Linea™ WEATHERBOARD

jameshardie.co.nz

Direct Fix
直接安装法

Technical Specification
技术规范

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This technical manual is a parallel translation. If there is any inconsistency between the English and Chinese versions, the English version shall prevail.
本技术手册为对照翻译。中英文版本如有歧义，概以英文版本为准。

Linea™ WEATHERBOARD



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我们重视您的宝贵意见!

To continue with the development of our products and systems, we value your input. Please send any suggestions, including your name, contact details, and relevant sketches to:

为持续开发、完善我们的产品及服务体系，我们非常重视您的意见，请不吝赐教。请将您的建议，包括您的姓名、详细联系方式以及相关的资料寄至:

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When specifying or installing James Hardie 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.**

当安装James Hardie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Ask James Hardie™ 0800 808 868

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1 Product Overview 产品概况

1.1 Product Information 产品信息

Linea™ Weatherboard is an external cladding System.
Linea™ 护墙板是一种外部墙板系统。

Linea Weatherboard is a 16mm thick, pre-primed bevel back fibre cement weatherboard. The bottom front edge of Linea Weatherboard is chamfered. It has tongue and groove ends for jointing and is classified as lightweight wall cladding for use in residential and commercial buildings using timber or lightweight steel-framed external walls. Linea Weatherboard is available in 135mm, 150mm and 180mm widths.
Linea 护墙板厚度为16mm，是一种预涂底漆的斜背式纤维水泥护墙板。Linea 护墙板的底部前端为倒角设计。通过榫卯方式进行连接，属于轻质外墙板，一般用于住宅和商业建筑的外墙或者轻质钢结构建筑外墙。Linea 护墙板共有135mm、150mm和180mm三种宽度。

James Hardie also has available:
James Hardie 还提供以下产品：

- Axent™ Fascia is a 16mm thick, pre-primed fibre cement product available in two lengths. It's designed to accommodate James Hardie soffit linings.
  Axent™ Fascia 封檐板，为16mm厚的预涂底漆纤维水泥板，共有两种长度选择。 用于支撑配合 James Hardie 拱腹底板。
- Axent™ Trim is a 16mm thick, pre-primed fibre cement product available in two widths. For use as decorative trims around openings and external corners.
  Axent™ Trim 饰板，为16mm厚的预涂底漆纤维水泥板，共有两种宽度选择。用于装饰开口周边和外部边角。

For fixing to a steel frame. Ask James Hardie on 0800 808 868 for specific requirements. Or refer to the James Hardie cladding to steel framing technical supplement about the installation of Linea Weatherboard to steel frame.
如需安装在钢结构上，请致电 0800 808 868 联系 James Hardie 了解具体要求。或者参考 James Hardie 钢结构墙板安装技术补充说明了解安装信息。

Table 1 表1

Linea Weatherboard and Axent Trim sizes | Linea 护墙板和 Axent Trim 饰板尺寸									
							Coverage Information 覆盖信息		
Product 产品	**Code** 编号	**Length** 长度 **(mm)**	**Width** 宽度 **(mm)**	**Thickness** 厚度 **(mm)**	**End details** 末端形状	**Effective cover** 有效覆盖长度 **(mm)**	**No. of planks/ metre height** 板数/米高 **(approx.)** (近似值)	**Mass kg/lineal m** 重量公斤/线性米 **(approx. at EMC)** (近似值 **at EMC**)	**Mass kg/m2** 重量公斤/平方米 **(approx. at EMC)** (近似值 **at EMC**)
Linea Weatherboard 135 Linea 护墙板 135mm	401844	4200	135	16	T & G 榫卯结构	105	9.5	2.62	25.70
Linea Weatherboard 150 Linea 护墙板 150mm	402533	4200	150	16	T & G 榫卯结构	120	8.3	3.1	24.93
Linea Weatherboard 180 Linea 护墙板 180mm	401847	4200	180	16	T & G 榫卯结构	150	6.7	3.57	23.92
Axent Trim 84mm 饰板 84mm	401943	2600	84	16	Square 方形	N/A	N/A	1.6	N/A
Axent Trim 100mm 饰板 100mm	401930	2600	100	16	Square 方形	N/A	N/A	1.9	N/A

The effective thickness of finished Linea Weatherboard on the wall at the lap is approximately 33 to 35mm.

在外墙安装完成后，Linea 护墙板有效厚度大约为33-35mm。

All dimensions and masses provided are approximate only and are subject to manufacturing tolerances. Linea Weatherboard is categorised as a Light Weight Wall Cladding as described in the NZS 3604.
以上所有尺寸及重量为近似值，生产过程中产生误差是正常现象。Linea 护墙板在NZS 3604规范分类中属于轻质外墙板。

1.2 Manufacturing and Classification 制造工艺及分类

The manufacturing process of Linea Weatherboard by James Hardie is ISO 9001 Certified.
James Hardie 制造 Linea 护墙板的过程经ISO 9001认证。

Linea Weatherboard is an advanced lightweight cement composite cladding manufactured using a basic composition of Portland cement, ground sand, cellulose fibre and water. The product is easily identified by the name 'Linea' printed on the back.
Linea 护墙板是一种先进的轻质合成水泥板，制造原料主要为波特兰水泥、沙子、纤维和水。本板材可以通过其背面印刷的 'Linea' 字样进行识别。

Axent Trim is an advanced lightweight cement composite cladding manufactured using a basic composition of Portland cement, ground sand, cellulose fibre and water. The trims are factory sealed and primed on all sides.
Axent Trim 饰板是一种先进的轻质合成水泥板，制造原料主要为波特兰水泥、沙子、纤维和水。饰板所有表面出厂前已经完成密封并上底漆。

Linea Weatherboard and Axent Trim products are manufactured to Australian/New Zealand Standard AS/NZS 2908.2 'Cellulose-Cement Products' (ISO 8336 'Fibre-Cement Flat Sheet'). Linea Weatherboard is classified Type A, Category 2 in accordance with AS/NZS 2908.2 "Cellulose-Cement Products".
Linea 护墙板和 Axent Trim 饰板的制造均满足澳大利亚/新西兰标准 AS/NZS 2908.2 '纤维水泥产品' (ISO 8336 'Fibre-Cement Flat Sheet') 的要求。在标准AS/NZS 2908.2 "纤维水泥产品" 中，Linea 护墙板被分类为 Type A, Category 2。

For Safety Data Sheets (SDS) visit **www.jameshardie.co.nz** and view them in the technical literature section or Ask James Hardie on **0800 808 868**.
请访问网站 **www.jameshardie.co.nz** 获取技术文档目录下的安全数据表 (Safety Data Sheets, SDS)，或者致电 James Hardie，电话号码为 **0800 808 868**。

1.3 Components and Accessories 产品组件和配件

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**	**Size 尺寸 (mm)**	**Code 编号**
	**External corner soaker 90° for Linea Weatherboards 180mm** **180mm Linea 护墙板使用的90°阳角防漏嵌条** • Aluminium 铝制 • Copper 铜制 • Stainless Steel 不锈钢	200 long 长	**301186** **301188** **301197**
	**External corner soaker 135° for Linea Weatherboards 180mm** **180mm Linea 护墙板使用的135°阳角防漏嵌条** • Aluminium 铝制	200 long 长	**301178**
	**External corner soaker 90° for Linea Weatherboards 150mm** **150mm Linea 护墙板使用的90°阳角防漏嵌条** • Aluminium 铝制 • Stainless Steel 不锈钢	170 long 长	**302820** **302821**
	**External corner soaker 90° for Linea Weatherboards 135mm** **135mm Linea 护墙板使用的90°阳角防漏嵌条** • Aluminium 铝制 • Stainless Steel 不锈钢	155 long 长	**301185** **301196**

Table 2 contd. 表 2 续

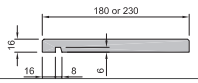
Accessories/tools supplied by James Hardie | 由 James Hardie 提供的配件/工具			
Accessories 配件	**Description 产品描述**	**Size 尺寸 (mm)**	**Code 编号**
	**External Slimline Box Corner Mould** **超薄箱型阳角覆膜** Etched primed aluminium extrusion used to create external corner 经过蚀刻的铝材，用于制造阳角	2700 long 长 4000 long 长	**301195** **305809**
	**Box Corner 'Z' Flashing** **箱角 'Z' 型防水板**	2700 long 长	**301203**
	**Internal 'W' Mould 90º** **'W' 型90º阴角覆膜** Etched primed aluminium extrustion used to create 90º internal corner 经过蚀刻的铝材，用于制造90º阴角	2700 long 长 4000 long 长	**301184** **305807**
	**Internal 'W' Mould 135º** **'W' 型135º阴角覆膜** Etched primed aluminium extrustion used to create 135º internal corner 经过蚀刻的铝材，用于制造135º阴角	2700 long 长	**301183**
	**JH Corner Under Flashing 50 x 50mm** **防水板下方的JH角覆膜 50 x 50mm** PVC moulding used as under fashing for internal and external corners 用于阴角和阳角防水板下方的PVC覆膜	3000 long 长	**303745**
	**HardieBlade™ Saw Blade** **HardieBlade™ 锯片** Diamond tip fibre cement circular saw blade. Spacers not included 纤维水泥切割圆锯片，金刚石刀头，不含垫片	4 tooth 齿 - 184mm	**300660**
	**HardieBlade™ Saw Blade** **HardieBlade™ 锯片** Diamond tip fibre cement circular saw blade. Spacers not included 纤维水泥切割圆锯片，金刚石刀头，不含垫片	6 tooth 齿 - 254mm	**303375**
	**Axent Trim 84mm** **Axent Trim 饰板 84mm**	84 x 2600 long 长	**401943**
	**Axent Trim 100mm** **Axent Trim 饰板 100mm**	100 x 2600 long 长	**401930**
	**Axent Fascia 封檐板** - 180mm - 230mm	4200 long 长	**401843** **402230**
	**Gecko Gauge** This easy to use tool gauges and supports the weatherboard for a one person install. 单人安装时用于测量和支撑护墙板的工具		**305941**

Table 3 表 3

Accessories not supplied by James Hardie

James Hardie recommends the following products for use in conjunction with its Linea Weatherboard and Axent Trim. James Hardie does not supply these products. There may also be some other accessories required depending upon the application. Please contact component manufacturer for information on their warranties and further information on their products.
James Hardie 建议在连接 Linea 护墙板和 Axent Trim 饰板时使用以下产品。James Hardie 不提供这些产品。此外，根据应用不同，可能还会用到其他配件。请咨询配件制造商关于连接产品的相关信息和质保条款。

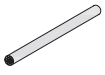
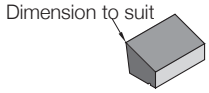
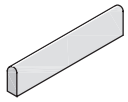
Accessories 配件	Description 产品描述	Size 尺寸 (mm)	Material/appearance 材料/外观
	**Flexible Underlay 弹性隔层** To comply with Table 23 of E2/AS1 需根据表23中E2/AS1的要求安装		
	D head or RounDrive Nail **D形头钉或环纹螺丝钉** Gun nail for concealed fixing Linea Weatherboard 使用钉枪对Linea护墙板进行隐藏式安装	50 x 2.87mm 60 x 2.87mm	Hot Dip Galvanised/ Stainless Steel 热浸镀锌/ 不锈钢
	**HardieFlex™ Hot Dip Galv. Nails 热浸镀锌钉** For concealed fixing by hand nail 使用手钉进行隐藏式安装	40 x 2.8mm 50 x 2.8mm	Hot Dip Galvanised/ Stainless Steel 热浸镀锌/ 不锈钢
	Jolt Head Nail for face fixing to Linea Weatherboard Hot Dip Galvanised or 316 Stainless Steel **使用蓬头钉**正面安装Linea**护墙板** **可选热浸镀锌或316不锈钢材质**	60 x 3.15mm 75 x 3.15mm	Self colour 金属本色
	Brad Nail 曲头钉 To tie boards together **用于将板材连接在一起**	32mm	
	Titanium Coated High Speed Drill Bit **钛合金涂层高速钻头** For pre-drilling prior to face fixing with jolt head **使用蓬头钉正面安装时需预先钻孔。**	3mm	
	**Joint sealant 密封胶** Paintable flexible sealants are recommended for filling the joints. Refer to Section 7.2 for information. **推荐使用可喷漆的软性密封胶进行填充。** **参考7.2章的信息。**	Tube **管装**	Sika, Bostik Holdfast
	**CRC ADOS Builders Fill 填充剂** Two part exterior grade fill to finish over jolt head nails. **两部分的外部填充剂，用于填充蓬头钉的钉孔。**		
	**PEF Rod 棒**	Polyethylene foam 聚乙烯发泡	Sika or similar Sika 或相似材料
	**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. e.g. Tyvek®, Marshall Innovations or similar. **用于安装窗户时使用的弹性胶带，参考本手册窗户安装部分获取更多详细信息。**	Proprietary tape to adhere to flexible underlay 粘在弹性隔层上的专利胶带	Tyvek, Marshall Innovations or similar Tyvek, Marshall Innovations 或相似
	**Flashing Material 防水板材料** as per Table 20, 'E2/AS1' **按照表20，'E2/AS1'要求使用**		Flashing Fabricator 防水材料

Table 3 contd. 表 3 续

	**Planted Sill** **嵌入式窗台**		H3.1 minimum Treated Timber Timber Merchant or cut on site 经过H3.1级别热处理的木材或现场切割
Accessories not supplied by James Hardie | 非 James Hardie 提供的配件			
Accessories **配件**	**Description** **产品描述**	**Size 尺寸 (mm)**	**Material/appearance** **材料/外观**
	**Timber Scriber** **木材划线器** To scribe beside window, site cut to suit. 在窗户周围划线，现场进行切割	As required 根据需求	H3.1 minimum Treated Timber Timber Merchant or cut on site 经过H3.1级别热处理的木材或现场切割
	**Fibre Cement Cutting Blade** **纤维水泥切割锯片** Diamond tip 305mm diameter circular saw blade to fit drop saw. 直径305mm的金刚石圆锯片，在落锯上使用	305mm	Diamond Tipped 金刚石刀头
	**Cant Strip** Predrill the weatherboards when fixing 安装时要对护墙板预先钻孔	To suit 匹配	uPVC

2 Application and Scope 应用与范围

2.1 Application 应用

Linea Weatherboard can be used in timber framed buildings that fall within the scope limitations of the New Zealand Building Code (NZBC) Acceptable Solution E2/AS1, Paragraph 1.1.
Linea 护墙板仅可应用于《新西兰建筑规范 (NZBC)》合格方案第1.1部分E2/AS1条款中，所列出的木框架建筑中。

This specification is for the use of Linea Weatherboard direct to stud and must be read in conjunction with the current CodeMark certificate and BRANZ Appraisals for Linea Weatherboard. The document also serves the purpose of an installation manual for this product.
本规范包括 Linea 护墙板直接安装在墙筋上的方法，请同时阅读最新版 CodeMark 认证和 BRANZ 认证。本文档也可作为产品安装说明书使用。

This document is for intended for use by architects, designers, specifiers or builders who are involved in specifying Linea Weatherboard.
本文件旨在供建筑师、设计师、工程监管者及工人等可能涉及 Linea 护墙板使用的人士参阅。

For use of the Linea Weatherboard outside this published scope, the architect, designer or engineer must undertake specific design. For advice on designs outside the scope of this specification, Ask James Hardie on 0800 808 868.
若 Linea 护墙板应用于超出所述使用范围的其它用途，则建筑师、设计师或工程师必须进行相应的具体设计。若想就超出本规范范围的设计得到更多建议，请致电 0800 808 868 向 Ask James Hardie 咨询。

Refer to the Linea Weatherboard Cavity Fix Technical Specification when installing Linea Weatherboard using the cavity construction method.
如果使用空心结构安装 Linea 护墙板，请参考《Linea 护墙板空心结构安装法技术规范》。

2.2 Scope 应用范围

This specification covers the installation of Linea Weatherboard within the following scope:
本规范涉及 Linea 护墙板安装范围如下:

- Linea Weatherboard must be installed horizontally
  Linea 护墙板必须水平安装
- An external wall framing that complies with the NZBC
  符合 NZBC 要求的外墙结构
- In all wind zones up to and including very High (VH)
  所有风区范围，包括风压极高区域 (VH)

2.3 Limitations 限制

- Linea Weatherboard cladding must not be used on curved wall applications
  护墙板不能使用在弯曲的墙面上
- Linea Weatherboard cladding must not be installed vertically or angled
  护墙板不能进行垂直或者带有倾角安装，只能水平安装
- The minimum ground clearances specified must be maintained
  必须遵守规范中的最小离地间隙
- Timber window joinery/recessed openings is subject to an alternative design by the designer
  在木窗结合处或者凹进的开口处安装，请按照设计师的具体设计方案

Direct fixed application is only suitable for risk score up to and including 12 as per risk matrix analysis of E2/AS1.
直接安装只适用于E2/AS1中风险分析中，得分不超过12分的情况。

2.4 Details 详图

Various typical Linea Weatherboard details are provided within this document. The construction details are available on our website. These details are available in dwg, dxf, jpg and pdf file format and can be downloaded at **www.jameshardie.co.nz.**
这本安装规范提供了各种应用 Linea 护墙板安装工程详图。请在我们的网站 **www.jameshardie.co.nz** 下载dwg、dxf、jpg及pdf格式的工程详图。

All dimensions shown are in millimetres unless noted otherwise.
除特殊标明外，详图中所有尺寸默认单位为毫米。

3 Compliance 合规

3.1 NZBC Compliance NZBC 合规

When installed in accordance with the conditions of CodeMark number GM-CM30018 Linea Weatherboard complies with all relevant requirements of the NZBC. Please refer to www.building.govt.nz for a copy of the certificate.
当在 CodeMark 编号 GM-CM30018 规定的条件下安装 Linea 护墙板时符合 NZBC 的相关要求。请访问网站 www.building.govt.nz 获得证书副本。

CODEMARK™
30018

Linea Weatherboard direct fixed cladding also has a BRANZ Appraisal number 446 (2010) available at www.branz.co.nz or www.jameshardie.co.nz.

