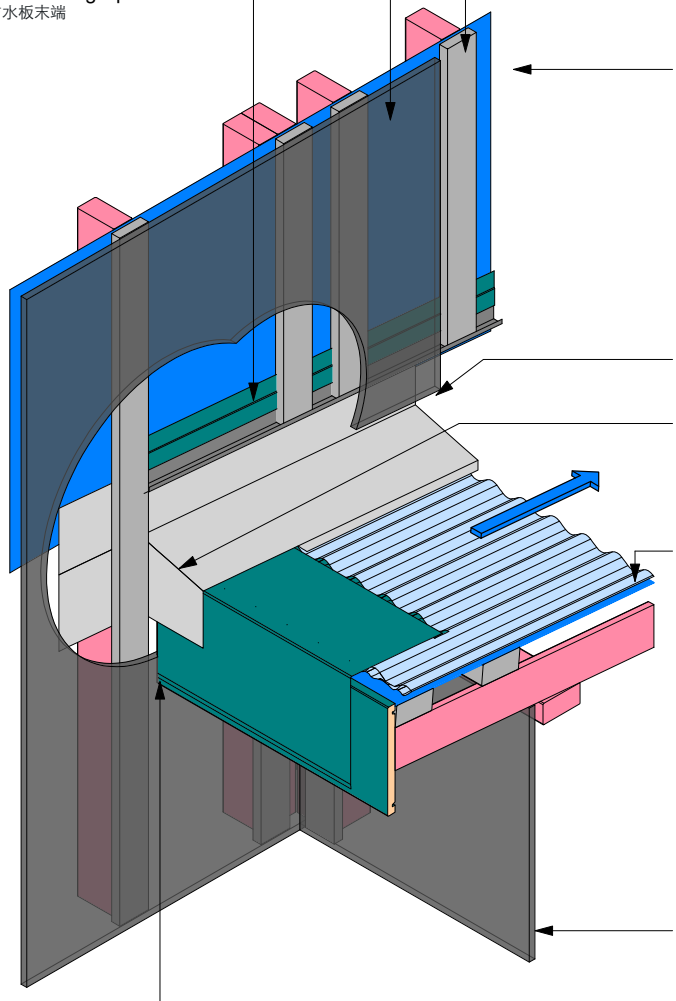
*When 50 year durability for flashing is required refer Table 20 NZBC E2/AS1 document
须要实现50年耐久性时，参见NZBC E2/AS1表20

Note: Site cut edges to be primed
注：现场切割边缘须涂底漆

Figure 53: Enclosed roof to wall intersection | 图53: 封闭屋顶与墙体的交汇处



Saddle Flashing Apron End
鞍座防水板末端



Flexible flashing tape dressed up and adhered to HomeRAB™ Pre-Cladding/RAB™ Board/ flexible underlay
弹性防水胶带经过修整并粘附在HomeRAB™ 预置垫层/RAB™ 板/ 弹性垫层

Axon™ Panel

70 x 19mm Hardie™ CLD™ Structural Cavity Batten
70 x 19mm Hardie™ CLD™ 空腔结构板条

HomeRAB™ Pre-Cladding/ RAB™ Board/flexible underlay
HomeRAB™ 预置垫层/ RAB™ 板/弹性垫层

Cladding clearance 50mm
外墙板间隙50mm

Purpose made rivet and seal capping to saddle flashing across top and down sides Upstand at end
在顶部安装铆钉并密封，覆盖马鞍式防水板的顶部和两侧末端立起

Selected roofing
选定的屋顶

Axon™ Panel

Packing rod and sealant between end of fascia and Axon™ Panel
在顶角线板末端与Axon™ Panel之间放置填充杆和密封胶