Linea 护墙板直接安装还获得了BRANZ认证编号446 (2010)。详情请查询 www.branz.co.nz 或 www.jameshardie.co.nz。

BRANZ Appraised
Appraisal No.446 (2010)

4 Design 设计

4.1 Responsibility 责任

The specifier or other party responsible for the project must ensure that the information and details 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 technical specification.
项目监管者或者项目其他责任方必须确保实际项目中的信息和详图与本规范一致，如有超出本规范的应用必须经过具体的工程设计。

All New Zealand Standards referenced in this manual are current edition and must be complied with.
所有本手册中涉及的新西兰标准均为现行版本，必须严格遵守。

Specifier 项目监管者

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监管者或其他责任方，请确保您所计划的用途与本文件中所陈述的信息一致，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 figures and material selection provided by the designer and this James Hardie Technical Specification.
如果您是建筑项目的施工者，请确保遵循设计师及这本 James Hardie 技术规范中的规定，包括项目设计、湿度控制方案、相关数值及物料选择等方面的规定。

All the details provided in this document must be read in conjunction with the project specification.
本文件中提供的所有详图都务必结合施工项目本身的详图使用。

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 their aesthetic expectations before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation. James Hardie will only offer a replacement product if Linea Weatherboard or Axent Trim supplied are found to be out of its manufacturing specification.
James Hardie 一直采用严格的质量检测标准，确保所有产品满足质量要求。在安装前，施工方有责任确保产品满足其审美标准。一旦安装开始，James Hardie 不负责修正由此造成的任何明显的美学偏差问题。James Hardie 只在 Linea 护墙板或 Axent Trim 饰板产品不符合制造参数的情况下提供更换服务。

4.2 Clearances 离地间隙

The clearance between the bottom edge of cladding and the paved/unpaved ground must comply with section 9.1.3 of E2/AS1. On the roofs and decks the minimum clearance must be 50mm. These clearances must be maintained throughout the life of the building.
板材底部边缘与铺装/非铺装地面之间所留出的间隙，必须遵守E2/AS1中9.1.3条款。在屋顶和露台，最小间隙要保证为50mm，并在整个建筑使用周期中始终保持。

Linea Weatherboard must overhang the bottom plate on a concrete slab by a minimum of 50mm as required by the NZBC Acceptable Solution, E2/AS1 Table 18.
根据NZBC合格方案E2/AS1表18中的要求，Linea 护墙板必须距离混凝土楼板至少50mm。

The site on which the building is situated must comply with the NZBC Acceptable Solution E1/AS1 ‘Surface Water’.
建筑项目的所在地必须遵守NZBC合格方案E1/AS1中“地表水”(‘Surface Water’) 的要求。

Do not install cladding such that it may remain in contact with water or ground, refer to figures in Section 9 of this manual.
安装时板材不能与水面或者地面接触。详情请参考本手册第9章。

4.3 Structure 结构

4.3.1 Timber Framing 木框架结构

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 NZS 3604 (木结构建筑)的要求，或者经过特殊工程设计(SED)并符合 NZS 3603 和 AS/NZS 1170 的要求。框架刚性必须至少达到 NZS 3604 中的相关标准。

The stud spacing must not exceed 600mm centres maximum in any case.
在任何情况下，墙筋中心最大间距不能超过600mm。

For timber frame walls longer than 12m, it is best practice to allow for construction joints to accommodate movements generated due to timber shrinkage or deflections.
对于长度超过12m的木框架，最好采用工程连接件来解决木材因收缩和形变产生的位移。

4.3.2 Durability 耐久性

Timber framing must be treated to a minimum H1.2 treatment requirements and comply with Acceptable Solution B2/AS1 ‘Durability’ of the NZBC. For further timber treatment information refer to the NZS 3602 (Timber and Wood-Based Products for use in Buildings) for minimum timber treatment selection and treatment requirements. Framing must be protected from moisture at sites in accordance with the recommendations of framing manufacturers. Refer to the NZS 3602 for information about the allowable moisture content in timber framing.
木框架必须经过最少为H1.2级别的处理，并满足NZBC中合格方案B2/AS1部分关于耐久性的要求。更多关于木材处理的信息，请参考NZS 3602 (建筑中木材及木质产品的使用) 。在施工现场，木框架需要根据生产商的建议进行防潮保护。请参考NZS 3602中关于木框架防潮保护的相关信息。

4.4 Structural Bracing 结构支撑

Bracing can be achieved by using HomeRAB™ Pre-Cladding or RAB™ Board installed direct to framing instead of a flexible underlay or by using Villaboard™ Lining bracing system on the internal face of wall.
通过使用 HomeRAB™ 预置垫层或者 RAB™ 板替代弹性隔层直接安装在木框架上，或在内墙墙面上使用 Villaboard™ 内衬支撑系统，都可以起到结构支撑的作用。

4.5 Energy Efficiency 隔热能效

External walls constructed as per this technical specification using Linea Weatherboard cladding must use suitable bulk insulation to meet the minimum thermal insulation requirements as per Clause H1/AS1 'Energy Efficiency' of the NZBC.
根据本技术规范，外墙采用 Linea 护墙板时，必须使用适合的保温材料以达到NZBC中H1/AS1条款‘隔热能效’中对墙体保温的最低要求。

4.6 Fire Rated Walls 墙面耐火等级

External walls with Linea Weatherboard direct fixed cladding can achieve fire ratings of up to 60/60/60 when constructed in accordance with the James Hardie Fire and Acoustic Design Manual. Linea Weatherboard must be face fixed for fire rated applications.
根据 James Hardie《消防与隔音设计手册》，将 Linea 护墙板直接安装在外墙时可以达到60/60/60的耐火等级。Linea护墙板必须正面安装以达到耐火性能。

Refer to the Fire and Acoustic Design Manual for further information about fire rated systems.
获取更多信息请参考 James Hardie《消防与隔音设计手册》。

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

External spread of fire (clause C3.5 and C3.7) apply where:
外部火势蔓延概念（条款C3.5和条款C3.7）适用于：

- Building height is greater than 10m and upper floors have sleeping uses or are different property (C3.5), and
  建筑高度超过10m，同时上层建筑包含睡眠区域或其他用途（条款C3.5）
- Where the building is located within 1m of a relevant boundary (C3.7)
  建筑位于相关边界1m范围之内（条款C3.7）

Refer to Table 5.1 of Section 5.4 of C/AS1 for group SH or table 5.5 of Section 5.8.1 of C/AS2 for the other risk groups to identify the external fire spread requirement applicable to the external cladding material and surface finish.
请参考条款C/AS1章节5.4中的表5.1，获取SH组，或者条款C/AS2章节5.8.1中的表5.5，获取其他火势蔓延的风险 因素，以确定适用于外部覆层材料和表面涂层的外部火势蔓延的安全要求。

For the other situations where 'no requirement' is listed, Linea Weatherboard installed as per the details published in this technical specification complies.
对于其他没有特殊要求的情况，Linea 护墙板的安装需要遵守本技术规范的要求。

For buildings that are within 1m of the boundary, Linea Weatherboard wall construction as per its fire rated wall construction details published in Fire & Acoustic Design Manual complies with C3.7.
当建筑边界小于1m，Linea 护墙板的墙面耐火施工请参考《消防与隔音设计手册》中条款C3.7。

4.8 Alpine Regions 高寒地区

In regions subject to freeze/thaw conditions, Linea Weatherboard must not be in direct contact with snow or ice build up for extended periods, e.g. external walls in alpine regions subject to snow drifts over winter.
在经常出现冰冻/融化状况的地区，Linea 护墙板不得长时间直接接触冰雪。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 Linea Weatherboard has been tested in accordance with AS/NZS 2908.2 Clause 8.2.3.
Linea 护墙板符合AS/NZS 2908.2中条款8.2.3的测试要求。

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

James Hardie products contain sand, a source of respirable crystalline silica 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.
James Hardie 的产品中含有沙子，是可吸入结晶二氧化硅的来源。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，以及清理，处理或移动时产生的含有可吸入结晶二氧化硅的粉尘引起的。

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/NZS1716 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/NZS1716 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（可呼吸）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 HardieBlade™ logo 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 HardieBlade™ 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，警示他人离开周围区域

✓ 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
切割时

✓ Work outdoors only
仅在户外作业

✓ Make sure you work in a well ventilated area
确保你的作业环境通风良好

✓ 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 HardieBlade Saw Blade (or equivalent) and a dust reducing circular saw connected to a M Class or higher vacuum
使用 HardieBlade 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：

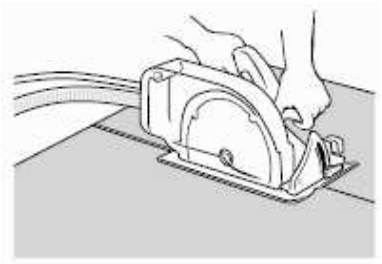
- Wear your P1 or higher (correctly fitted in accordance with manufacturers' instructions), ask others to do the same.
佩戴P1或更高级别的防护面罩或呼吸器（根据制造商指导正确佩戴），并要求他人也这样做
- Keep persons on site at least 2 metres and as far as practicable away from the cutting station while the saw is in operation
让施工现场的人在锯切过程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

If concern still exists about exposure levels or you do not comply with the above practices, you should always consult a qualified industrial hygienist or contact James Hardie for further information.
如果仍然担心暴露水平，或者您不遵守上述惯例，则应始终咨询合格的工业卫生师或联系 James Hardie 以获取更多信息。

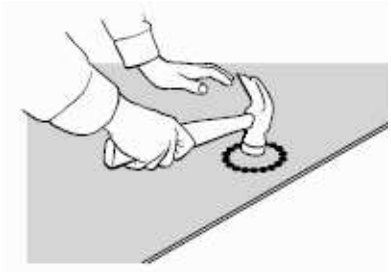
Working Instructions 作业说明

HardieBlade™ Saw Blade
HardieBlade™ 锯片



The HardieBlade Saw Blade used with a dust-reducing saw is ideal for fast, clean cutting of James 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.
HardieBlade 锯片与降尘圆锯一起使用，可以快速干净的切割 James 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 储存和运送

Keeping products and people safe
保证产品和人员的安全

Off loading 卸载

- ✓ James Hardie products should be off-loaded carefully by hand or by forklift
  James Hardie 产品须用手或叉车小心卸载
- ✓ James Hardie products should not be rolled or dumped off a truck during the delivery to the jobsite
  James Hardie 产品不应在运输至作业现场的过程中滚下或倾倒

Storage 储存

James Hardie products should be stored:
James Hardie 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

James Hardie products must not be stored:
James Hardie 产品的储存一定不要：

- ✗ 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，接触到化学元素

James Hardie is not responsible for damage due to improper storage and handling.
如因储存或处理不当导致损坏，James Hardie 概不负责任。

5.2 Tips for safe and easy handling of weatherboard products 轻松安全搬运护墙板产品小贴士

Weatherboard products
护墙板产品

- ✗ Do not lift planked products flat and in the middle
  不要只从中间或者只从两边抬举平板产品
- ✓ Carry the products on the edge
  抬举产品的边缘处
- ✓ If only one person is carrying the product, hold it in the middle and spread arms apart to better support the product
  仅一人作业时，托住中部并展开双臂以更好的支撑产品
- ✓ If two people are carrying the plank, hold it near each end and on edge
  当两人作业搬运板条时，则从两端和边缘处抬起
- ✓ Exercise care when handling weatherboard products to avoid damaging the edges/corners
  对板材产品，须轻拿轻放，避免损坏边角处

6 Installation 安装

The horizontal lap between the two Linea Weatherboard must be 30mm minimum. In certain scenarios you may require to creep up the lap, this must not exceed 33mm.
当水平安装 Linea 护墙板时，两块板之间交叠部分不可少于30mm。在特殊情况下，最大的交叠尺寸不能超过33mm。

Linea Weatherboards must be kept dry whilst in storage prior to and during fixing. Cut ends/edges and board face covered by flashings/facings/flanges/scribers or where sealant is applied to boards such as slimline box corners, internal corners, mitred external corners etc. must be primed prior to installation. Dust and loose material must be removed before priming.
Linea 护墙板在储存直到安装的过程中均需保持干燥。在安装之前，切割表面、板材表面，以及使用密封胶的位置如超薄箱角、阴角及斜接阳角等都必须涂上底漆。在涂底漆之前，必须将灰尘及杂质全部清除干净。

6.1 Fastener 紧固件

6.1.1 Fastener – Size and Method
紧固件 – 尺寸及安装方法

Linea Weatherboard and Axent Trim must be fixed to timber frame with the types of nails specified in Tables 4 and 5, in accordance with the following requirements:
Linea 护墙板和 Axent Trim 饰板必须安装在木框架结构上，安装过程请使用表4和5中的钉子类型，并满足以下要求：

- Linea Weatherboard can either be face/exposed fixed or concealed fixed
  Linea 护墙板可以采用暴露式安装或者隐藏式安装
- Linea Weatherboard must be fixed into studs at maximum 600mm centres. Fixing centres to coincide with stud spacing. Refer to figures in section 9 of this manual
  Linea 护墙板必须直接安装在墙筋上并保证最大中心安装距离为600mm，安装中心位置要与墙筋间距重合。请参考本手册第9章的参数要求
- All concealed nails must be driven flush with the board surface
  所有暗钉必须与板面齐平
- When concealed fixing Linea Weatherboard, nails must be driven under the lap of boards, except at all corners and vertical edges of openings where Linea Weatherboard must be face fixed. Refer to figures in section 9 of this manual
  当使用隐藏式安装方法时，所有的钉子都必须钉入板材平面下，除了各转角及垂直边缘等必须采用表面安装的地方。请参考本手册第9章
- Nails must be fixed 25mm from the end of the board when hand nailing. For gun nailing refer to Section 6.1.2
  当使用手工钉护墙板时必须保证钉子距离板材底部25mm。如果使用钉枪请参考第6.1.2章节
- When using concealed fixing method, any gaps that may appear under the lap due to site conditions can be minimised by fixing a jolt head nail through the lap as per the exposed nailing method. Refer to figures in section 9 of this manual
  当使用隐藏式安装法时，可以参照暴露式安装法，通过安装蓬头钉尽可能减小由于安装现场条件造成的板材间隙。请参考本手册第9章
- When using concealed fixing method, Linea Weatherboard may be tied together by face fixing through the lap using a 32mm brad nail if desired
  当使用隐藏式安装方法时，如果需要 Linea 护墙板应该使用32mm曲头钉正面安装
- When face fixing Linea Weatherboard, the upper board must be pre-drilled before fixing with a jolt head nail
  在安装 Linea 护墙板时，上层板材在使用蓬头钉安装前需预先钻孔

Table 4 表 4

Wind pressure 风压 (kPa)	Underlay 隔层	Fixing method 安装方法	Fixing type 安装类型	Instructions 说明
Up to 1.5 (up to and including VH Wind Zone) 最高1.5(小于或属于VH风区)	Flexible underlay 弹性隔层	Concealed nailing 隐藏式安装	40 x 2.8mm HardieFlex™ nail or a D/round head gun nail 40 x 2.8mm HardieFlex™ 钉或D型/环纹射钉	Finish flush with the board surface. 钉头保证与板面齐平
		Face nailing 表面安装	60 x 3.15mm jolt head nails 60 x 3.15mm 蓬头钉	Hot-dipped galvanised/stainless steel jolt head nail with pre-drilling through the top weatherboard. Use a 3mm drill bit. 热浸镀锌/不锈钢蓬头钉。使用3mm钻头在最上层护墙板预先钻孔。
	Rigid air barrier 刚性密封板	Concealed nailing 隐藏式安装	50 x 2.8mm HardieFlex™ nail or a D/round head gun nail 50 x 2.8mm HardieFlex™ 钉或D型/环纹射钉	Finish flush with the board surface. 钉头保证与板面齐平
		Face nailing 表面安装	75 x 3.15mm jolt head nails 75 x 3.15mm 蓬头钉	Hot-dipped galvanised/stainless steel jolt head nail with pre-drilling through the top weatherboard. Use a 3mm drill bit. 热浸镀锌/不锈钢蓬头钉。使用3mm钻头在最上层护墙板预先钻孔。

Table 5 表 5

Nail requirements for Axent Trim | 安装 Axent Trim 饰板时的钉子要求	
Single thickness 单层厚度	60mm jolt head nails. 60mm 蓬头钉。 If fixing over Linea Weatherboard use 75 x 3.15mm jolt head nails through a pre-drilled hole, using a 3mm drill bit. 如果安装在Linea护墙板上，需要使用75 x 3.15mm蓬头钉，并在安装前预先使用3mm钻头钻孔。
Single thickness plus packer 单层厚度加隔层	If fixing over Linea Weatherboard use 75 x 3.15mm jolt head nails through a pre-drilled hole, using a 3mm drill bit. 如果安装在 Linea 护墙板上，需要使用75 x 3.15mm蓬头钉，并在安装前预先使用3mm钻头钻孔。 When fixing to timber support use 60mm jolt head nails. 如果安装在木框架上，需使用60mm蓬头钉。

For fire rated wall applications the Linea Weatherboards must be face fixed. For more information Ask James Hardie on 0800 808 868.
Linea 护墙板必须正面安装以达到耐火性能。了解更多，敬请致电 James Hardie 0800 808 868。

6.1.2 Gun Nailing 钉枪安装

Linea Weatherboard can be gun nailed with a D-Head or RounDrive nail when concealed fixing method is used.
当采用隐藏式安装时，可以使用D形头钉或环形螺纹钉通过钉枪安装。

- Nails must be no closer than 50mm from the ends of boards when gun nailing is used — double studs will be required
  当使用钉枪安装时，入钉位置离板材终端不能小于50mm——需要使用双墙筋
- Be minimum length and nearest gauge as per Table 4
  根据表4选择长度最小和直径最接近的钉子
- Be finished flush with surface of board
  入钉后，钉头保证与板面齐平

6.1.3 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's material to be used in relation to the exposure conditions and are summarised in Table 6.
紧固件必须符合NZBC关于耐久性的最低要求。NZS 3604详细规定了对用于室外暴露环境下的固件材质的要求，详见表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用的要求		
Zone 区域	**Application 应用**	
D (sea spray) and geothermal hot spots D 区及地热区	General 通用	Stainless steel 304/316 不锈钢 304/316
	Fire 耐火	
	Bracing 支撑	
*C and B *C 及 B 区	General 通用	Hot dip galvanised ** 热浸镀锌 ** Stainless steel 304/316 * 不锈钢 304/316 *
	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 NZS 3604, Paragraph 4.2.4 require SED.
* C区是指根据对该地域情况的考察，有必要使用更高耐久性的产品的地区，因而应当慎重选材。如果建筑坐落于NZS 3604中第4.2.4段中列出的那些微气候区域，则需要进行特殊工程设计(SED)。

**Hot dip galvanised must comply with AS/NZS 4680.
**热浸镀锌材料必须满足AS/NZS 4680要求。

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.
另请参阅NZBC合格方案(NZBC Acceptable Solution)‘E2/AS1款’的表20和21，了解如何选择适当的固件材料及与其它材料的兼容性等信息。

6.2 Framing 框架

Framing to be in accordance with the NZS 3604 or specific engineering design. The following framing must be provided for the installation of Linea Weatherboard:
框架必须满足NZS 3604的要求或者经过特殊工程设计。在安装 Linea 护墙板时，框架需要满足以下条件：

- Studs provided at 600mm centres maximum
  墙筋中心最大间距为600mm
- Double studs are required at internal corners
  阴角位置需要设置双墙筋
- Extra packers may be required at external corners
  阳角可能需要额外隔层
- Extra studs are required for aluminium internal corner sections
  铝制阴角位置需要设置额外墙筋

6.2.1 Gable Ends 山墙端

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.
如果山墙桁架位于外墙框架的上托板上，那么框架结构的尺寸必须符合制造商/供应商提供的桁架设计及规范，并具有独立设计制作人声明。

6.2.2 Tolerances 可允许误差

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.
为了达到墙面标准，框架必须保证竖直和水平。框架误差必须满足NZS 3604的要求和生产商的规范。所有框架必须齐平。完工后的墙面效果可能根据不同的项目地点和建筑商的安装方式有所不同。为了更好地理解不同建筑材料和施工方式造成的误差范围，建议参考由MBIE出版的施工指导文件获取更多信息。更多信息请参考网站 www.building.govt.nz 2015年新住宅施工可允许误差，材料及工艺指南。

6.3 Flexible Underlay or HomeRAB Pre-Cladding 弹性隔层和 HomeRAB 预置垫层

Flexible underlay or HomeRAB Pre-Cladding must be provided to comply with the requirements of E2/AS1 up to and including very high wind zone.
弹性隔层或HomeRAB预置垫层必须满足E2/AS1中包括极高风压区的要求。

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. HomeRAB Pre-Cladding is suitable for use as an air barrier and must installed in accordance with James Hardie Rigid Air Barriers Installation Manual.
建筑中未列出的内侧表面 (例如车库墙或者山墙) 必须在板材后面安装刚性隔层或者密封板。HomeRAB 预置垫层非常适合作为密封板使用，在安装时要遵守 James Hardie《刚性密封板安装手册》的要求。

6.4 Joints 连接

6.4.1 Jointing 连接方式

The ends of Linea Weatherboard are jointed off-stud by means of a tongue and groove joint. Tongue and groove joints may be located centrally between studs but no closer than 100mm from the edge of a stud. The joints must be staggered by 600mm minimum. Flexible sealant must be applied to the front of tongue before pushing into the groove at the time of installation. From a visual perspective, the joint line will always be visible and must not be hard filled.
Linea 护墙板的板边是通过榫卯结构连接，并需错开墙筋位置。榫卯连接处可以位于两个墙筋之间，但距离墙筋边缘至少100mm。不同交错接口之间至少600mm。安装时要在连接处使用软性密封胶密封。从视觉角度上，接缝会始终可见并且不能硬填充。

6.4.2 External Corner Joint 阳角连接

There are a number of options to select from when detailing external corners:
阳角连接有以下选择：

- 90º corner soaker in aluminium, copper or stainless steel.
  铝制、铜制或不锈钢90º 边角防漏嵌条
- 135º corner soaker 180mm aluminium
  180mm 铝制135º边角防漏嵌条
- Aluminium boxed corners
  铝制箱角
- Box corners using Axent Trim
  使用Axent Trim饰板的箱角
- Mitred corners to weatherboards
  采用护墙板直接斜接边角

Refer to figures in section 9 of this manual
请参考本手册第9章

6.4.3 Internal Corner Joint 阴角连接

There are a number of options to select from when detailing internal corners:
阴角连接有以下选择：

- 90º or 135º Aluminium W-mould
  90º 或 135º 铝制W形覆膜
- Scribed corner
  划线角

Refer to figures in section 9 of this manual
参考本手册第9章

6.5 Junctions and Penetrations 连接和穿透

All windows and doors must be detailed as per the requirements of this specification. James Hardie has developed the window details for Linea Weatherboard which meet the performance requirements of E2 'External Moisture', an approved document of the NZBC. Refer to figures in section 9 of this manual.
所有门窗必须根据本规范的要求进行细化处理。James Hardie 开发了针对 Linea 护墙板的窗户安装详图，该示例符合NZBC核准文件中E2部分——外部湿度控制的要求，请参阅本手册第9章。

7 Finishes 表面处理

Protective coating of Linea Weatherboard and Axent Trim is required in order to meet the durability requirements of the NZBC.
Linea 护墙板和 Axent Trim 饰板的保护涂层需要达到 NZBC中耐久性的相关要求。

7.1 Preparation and Priming 准备工作和底漆处理

The Linea Weatherboard and Axent Trim must be dry before painting. Punch and fill all exposed nails a maximum of 2mm below the surface. Fill the hole with an exterior grade 2 part builders fill, eg CRC ADOS Builders Fill, allow to cure and sand smooth ready for priming. Prime the filled holes in accordance with paint manufacturer's specifications.
Linea 护墙板和 Axent Trim 饰板在上漆之前必须保持干燥。所有暴露在外面的钉子必须砸进表面不超过2mm深度。钉孔需填充强化填充剂，如 CRC ADOS Builders Fill 强化填充剂，等其硬化后用砂纸打磨光滑，为上底漆做准备。按照油漆生产商的说明为填充孔上底漆。

It is not recommended to seal gap under the lap of weatherboards as it helps circulation of air behind the weatherboard cladding. However if sealing of the gap is undertaken, the product warranty still applies.
不建议密封护墙板下部的空隙，空隙有助于护墙板后面的空气流动。如果已经密封了空隙，产品的质保依然有效。

7.2 Sealants 密封胶

All sealants must demonstrate the ability to meet the relevant requirements of the NZBC. Application and use of sealants must comply with manufacturer's instructions. Sealants, if coated, must be compatible with the paint system.
所使用密封胶的性能必须达到NZBC的相关要求。密封胶的使用必须遵守生产商的规范。如果需要在密封胶表面上漆，必须采用兼容的油漆。

7.3 Painting 涂漆

All Linea Weatherboards are pre-primed on their face and bottom edge with a factory applied acrylic base coat.
所有 Linea 护墙板已经在表面及底部边缘预涂丙烯底漆。

Linea Weatherboard and Axent Trim must be painted within 90 days of installation. Dark coloured paints can be used, ie there is no restriction on the Light Reflectance Value (LRV) of paint to be applied. All exposed faces, including the top edges under the sills and bottom edges of Linea Weatherboard, Axent Trim and accessories must be finished with an exterior paint system.
Linea 护墙板和 Axent Trim 饰板必须在安装完90天内涂漆。可以采用深色油漆，对于油漆的光线反射值（LRV）没有限制。所有暴露的表面，包括窗台下面的边缘和 Linea 护墙板的底部边缘、Axent Trim 饰板以及各种配件都必须根据所选油漆进行表面处理。

For best aesthetic results a low sheen paint is recommended.
为了达到最好的视觉效果，建议采用低光泽油漆。

The dark colours in certain environments may fade over a period of time. Special paints/coatings are required in certain harsh environments.
深色油漆在一定的环境中可能会随着时间逐渐褪色。在一些恶劣的环境中需要使用特殊的油漆或涂层。

Paint selection and the preparation required is dependent on paint chosen. Refer to the paint manufacturer for information before starting painting.
对于油漆的选择和准备工作的具体要求，要根据具体油漆类型而定。在开始涂漆之前请参考油漆生产商的相关信息。

Stainless steel soakers are generally left natural. For painting over stainless steel soakers, refer to paint manufacturer as special preparation and paints are required.
不锈钢防漏嵌条通常不需要上漆。如果需要在不锈钢防漏嵌条表面上漆，请参考油漆生产商的具体要求。

8 Care and Maintenance 保养及维护

The extent and nature of maintenance will depend on the geographical location and exposure of the building. It is the responsibility of the specifier to determine normal maintenance requirements to comply with the NZBC Acceptable Solution B2/AS1. As a guide, it is recommended that basic normal maintenance tasks shall include but not be limited to:
维护的范围和性质根据建筑所在地理位置和暴露情况而定。工程监管方有责任根据NZBC合格方案B2/AS1制定具体的维护方案。建议采取以下的基本维护方案，但不限于此：

- 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
  每6-12个月*用低压水或者刷子清洗外表面，如果是极端的海岸地区及海浪区域，则应该每3-4个月清洗一次
- Re-coating exterior protective finishes. Always refer to your paint manufacturer for re-coating requirements
  根据油漆制造商的要求重新粉刷保护涂层
- Maintaining the exterior envelope and connections including junctions, penetrations, flashings and sealants etc.
  维护外部墙体和连接处，包括接缝处、穿透墙体处、防水板和涂有密封胶的位置等
- Cleaning out gutters, blocked pipes and overflow pipes as required
  根据需求清理雨槽、下水管和溢流管
- Pruning back vegetation close to or touching the building as well as ensuring the NZBC ground clearance requirements are maintained especially where gardens are concerned
  根据NZBC关于接地间隙的要求修剪建筑周边植被，尤其要关注花园植被的修剪
- The clearances between the bottom edge of Linea Weatherboard and the finished/unfinished ground must always be maintained
  始终确保 Linea 护墙板底部边缘与铺装/非铺装地面保持适当间隙
- Stainless steel soakers used in extreme coastal conditions or in sea spray zones may show some signs of ‘tea staining’. It is an aesthetic issue and to minimise staining soaker must be washed/polished frequently
  在极端沿海地区及涌潮区，不锈钢防漏嵌条可能会出现“茶渍”现象，可以通过经常清洗和抛光解决美观问题