Figure 54: Cavity batten layout for heights over 10m
图54：高于10m的空腔板条布局

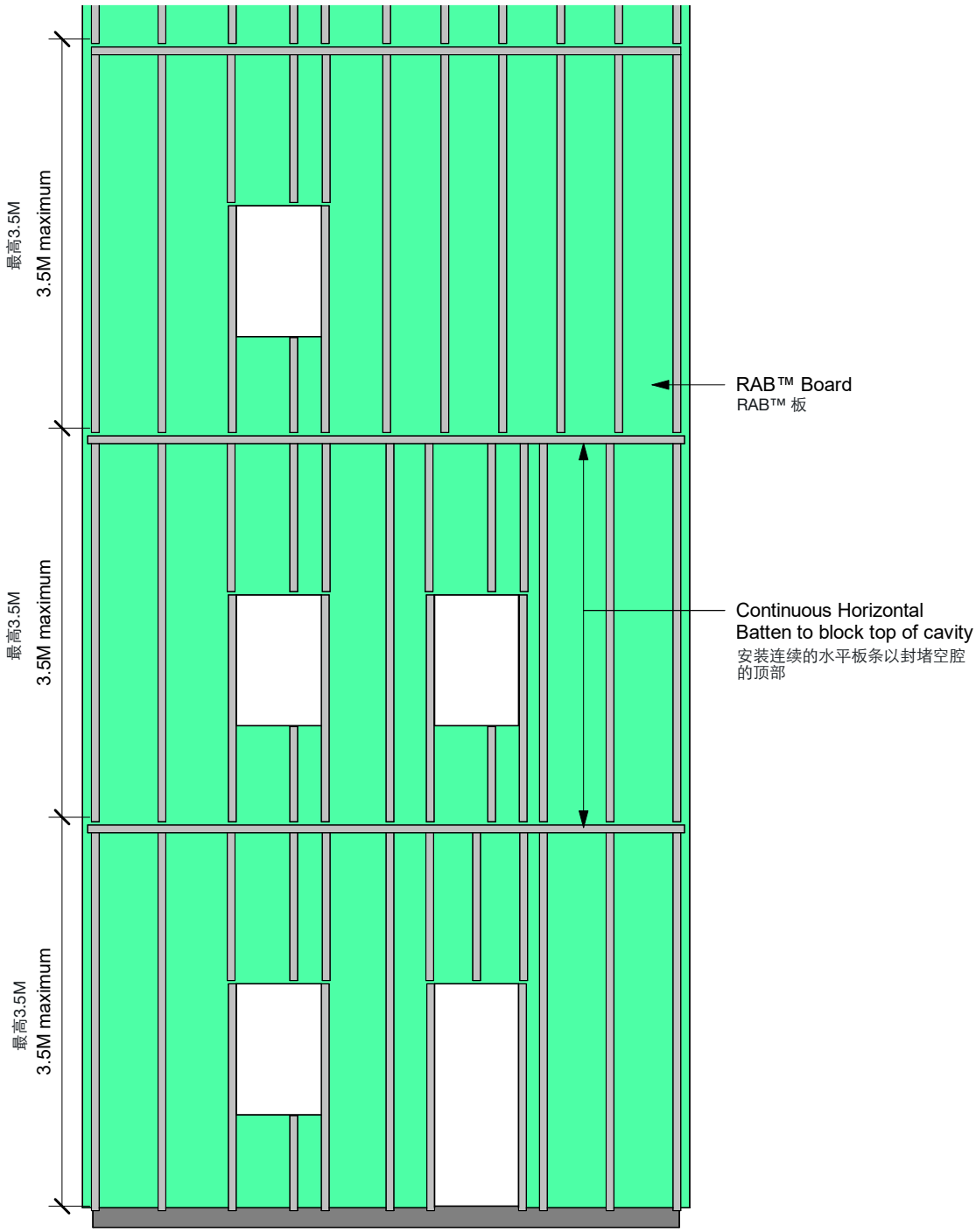
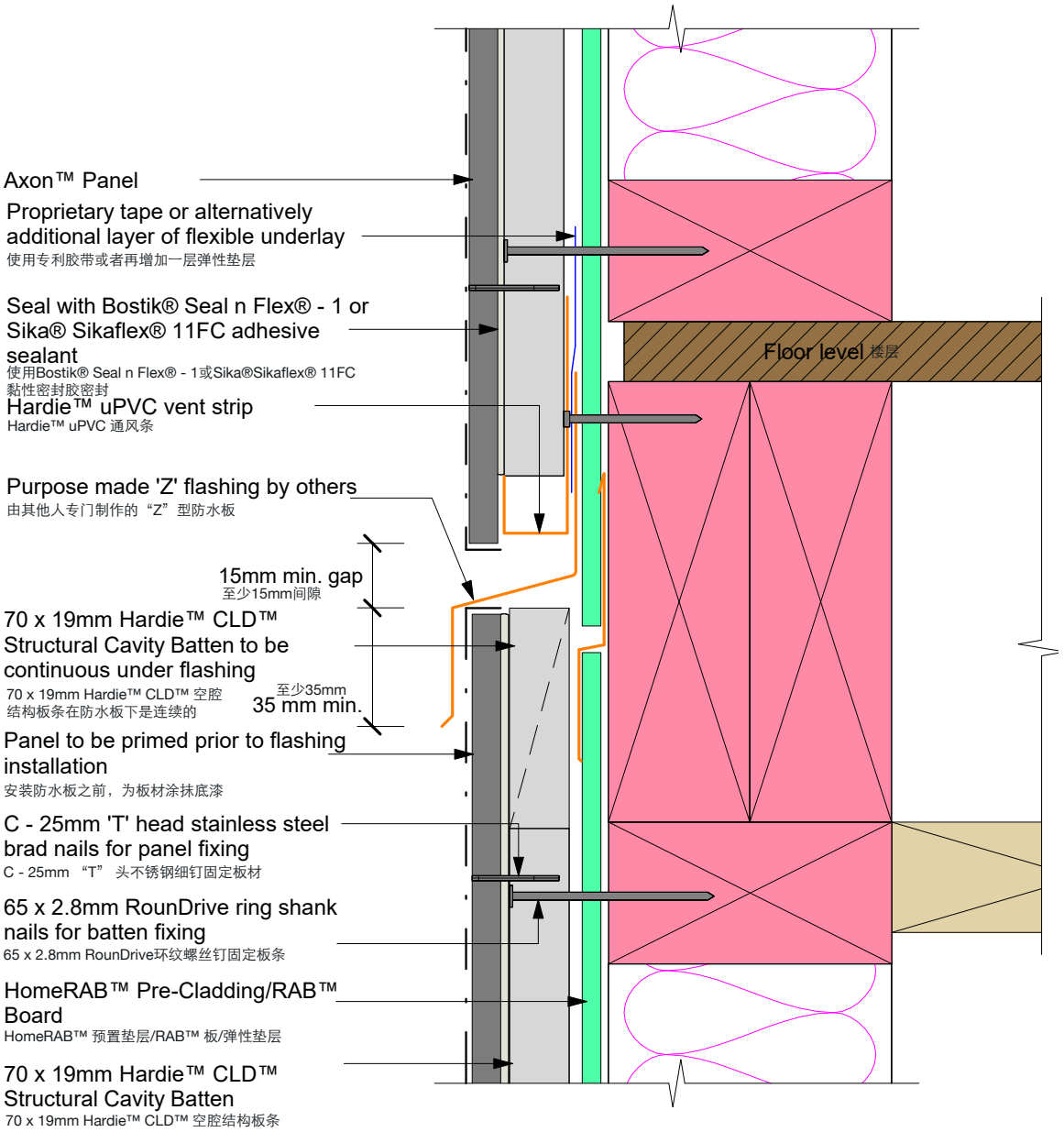