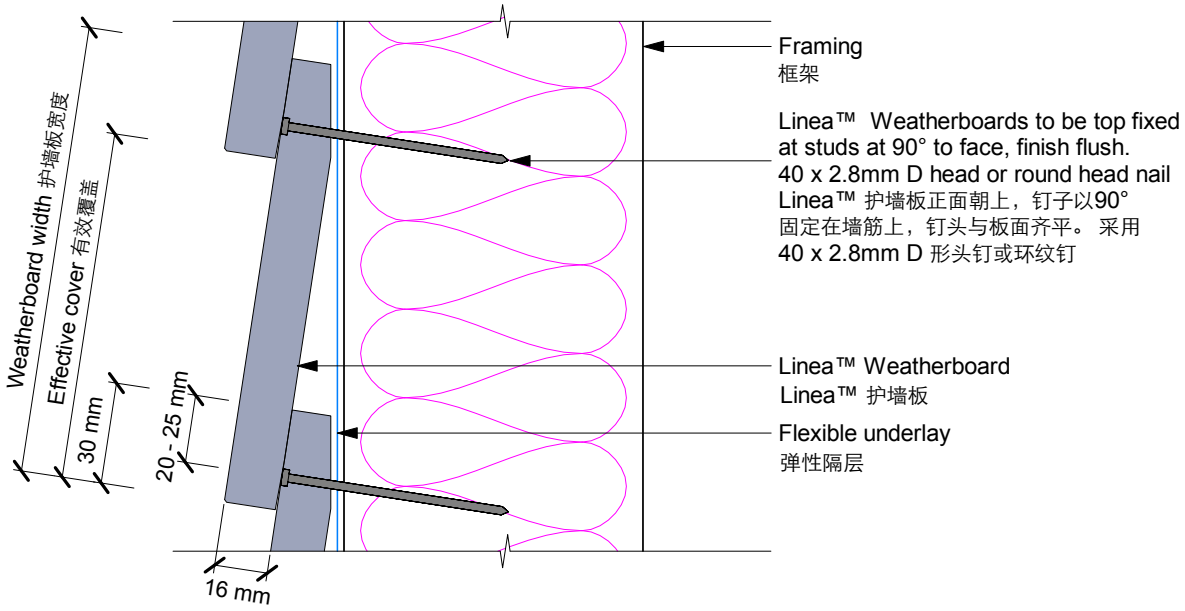
*Do not use a water blaster to wash down the cladding. Refer to your paint manufacturer for washing down requirements.
*请勿使用水枪冲刷外墙板。请参考油漆制造商的要求进行清洗。

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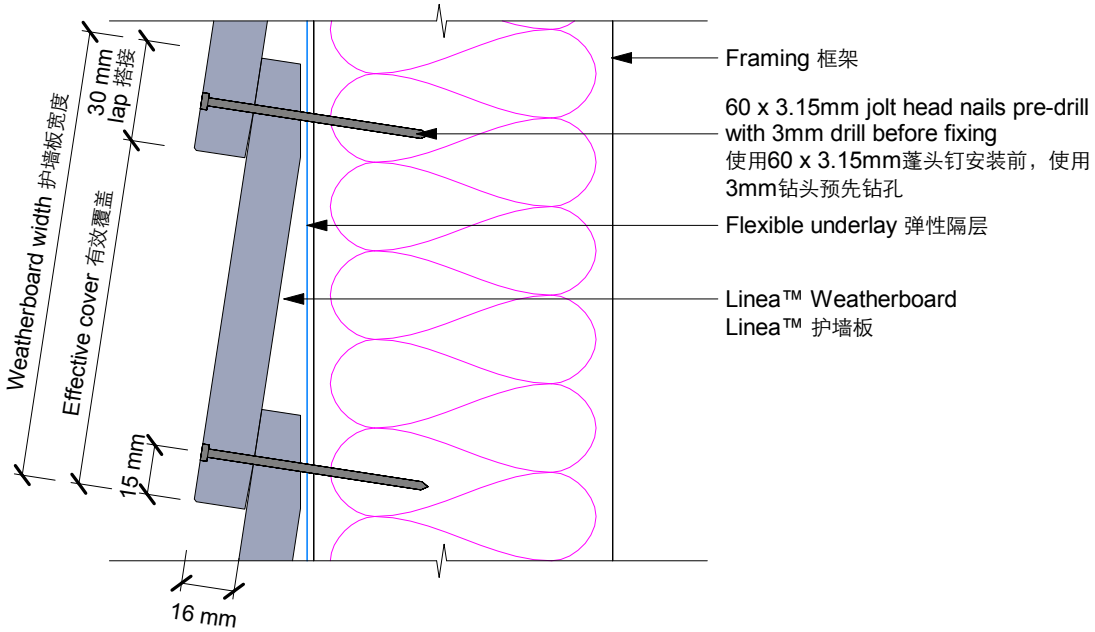
For all meter box details please visit our website at **www.jameshardie.co.nz** or Ask James Hardie on **0800 808 868**.
查看所有仪表盒信息，请访问 **www.jameshardie.co.nz** 或拨打 **0800 808 868** 咨询。

Figure 1: Direct fix weatherboard fixing | 图 1: 护墙板直接安装法



Concealed Nailing
隐藏式安装法

Linea™ Weatherboards must be face fixed at corners and down window and door openings using jolt head nails at 90° to face, punch 2mm below surface and fill. Refer to fixing table 4.
Linea™ 护墙板必须正面安装在转角或门窗等开口处时，采用蓬头钉以90°钉入板面2mm以下并填充。参考安装表4。



Exposed Nailing
暴露式安装法

Figure 2: Direct fix foundation detail and soffit detail | 图 2: 直接安装法地基详图和拱腹详图

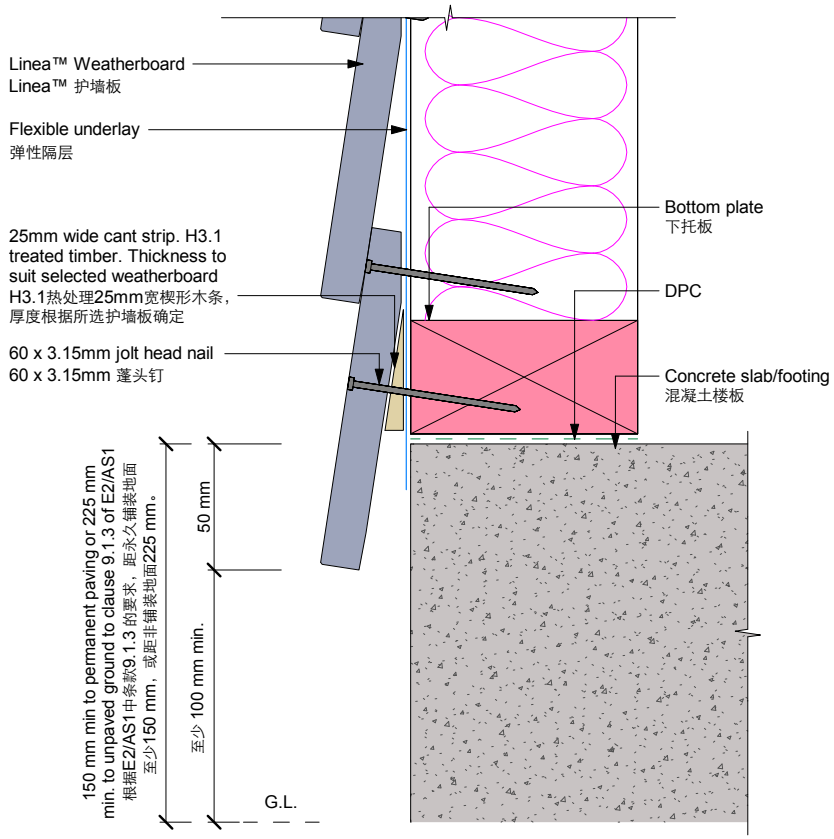


Figure 3: Enclosed deck | 图 3: 封闭式露台

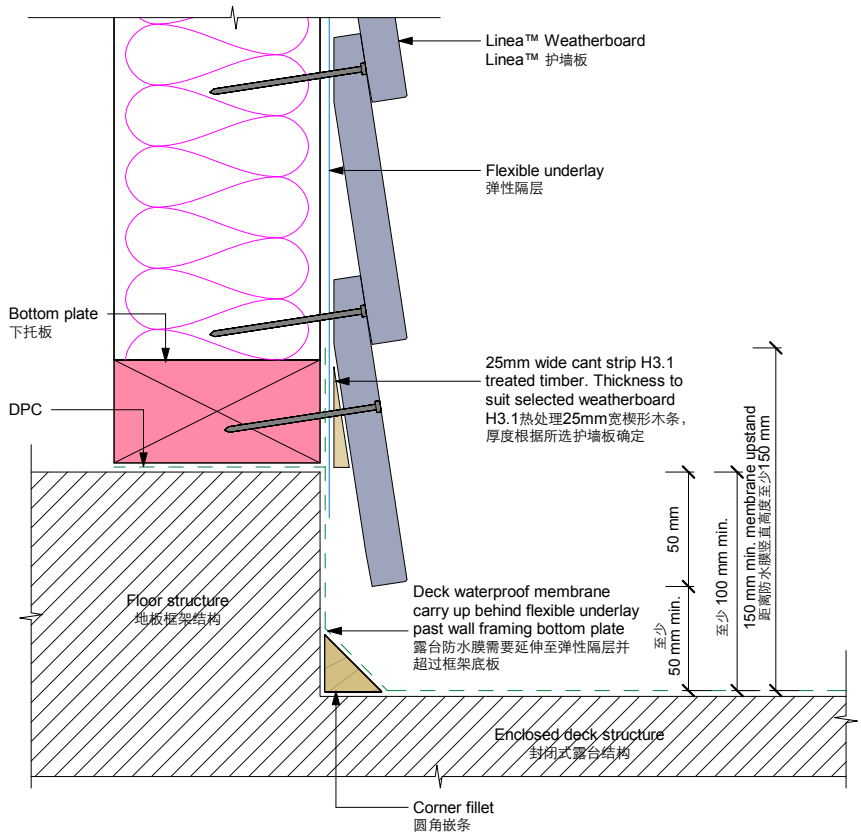


Figure 4: T & G jointing off stud | 图 4: 不使用墙筋的榫卯连接

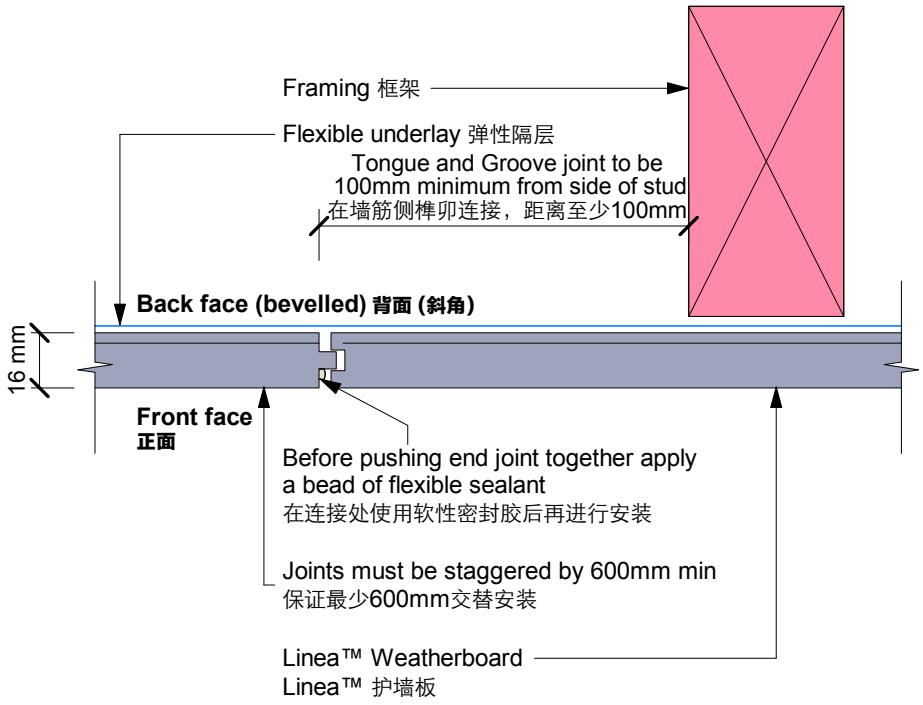
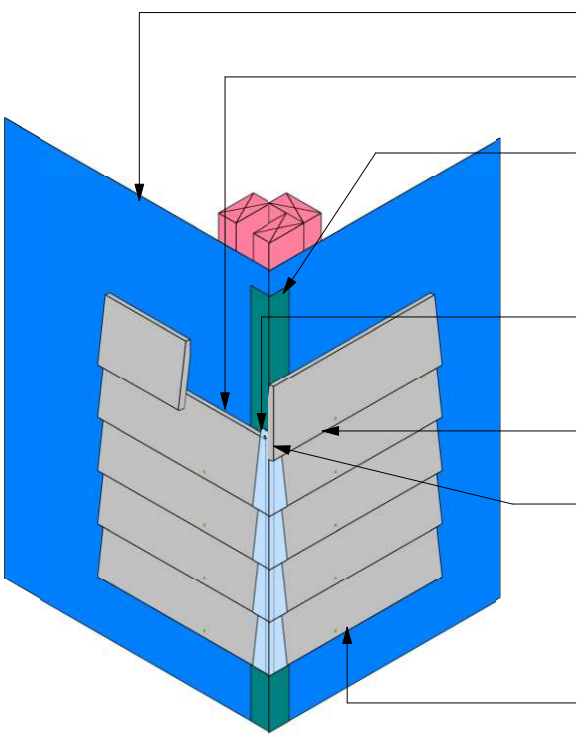
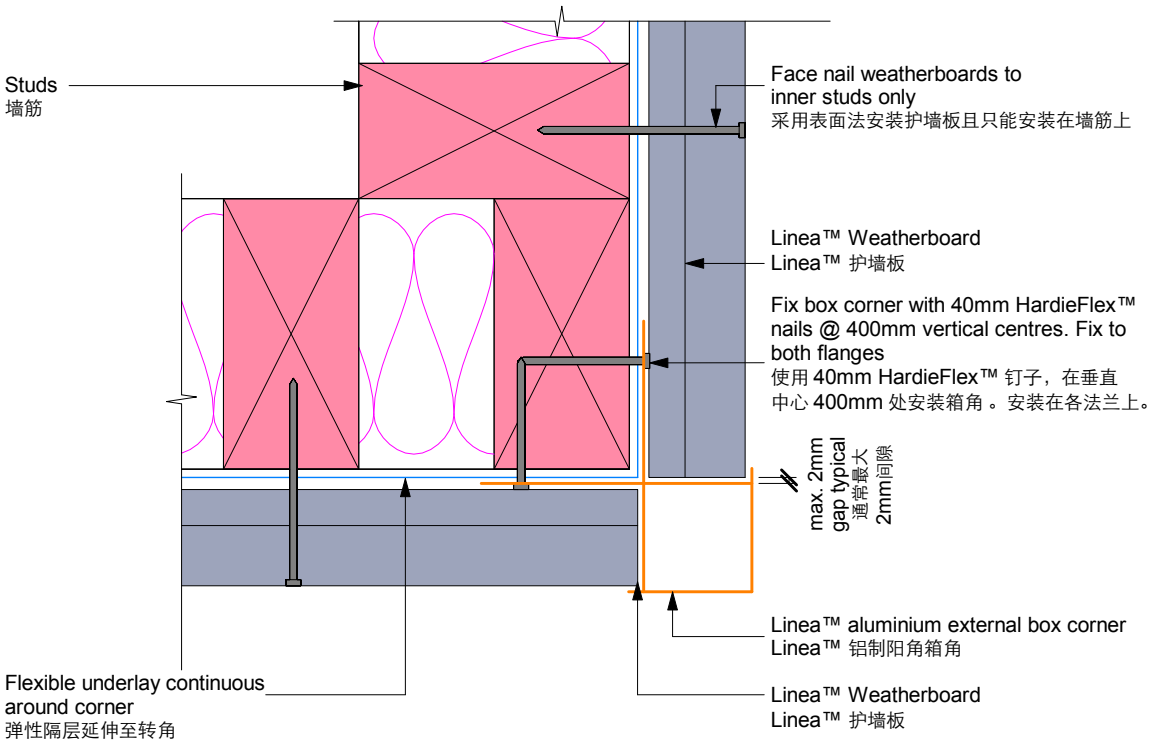


Figure 5: External corner soaker | 图 5: 阳角防漏嵌条



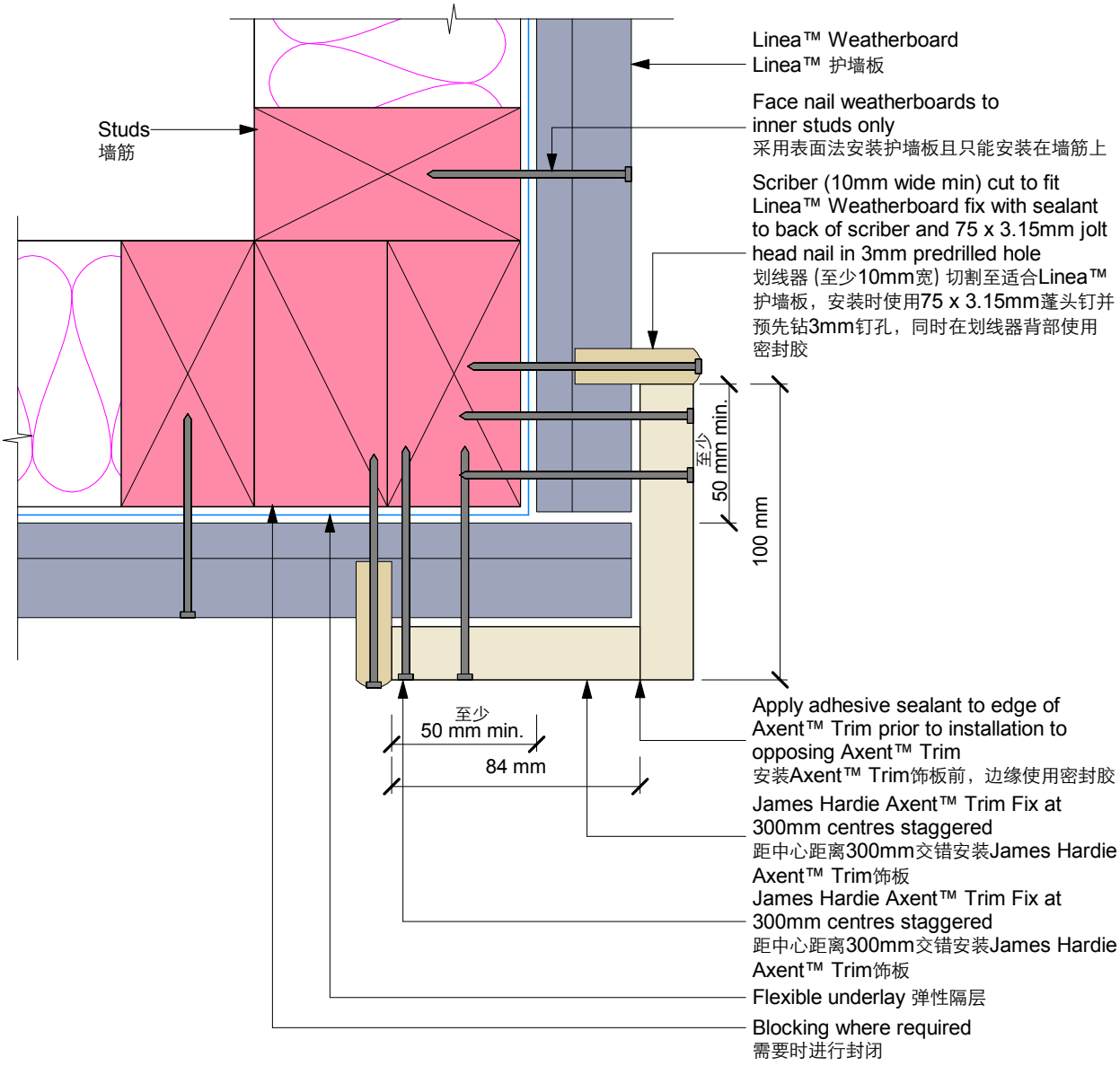
Soaker material 防漏嵌条材质	Nail material 钉子材质
Copper 铜制	Copper or phosphor bronze 铜制或磷青铜
Aluminium 铝制	Hot dip galvanised 热浸镀锌
Stainless steel 不锈钢	Stainless steel 不锈钢

Figure 6: External aluminium box corner | 图 6: 铝制阳角箱角



Note: Site cut edges to be primed
注意: 所有现场切割的切面必须上底漆

Figure 7: External boxed corner | 图 7: 阳角箱角



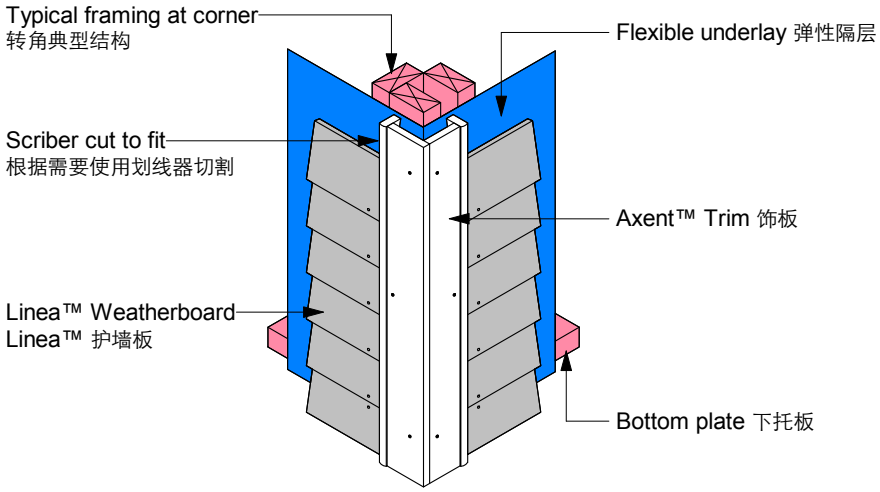
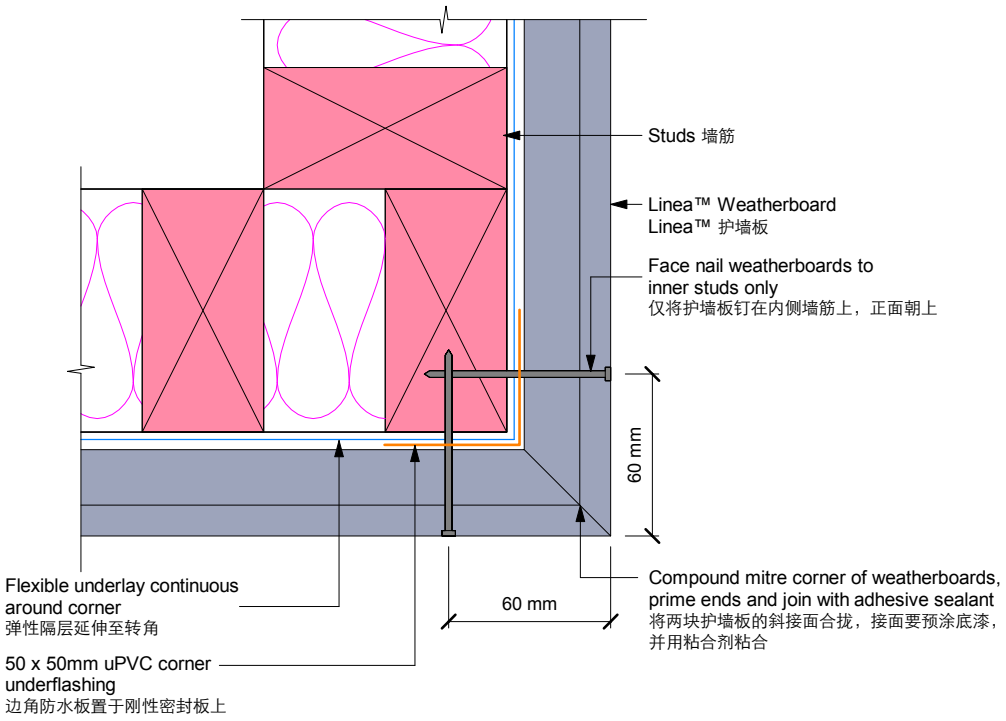


Figure 8: External mitre corner | 图 8: 阳角斜接边角



Note: Adhesive sealant must be used on the full end face of both weatherboards. Push lightly together and wipe off excess
注意：两块板的接面都必须整个涂上粘合剂，然后紧紧压实并擦去溢出的粘合剂