Figure 55: Cavity fire barrier for heights over 10m | 图55：高于10m的空腔防火屏障



Note:
注意：

- Check architect's plans for the type of flashing to be used.
  查看设计师规划确定需要的防水板种类。
- Cut edges need to be primed.
  查看设计师规划确定需要的防水板种类。
- The flashing to be ideally placed in the centre of the floor joists.
  理想情况下，防水板应放置在地板龙骨中心。
- For further information about cavity barriers, refer to paragraph 5.8.5 of C/AS2 of the NZBC.
  查看空腔防火屏障的更多信息，参见NZBC C/AS2图5.8.5

Notes

Product Warranty
产品质保

NEW ZEALAND I Effective August 2024
新西兰 I 版：2024年8月起生效

This warranty is given by James Hardie New Zealand Limited ("James Hardie", "we", "its" and "us").

本质量保证由James Hardie新西兰有限公司（简称"James Hardie"、"我们"和"其"）

In this warranty:

在此质量保证中：

- ***"Consumer"*** has the meaning given to it in the Consumer Guarantees Act;

  "消费者" 指根据《消费者保护法》定义的含义；

- ***"Product"*** refers to the item listed below:

"产品" 指下述产品：

Axon™ Panel

- ***"Technical Literature"*** means the Product specific installation guide published by James Hardie at the time of installation of the product (copies of the current installation instructions are available at jameshardie.co.nz or by calling Ask James Hardie™ on 0800 808 868); and

"技术手册" 指在产品安装时James Hardie发布的特定产品安装说明（当前安装说明的副本可在 jameshardie.co.nz查阅或通过拨打0800 808 868联系Ask James Hardie获取）；以及

- ***"Warranty Period"*** means fifteen (15) years.