Figure 9: Internal aluminium corner | 图 9: 铝制阴角

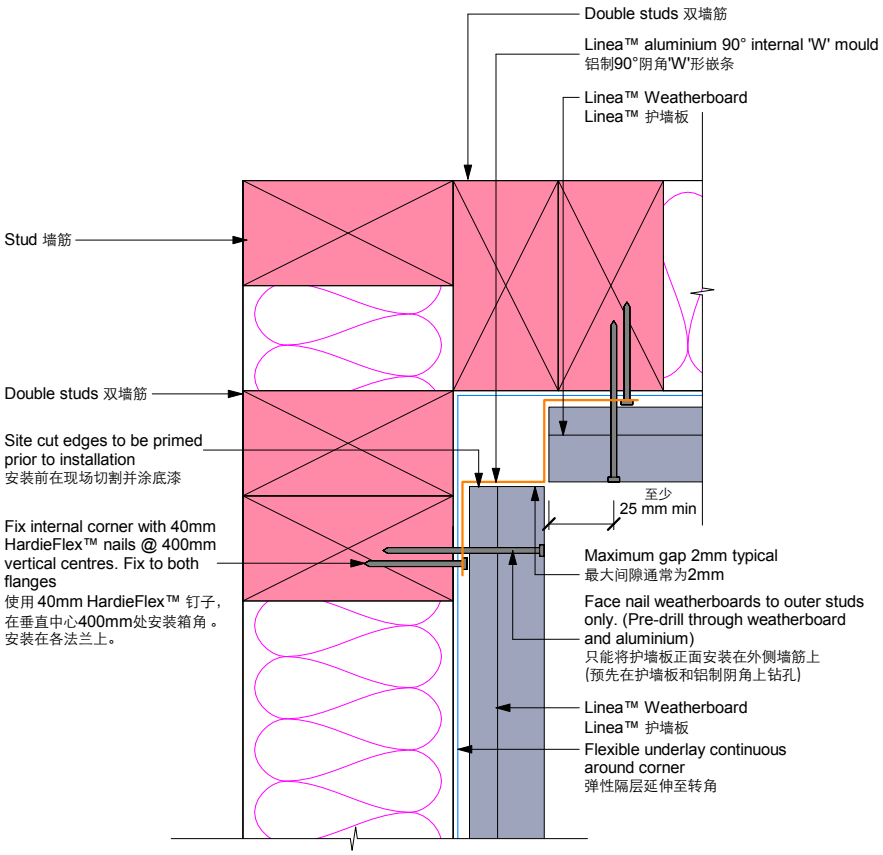


Figure 10: Internal 135° aluminium corner | 图 10: 135° 度铝制阴角

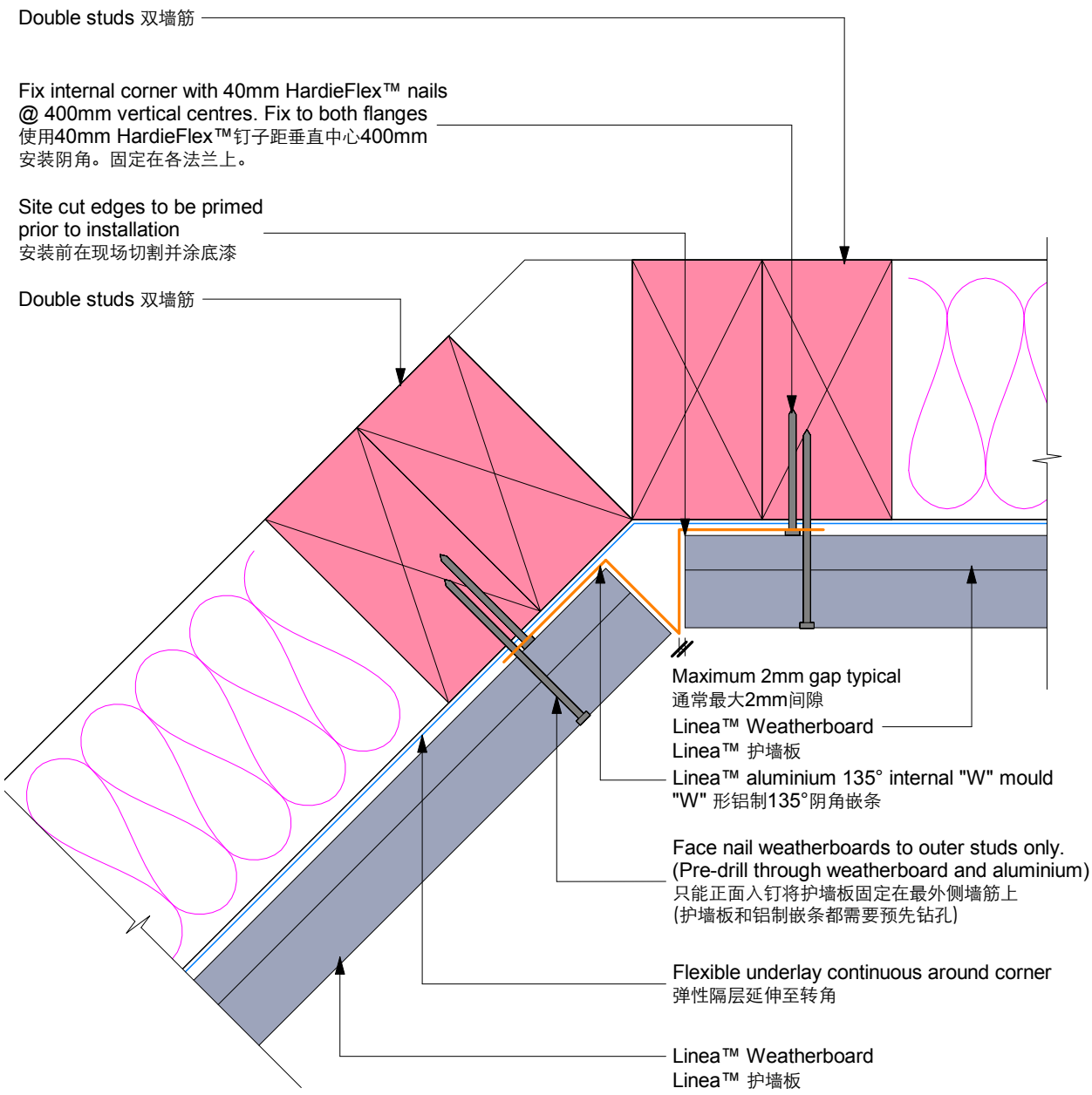


Figure 11: Scribed internal corner | 图 11: 划线阴角

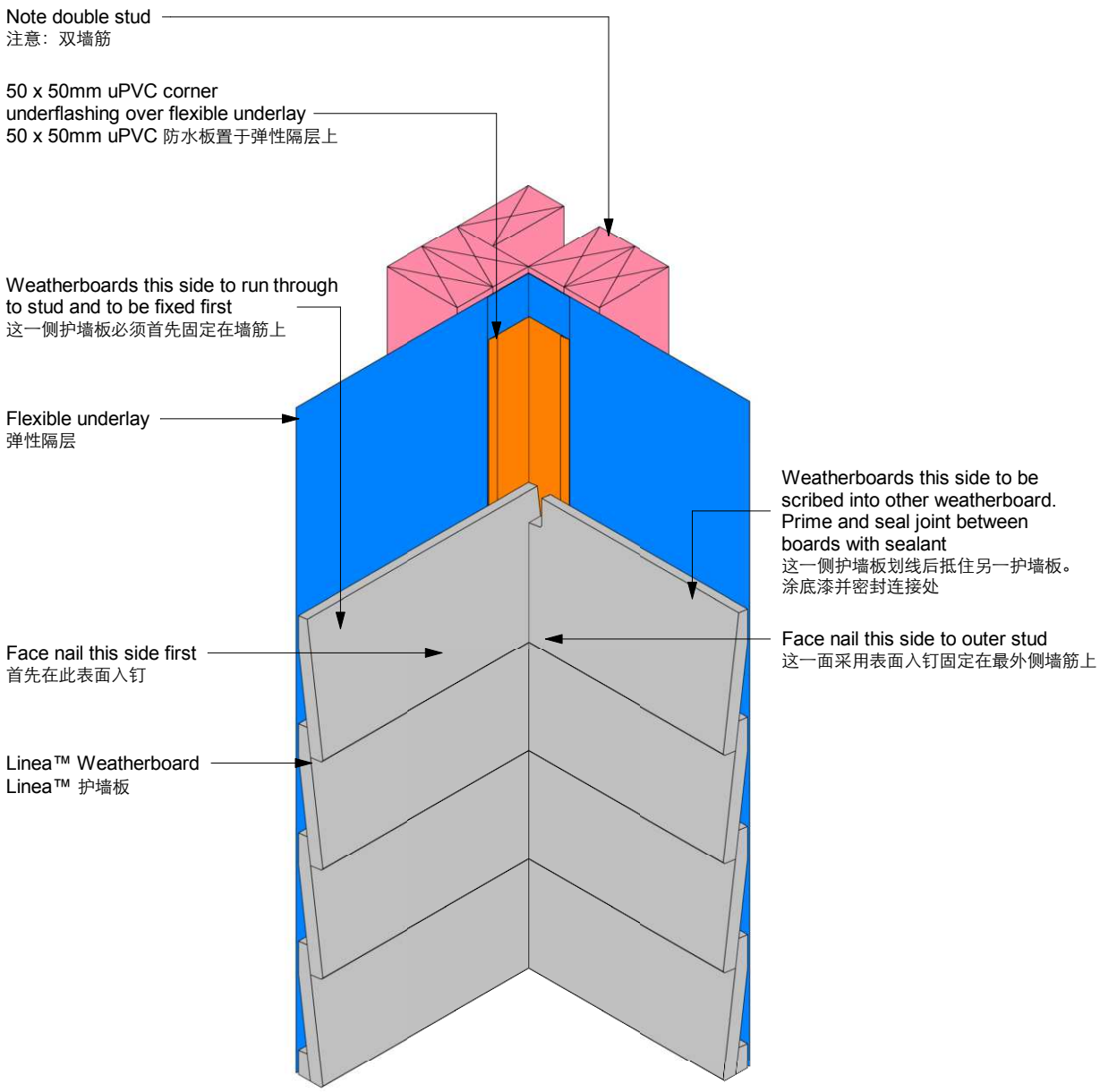
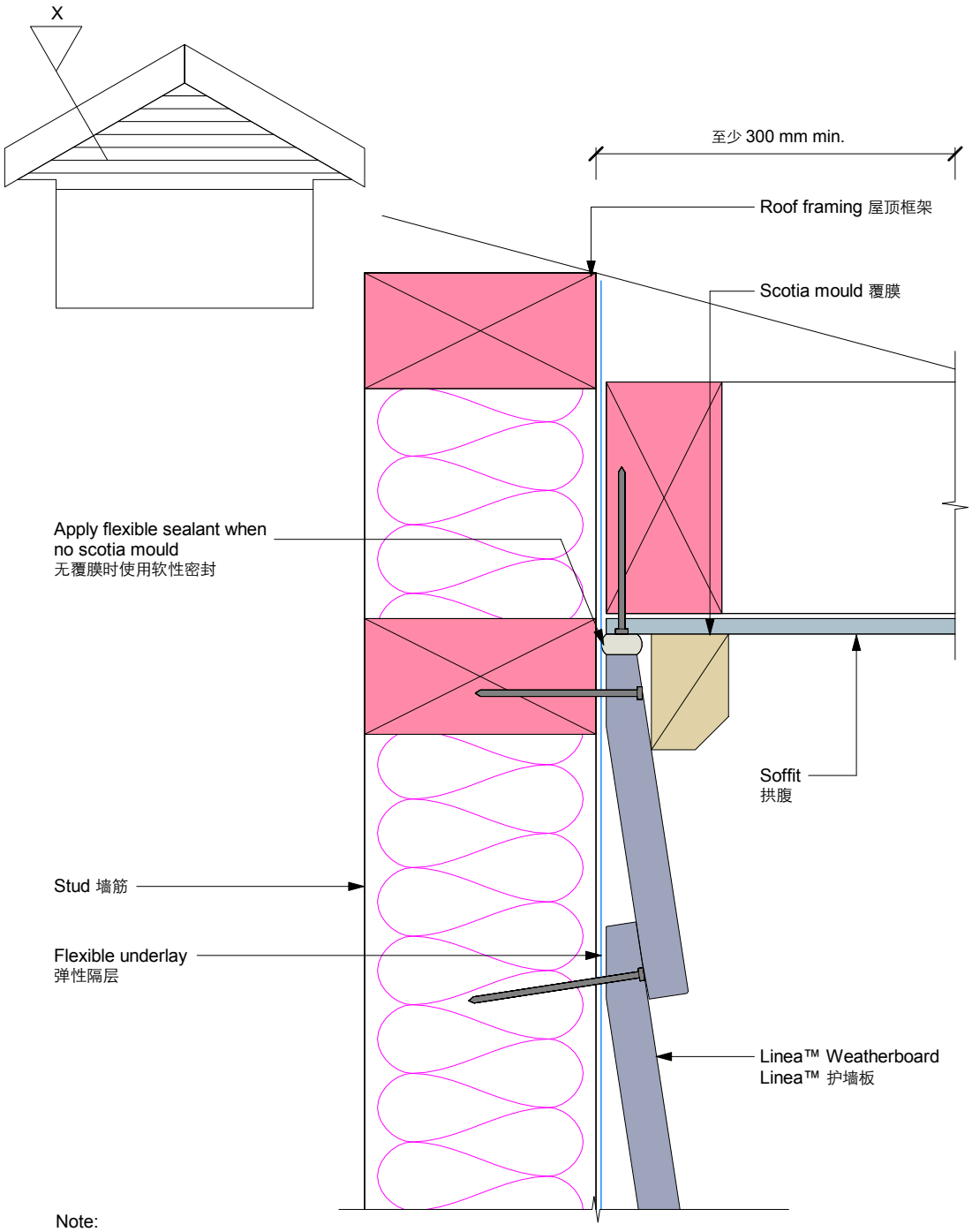


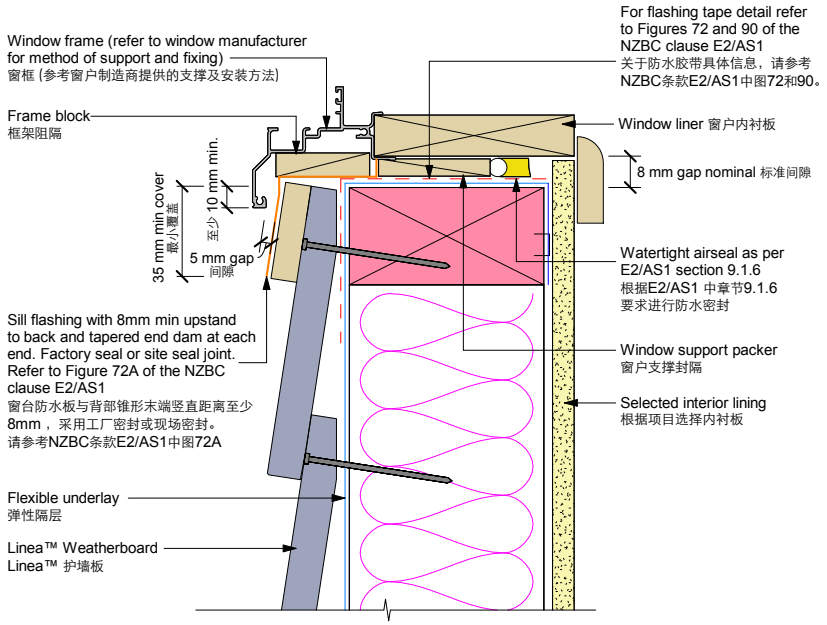
Figure 12: Wall to soffit junction 'X' | 图 12: 墙到拱腹的X形连接



Note:
Alternatively the scotia can be scribed and sealed to Linea™ Weatherboard and the soffit lining
另一种方式是划刻并密封覆膜至Linea™护墙板和拱腹内衬。

For soffits more than 300mm the Linea™ Weatherboard can be neat cut and silicone sealed to angle of soffit
拱腹长度超过300mm时，可对Linea™护墙板进行切割并与拱腹密封。

Figure 13: Window sill | 图 13: 窗台

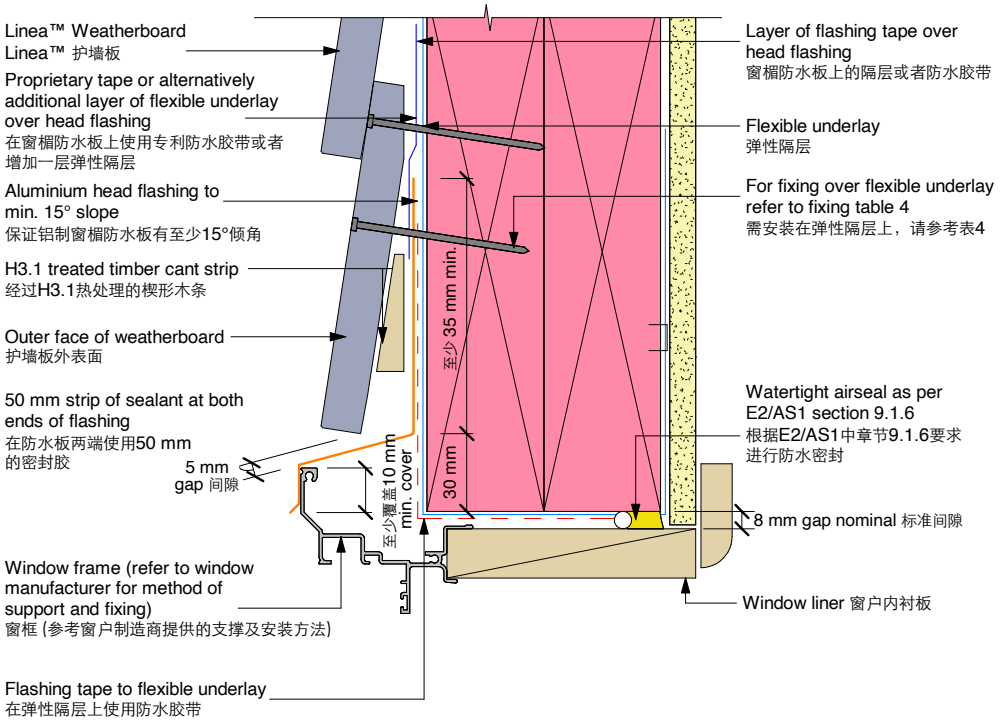


General notes for materials selection
关于材料选择的注意

1. Flashing materials must be selected based on environmental exposure, refer to NZS 3604 and Table 20 of NZBC E2/AS1
   防水板材料需要根据环境暴露程度选择，请参考NZS 3604和 NZBC E2/AS1中表20
2. Flexible underlay must comply with acceptable solution E2/AS1
   弹性隔层必须符合合格方案条款E2/AS1的规定
3. Flashing tape must have proven compatibility with the selected flexible underlay and other materials with which it comes into contact
   水胶带必须与弹性隔层和其他接触的材料相兼容

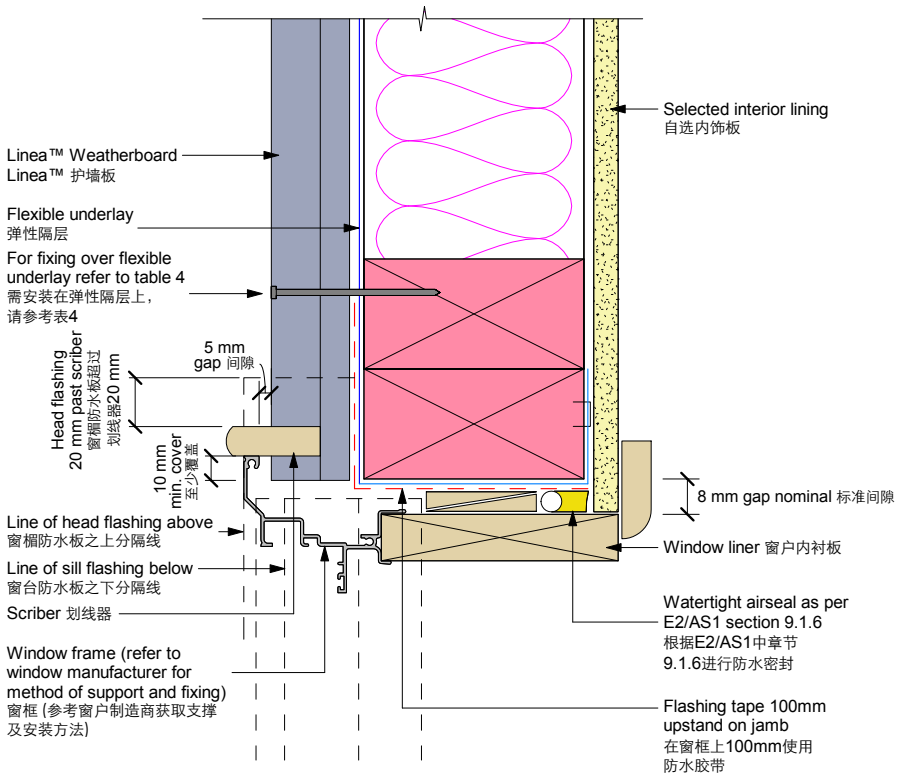
Refer to the manufacturer or supplier for technical information for these materials
相关材料的技术信息请详询制造商或供应商

Figure 14: Window head | 图 14: 窗楣



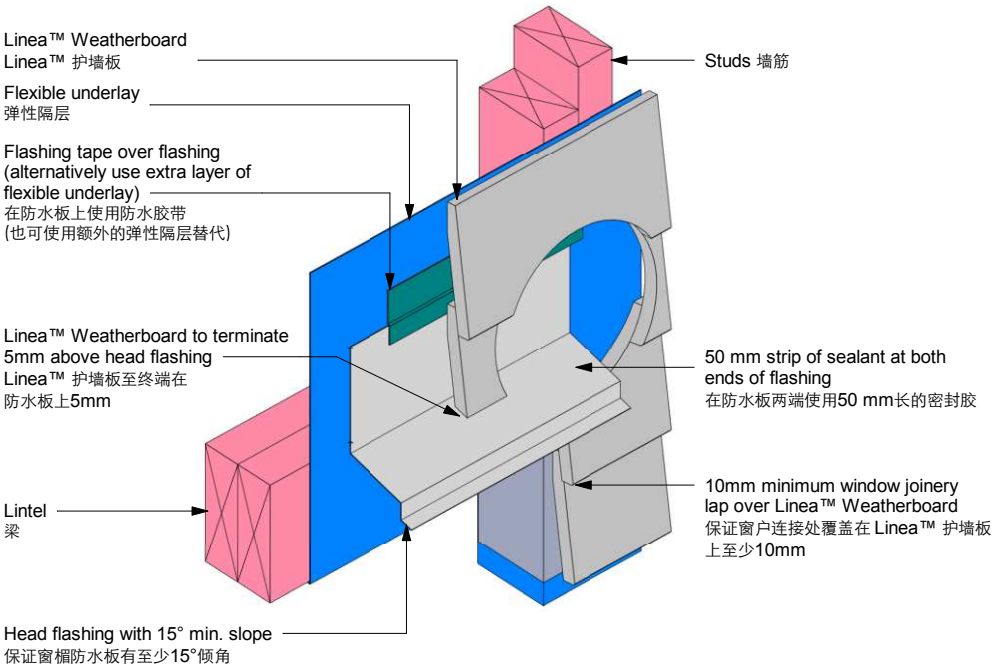
Note 注意:
Sealant must be installed between head flashing and window flange in wind zones VH. Refer Figure 71 of E2/AS1
参考E2/AS1中图71，在VH风压区必须在窗楣防水板和窗户法兰之间使用密封胶

Figure 15: Window jamb | 图 15: 窗框



Note: Alternatively window jamb can be formed as per E2/AS1 with jamb battens
注意：也可按照E2/AS1规定的板条制作窗框