"质保期" 指十五（15）年

Warranty
质量保证

1. Subject to the conditions and limitations set out below, we warrant that for the Warranty Period from the date of purchase, the Product will be free from defects due to defective factory workmanship or materials.

   在下述条件和限制的基础上，我们保证自购买之日起的保修期内，产品不会出现由于做工或材料问题导致的产品缺陷。

2. James Hardie further warrants that for a period of 15 years from the date of purchase of the Product that any associated accessories supplied by us will be free from defects due to defective factory workmanship or materials.

   James Hardie进一步保证，自产品购买之日起15年内，我们提供的任何相关配件不会因做工或材料问题而产生缺陷。

3. James Hardie warrants that at the time of manufacture the Product will comply with AS/NZS 2908.2:2000 Cellulose-cement products - Flat sheet.

   James Hardie保证，在制造时，产品将符合AS/NZS 2908.2:2000"纤维水泥产品"的标准。

4. This warranty is not transferable and is only provided to and may only be relied upon by:

   本保修不可转让，仅适用于以下人员：

   (a) the first purchaser of the Product or accessory from James Hardie; and

   从James Hardie处首次购买产品或配件的买方；以及

   (b) the last purchaser of the Product or accessory prior to installation.

   安装前最后一次购买产品或配件的买方。

5. If a breach of this warranty occurs, we will (at our option) either: supply replacement Product or accessory; rectify the affected Product or accessory; or pay for the reasonable and substantiated cost of the replacement or rectification of the affected Product or accessory.

   如果发生本质保条款的违约，我们将（根据我们的选择）提供替换产品或配件；修复受影响的产品或配件；或支付替换或修复受影响产品或配件的合理且已证实的费用。

Warranty Conditions
质保条件

6. You may only claim under this warranty if:

您只能在以下情况下根据此质保提出索赔：

(a) the Product was installed and maintained strictly in accordance with the Technical Literature including the components or products specified or recommended in the Technical Literature; and

产品的安装和维护严格按照技术手册的要求进行，包括技术手册中规定或推荐的组件或产品；

(b) other products applied to or used in conjunction with the Product are applied or installed and maintained strictly in accordance with the relevant manufacturer's instructions and good trade practice; and

其他与产品一起使用或应用的产品必须严格按照相关制造商的说明和良好的行业规范进行安装和维护；

(c) the Product is used in an application designed and constructed in strict compliance with all relevant provisions of the New Zealand Building Code (**"NZBC"**), applicable laws, regulations and standards; and

产品的使用必须符合所有相关的新西兰建筑规范（**"NZBC"**）、适用的法律、法规和标准，并在严格遵守这些规定的前提下进行设计和建造；

(d) we are given reasonable opportunity to inspect the Product **before** any attempt is made to repair or remove the Product once it has been installed; and

产品安装后，在做任何修理或移除产品的尝试之前，我们应有合理的机会对产品进行检查；

(e) the requirements for bringing a claim under the warranty as set out in clause 8 are complied with.

按照第8条规定的要求提出保修索赔。

7. Subject to clauses 10 and 11:

在遵守第10条和第11条的前提下：

(a) to the fullest extent permitted by law, we exclude all:

在法律允许的最大范围内，我们排除所有以下内容：

括财产损失或人身伤害、后果性损失、经济损失或利润损失，因产品及其技术手册的购买或使用而产生的，不论是基于合同、侵权（包括过失）、法令或衡平法。

(b) if or to the extent that it is not permitted by law to so limit our liability as set out in clause 7(a), then to the fullest extent permitted by law, we limit our liability at our option to:

如果或在法律不允许按照第7(a)条规定限制我们的责任的情况下，那么在法律允许的最大范围内，我们选择以下方式限制我们的责任：

(i) the replacement of the Product or accessory or the supply of equivalent Product or accessory;

更换产品或配件，或提供同等的产品或配件；

(ii) the repair of the Product or accessory;

修理产品或配件；

(iii) the payment of the reasonable and substantiated cost of replacing the Product or accessory, or of acquiring equivalent Product or accessory; or

支付更换产品或配件的合理和有据的费用，或获取同等产品或配件的费用；或

(iv) the payment of the reasonable and substantiated cost of having the Product or accessory repaired;

支付修理产品或配件的合理和有据的费用；

(c) this warranty does not cover defects which are not due to defective factory workmanship or materials, including but not limited to damage or defects caused by or arising from or attributable to:

本保修不包括因非做工或材料缺陷引起的缺陷或损坏，包括但不限于以下原因或情形：

(i) use of the Product in applications not recommended by us or in accordance with the Technical Literature;

将产品用于我们不建议的应用或不符合技术手册要求的应用；

(ii) the Product being subjected to abnormal treatment including impact, abrasion or mechanical action;

产品受到异常处理，包括冲击、摩擦或机械作用；

(iii) surface marking, scratches or stains arising during or after the installation of the Product;

在安装过程中或安装后产生的表面标记、划痕或污渍；

(iv) poor workmanship or installation, poor design or detailing, settlement or structural movement and/or movement of materials to which the Product is attached;

施工质量差、安装不当、设计或细节差、沉降或结构移动和/或产品附着材料的移动；

(v) incorrect design of the structure;

结构设计错误；

(vi) acts of God including but not limited to earthquakes, fire, cyclones, floods or other severe weather conditions or unusual climatic conditions;

不可抗力事件，包括但不限于地震、火灾、气旋、洪水或其他严重天气条件或异常气候条件；

(vii) efflorescence, normal wear and tear, growth of mould, mildew, fungi, bacteria, or any organism on any Product surfaces or Product (whether on the exposed or unexposed surfaces);

盐霜、正常磨损、霉菌、霉斑、真菌、细菌或任何有机物在产品表面或产品上的生长（无论是在暴露面还是未暴露面）。

(viii) contact with chemicals such as solvents, detergents and pollutants, or exposure to a harsh chemical environment or an excessively salty environment;

接触化学物质，如溶剂、清洁剂和污染物，或暴露在恶劣的化学环境或过度盐分的环境中；

(ix) use of adhesive tapes, sealants or mastics on the Product, or recoating of the surface of the Product outside of the recommended maintenance guidelines in the Technical Literature; or

在产品上使用胶带、密封剂或密封胶，或在不符合技术手册中推荐的维护指南的情况下对产品表面进行重新涂层；或

(x) failure of third party coating systems, including but not limited to sealers and paints; and

第三方涂层系统的失效，包括但不限于密封剂和油漆；或

(xi) **this warranty does not cover** any variation in the look of the Product including but not limited to: any variation in colour or surface pattern; any variation between different batches of the Product; or any variation against any sample material provided. The architect/builder/installer must ensure **prior to specification** that variation in look between items of Product is acceptable and ensure that each item of Product meets all aesthetic requirements **prior to installation.** Subject to the terms of this warranty, after installation of the Product, **we are not liable** for claims arising from aesthetic variations or defects if such variations or defects were, or would upon reasonable inspection have been, **apparent prior to installation.**

本保修不涵盖产品外观的任何变化，包括但不限于：颜色或表面图案的任何变化；不同批次产品之间的任何差异；或与提供的样品材料之间的任何差异。建筑师、建造者、安装者必须在规范之前确保产品外观之间的差异是可以接受的，并确保每件产品在安装前满足所有美学要求。根据本保修条款，产品安装后，如果外观变化或缺陷在安装前显而易见或通过合理检查可以察觉，我们不对因外观变化或缺陷引起的索赔负责。

Making a Claim Under Warranty
质保索赔

If you are the property owner and did not purchase the product yourself, and you believe you have any issue with James Hardie product installed at your home, in the first instance you should contact the builder who purchased and installed the product. If you purchased the product yourself, you can make a claim under this warranty as detailed below.

如果您是房主但并未自行购买该产品，并且您认为James Hardie安装在您家中的产品存在任何问题，首先您应联系购买并安装该产品的建筑商。如果您是自行购买该产品的，您可以按照以下详细说明提出保修索赔。

8. In order to make a claim under this warranty, you must provide the following information in writing to us using the contact details below within 30 days after the alleged defect would have become reasonably apparent or, if the defect was reasonably apparent prior to installation, then the claim must be made prior to installation:

   如需提出保修索赔，您必须在发现或应合理发现该缺陷后30天内，或在缺陷于安装前已合理显现时，在安装前提出索赔，并通过以下联系信息以书面形式向我们提供以下信息：

   (a) proof of purchase;

   购买证明；

   (b) description of the defect and the issue;

   缺陷和问题的描述；

   (c) photographs of the defect; and

   缺陷的照片；以及

   (d) your contact details.

   您的联系信息。

9. Subject to New Zealand Consumer Law, you must bear any expenses you incur as a result of claiming under this warranty, except where you are entitled to recover such expenses under the New Zealand Consumer Law, in which case we will bear or otherwise reasonably compensate you for such expenses. All claims for such expenses are to be notified to us in writing within 21 days from the later of: when you make a claim under this warranty; or when we notify you that we, acting reasonably, accept responsibility for these expenses.

   根据新西兰消费者法，您必须承担因保修索赔而产生的任何费用，除非您有权根据新西兰消费者法收回此类费用，在这种情况下，我们将承担或以其他方式合理补偿您此类费用。所有此类费用的索赔必须在以下情况后的21天内以书面形式通知我们：您提出保修索赔之日或我们通知您我们合理地承担此类费用之日，以较晚者为准。

New Zealand Consumer Law
新西兰消费者法

10. If you acquire the Product or accessories manufactured or supplied by us as a Consumer, that Product or accessories may come with guarantees that cannot be excluded under the Consumer Guarantees Act. If so, and we are a supplier, you are entitled to a replacement or refund for a failure of a substantial character or a failure that cannot be remedied, and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality or fail to meet some other guarantee and can be remedied and the failure is not of a substantial character. Where we or a related entity are the manufacturer, then you will have the rights set out in the Consumer Guarantees Act if the goods do not comply with this warranty or the consumer guarantees under the Consumer Guarantees Act.

    如果您作为消费者购买了我们生产或供应的产品或配件，该产品或配件可能会附带《消费者保护法》下不可排除的保证。如果是这样，作为供应商的我们，您有权在出现重大缺陷或无法修复的缺陷时，获得更换或退款，并对其他合理可预见的损失或损害进行赔偿。如果产品未能达到可接受的质量标准或未能满足其他保证要求，并且该缺陷可以修复且不属于重大缺陷，您也有权要求修理或更换商品。如果我们或相关实体是生产商，您将依据《消费者保护法》的规定享有权利，如果商品未符合本保修条款或《消费者保护法》下的消费者担保。

11. Other than as lawfully excluded or limited by the other terms of this warranty, any rights a Consumer may have under this warranty are in addition to other rights and remedies of a Consumer under a law in relation to the goods to which this warranty relates. Nothing in this warranty shall exclude or modify any legal rights a purchaser and/or Consumer may have under the Consumer Guarantees Act, Fair Trading Act or otherwise which cannot be excluded or modified at law.

    除非根据本保修的其他条款合法排除或限制，否则消费者在本保修下的任何权利均为消费者在法律上对相关商品享有的其他权利和补救措施的补充。本保修中的任何内容均不得排除或修改购买者和/或消费者在《消费者保护法》、《公平交易法》或其他法律下享有的任何法律权利，这些权利在法律上不可被排除或修改。

Disclaimer
免责声明

The recommendations in James Hardie's literature are based on good building practice but are not an exhaustive statement of all relevant information. Further, as the successful performance of the relevant system depends on numerous factors outside the control of James Hardie (e.g. quality of workmanship and design) James Hardie shall not be liable for the recommendations made in that Technical Literature and the performance of the relevant system, including its suitability for any purpose or ability to satisfy the relevant provisions of the NZBC, laws, regulations and standards. It is the responsibility of the building designer to ensure that the details and recommendations provided in the relevant James Hardie Technical Literature are suitable for the intended project and that specific design is conducted where appropriate.

James Hardie手册中的建议基于良好的建筑实践，但并非所有相关信息的详尽陈述。此外，由于相关系统的成功性能取决于众多James Hardie无法控制的因素（例如工艺质量和设计），James Hardie对该技术手册中的建议以及相关系统的性能，包括其适用性或是否符合NZBC、法律、法规和标准的要求，不承担任何责任。建筑设计师有责任确保James Hardie相关技术手册中提供的细节和建议适用于预期项目，并在适当情况下进行具体设计。

Our Contact Details
我们的联系方式

James Hardie New Zealand Limited

James Hardie 新西兰有限公司

Address: 1 O'Rorke Road, Penrose, Auckland, 1061

地址：1 O'Rorke Road, Penrose, Auckland, 1061

Postal address: PO Box 12070, Penrose, Auckland 1642

邮政地址: PO Box 12070, Penrose, Auckland 1642

Telephone: "Ask James Hardie™" on 0800 808 86

电话: "Ask James Hardie™" on 0800 808 8688

Website: www.jameshardie.co.nz

网站: www.jameshardie.co.nz

Email: info@jameshardie.co.nz

邮件: info@jameshardie.co.nz

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