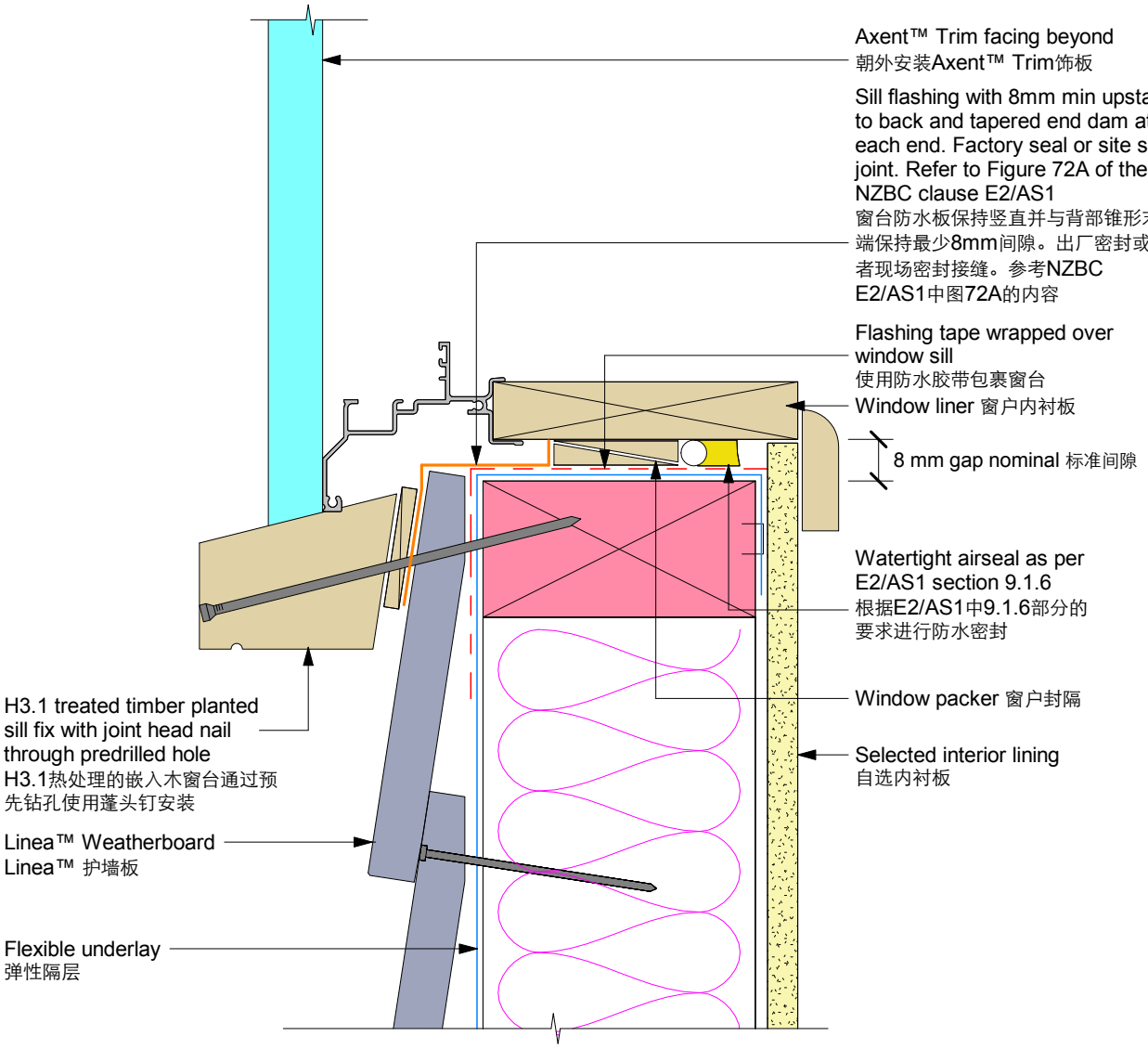
Figure 16: Head flashing termination | 图 16: 窗楣防水板终端



Note 注意:

- Site cut edges to be primed
  所有现场切割的切面必须上底漆
- Accurate slot to be cut in weatherboard to enable fit around head flashing. Prevent moisture ingress at end of slot by sealing gap
  请精确切割护墙板使之能适合窗楣防水板。可以通过密封防止湿气侵入切割位置。

Figure 17: Window sill with facing | 图 17: 带有装饰板的窗台

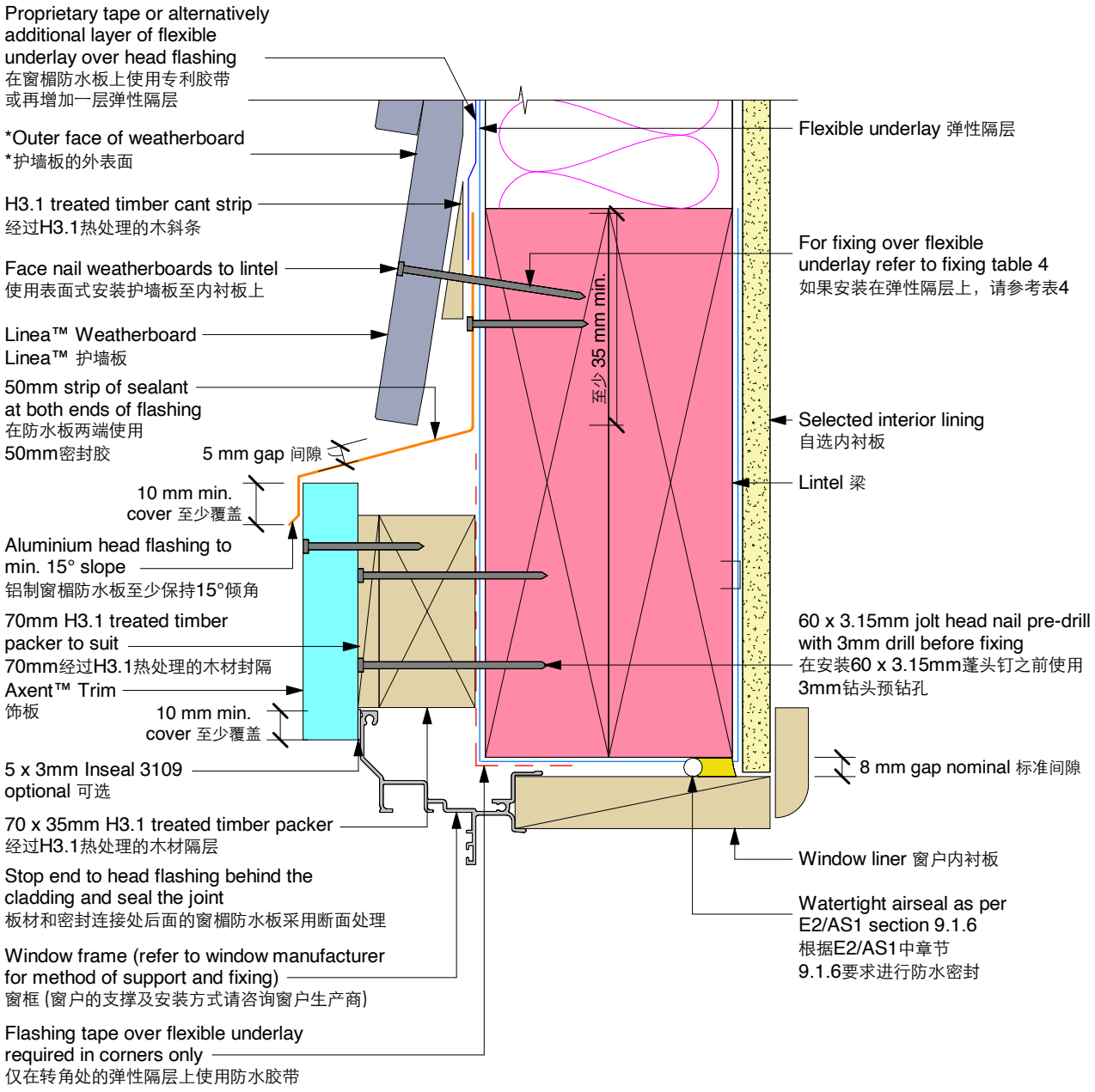


General notes for materials selection
材料选择的建议

1. Flashing materials must be selected based on environmental exposure, refer to NZS 3604 and Table 20 of NZBC E2/AS1
   防水板材料的选择需要根据环境暴露程度决定，参考NZS 3604以及NZBC E2/AS1中表20的内容
2. Flexible underlay must comply with acceptable solution E2/AS1
   弹性隔层必须符合合格方案条款E2/AS1的规定
3. Flashing tape must have proven compatibility with the selected flexible underlay and other materials with which it comes into contact
   防水胶带必须与弹性隔层和其他接触材料相兼容

Refer to the manufacturer or supplier for technical information for these materials
请参考制造商或供应商获取相关的技术参数

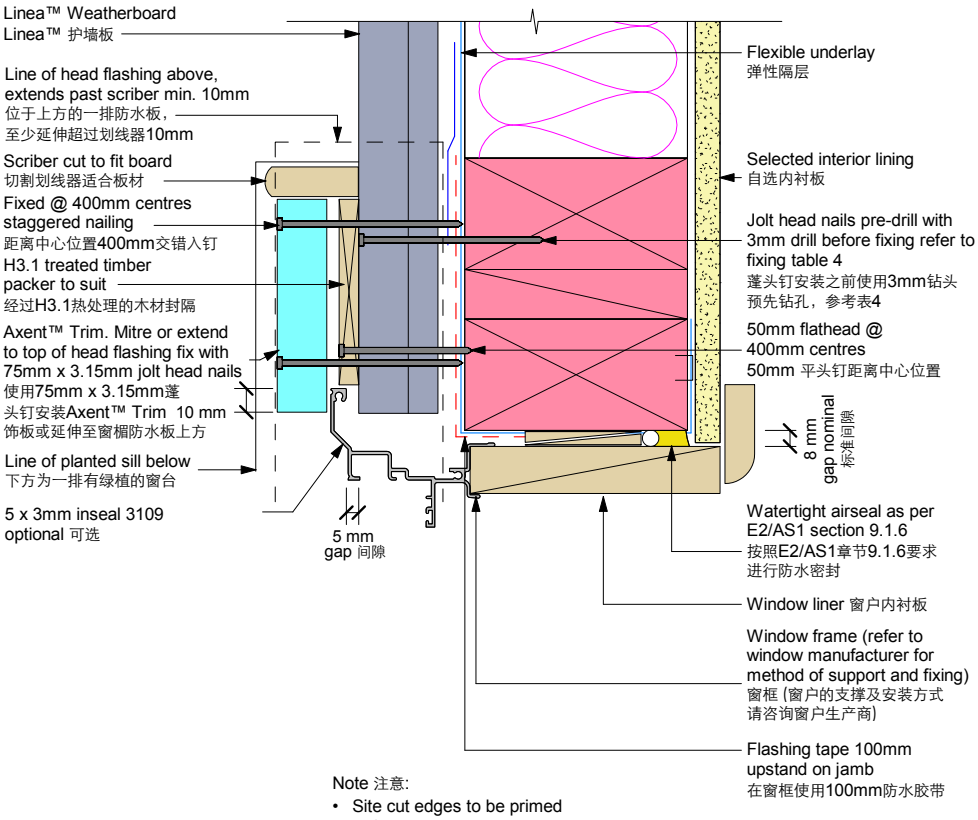
Figure 18: Window head with facing | 图 18: 带有装饰板的窗楣



Note 注意:

- Sealant must be installed between head flashing and Axent™ Trim in VH wind zones
  在VH风压区，必须在窗楣防水板和Axent™ Trim饰板之间使用密封胶
- Alternatively, the head flashings can be formed with stop ends as per E2/AS1
  根据E2/AS1的规定，窗楣防水板也可用断面替代

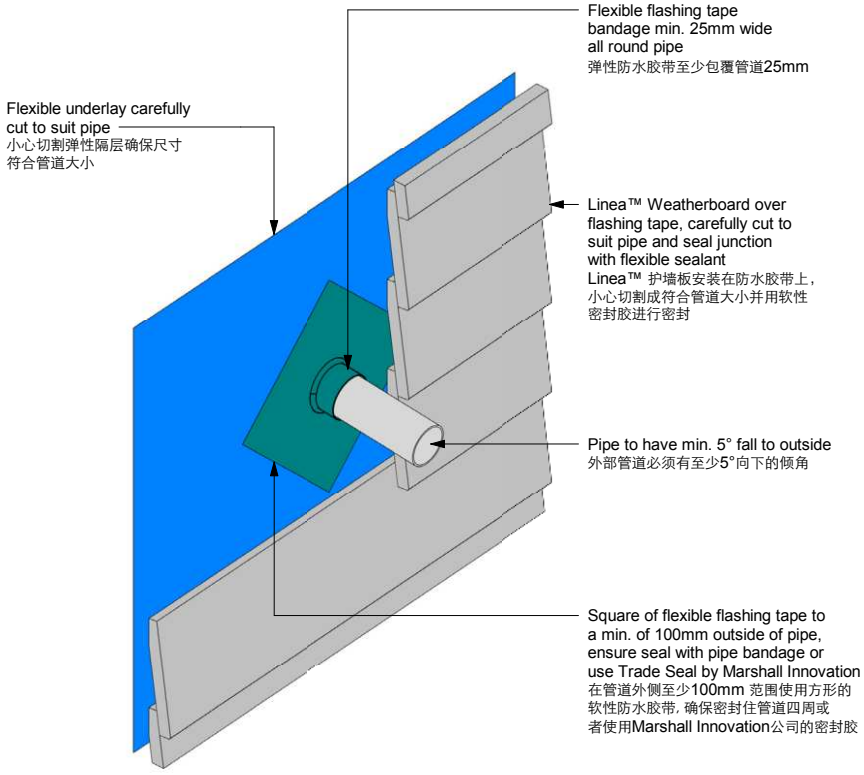
Figure 19: Window jamb with facing | 图 19: 带有装饰板的窗框



Note 注意:

- Site cut edges to be primed
  所有现场切割的切面必须上底漆

Figure 20: Pipe penetration | 图 20: 管道穿透



Note: Site cut edges to be primed
注意: 所有现场切割的切面必须上底漆

Figure 21: Continous cladding over joist | 图 21: 龙骨上方的连续墙面

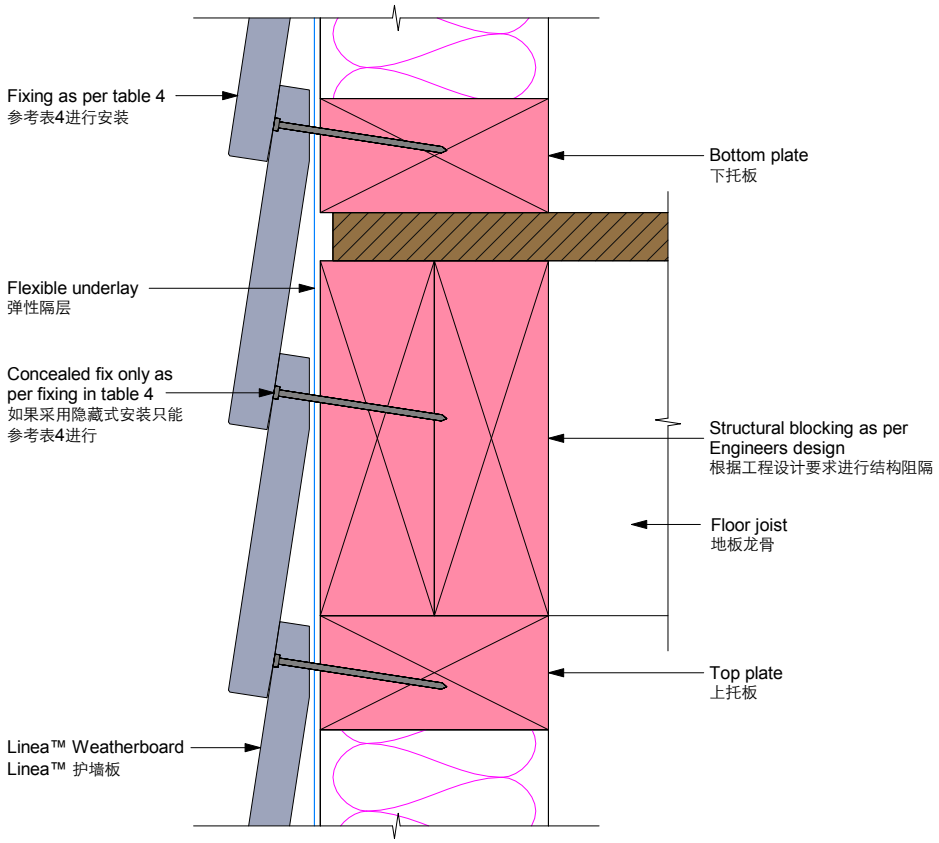


Figure 22: Timber deck junction | 图 22: 木露台接缝

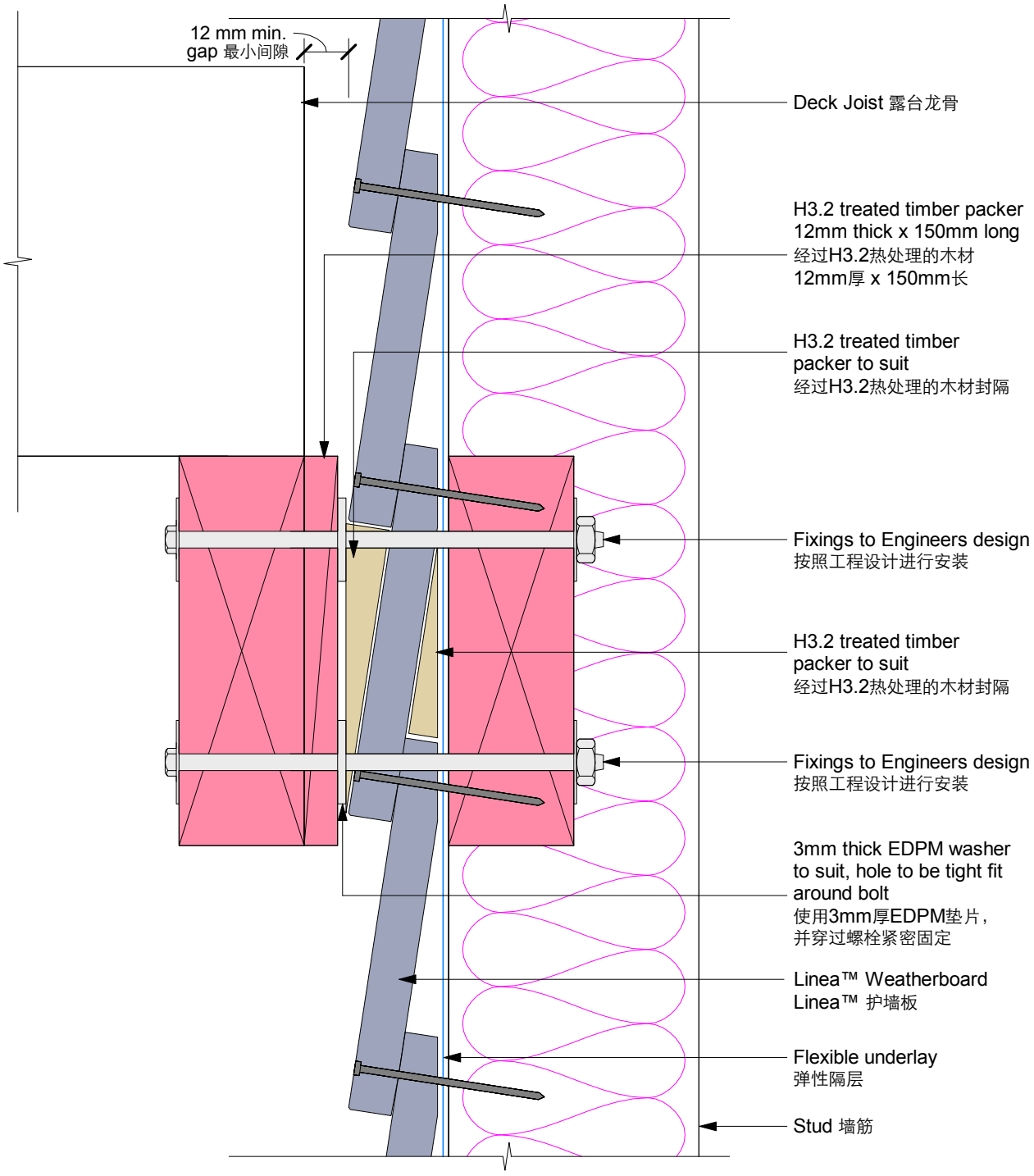
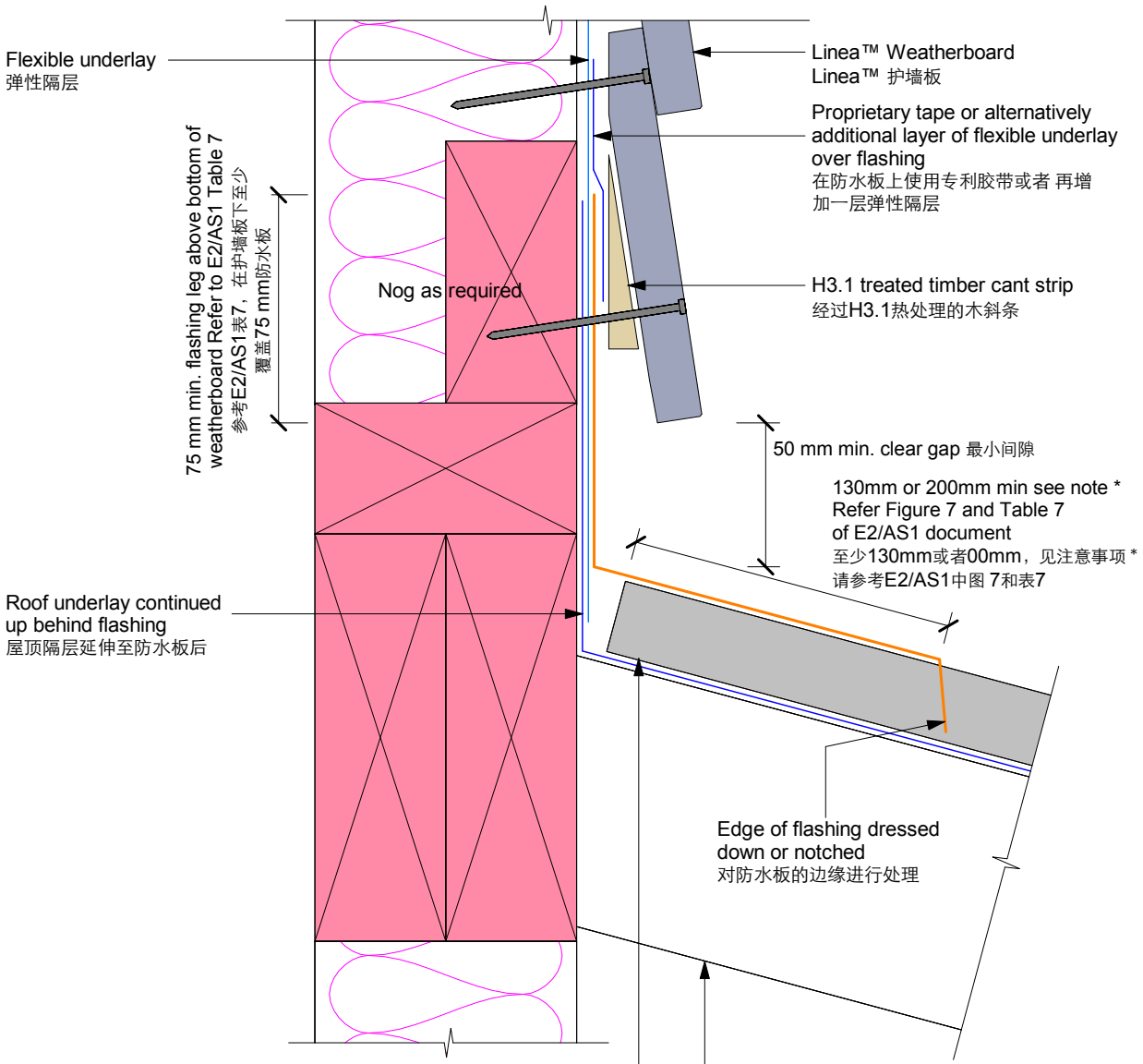


Figure 23: Apron flashing detail | 图 23: 烟囱防水板详图



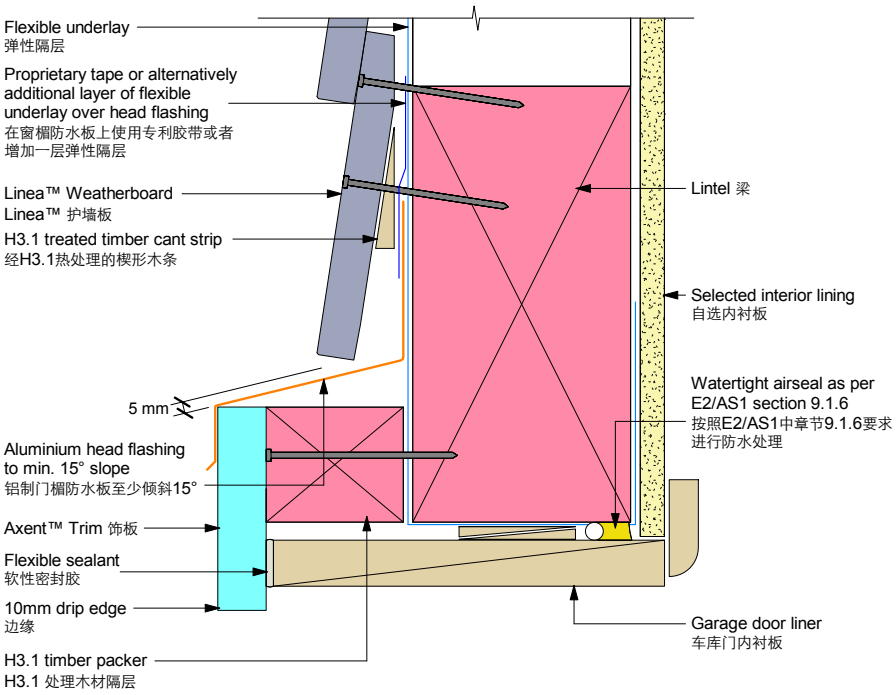
Notes 注意:

* When 50 year durability for flashing is required refer to Table 20 of E2/AS1 of the NZBC

* 当防水板的耐久性需要达到50年，请参考NZBC中表20条款E2/AS1的规范

Site cut edges to be primed
所有现场切割的切面必须上底漆

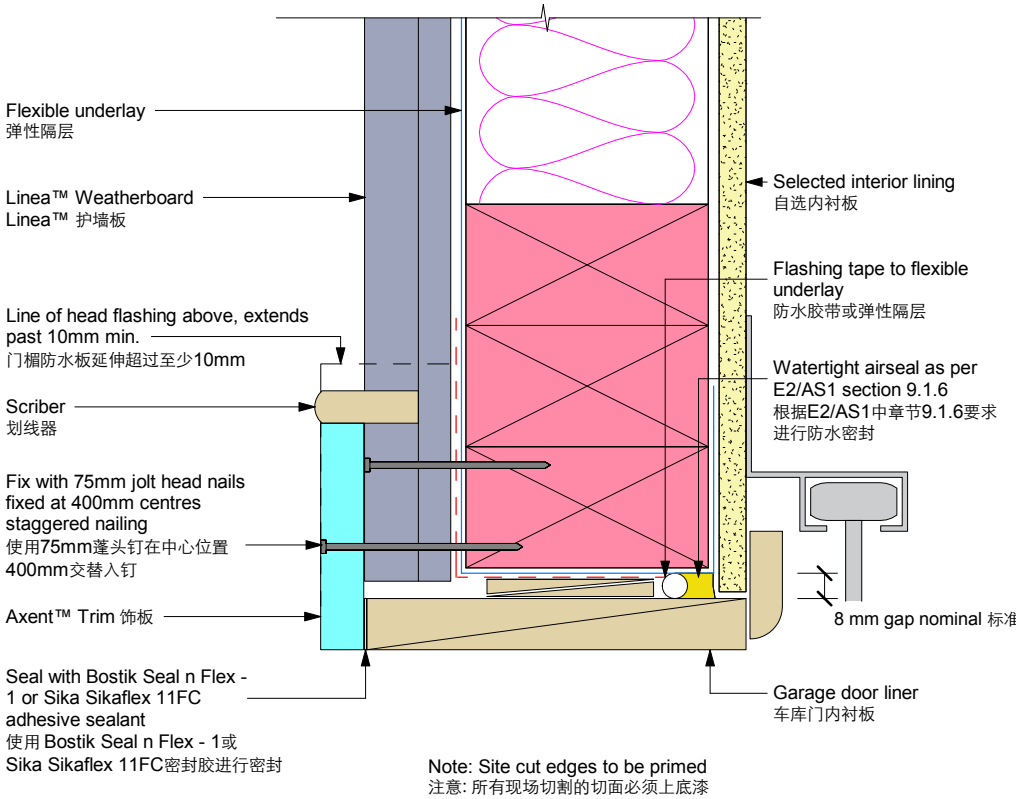
Figure 24: Garage door head | 图 24: 车库门楣



Note:

- Sealant must be installed between head flashing and window flange in VH wind zones. Refer Figure 71 of E2/AS1
  在VH风压区必须在门楣防水板和窗户法兰之间使用密封胶，参考E2/AS1中图71
- Site cut edges to be primed
  所有现场切割的切面必须上底漆

Figure 25: Garage door jamb | 图 25: 车库门框



Note: Site cut edges to be primed
注意: 所有现场切割的切面必须上底漆

Product Warranty
质量保证

James Hardie New Zealand Limited ("James Hardie") warrants for a period of 25 years from the date of purchase that the Linea™ Weatherboard (the "Product"), will be free from defects due to defective factory workmanship or materials and, subject to compliance with the conditions below, will be resistant to cracking, rotting, fire and damage from termite attacks to the extent set out in James Hardie's relevant published literature current at the time of installation. James Hardie warrants for a period of 15 years from the date of purchase that the Axent™ Trim and accessories supplied by James Hardie will be free from defects due to defective factory workmanship or materials.

James Hardie 新西兰有限公司（简称 "James Hardie"）保证 Linea™ 护墙板（简称 "产品"）在售出之日起的25年内，不会出现由于做工及材料问题所导致的产品缺陷。在满足以下质保条件的情况下，其防裂、耐腐蚀、抗火、防白蚁咬噬的性能会达到安装当时 James Hardie 所发布的最新相关文献中所声明的程度。James Hardie 担保，由 James Hardie 所售卖的 Axent™ Trim 饰板及配件在购买之日起的15年内不会出现由于做工或材料问题所导致的损坏。

Nothing in this document shall exclude or modify any legal rights a customer may have under the Consumer Guarantees Act or otherwise which cannot be excluded or modified at law.
本文件中的任何内容都不能剥夺或削弱消费者保护法（Consumer Guarantees Act）所规定的任何消费者合法权利，因其是无法被剥夺或削弱的。

CONDITIONS OF WARRANTY 质保条件:

The warranty is strictly subject to the following conditions:
本质量保证严格受到以下担保条件的限制：

a) James Hardie will not be liable for breach of warranty unless the claimant provides proof of purchase and makes a written claim either within 30 days after the 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.
索赔者必须提供购买凭证，且应当在产品缺陷被发现之日起的30天内递交书面的投诉声明，否则 James Hardie 将不承担任何违约责任。或者，如果产品有在安装前就能发现的明显缺陷，则消费者必须在安装前递交投诉；

b) This warranty is not transferable.
本质量保证不可转移；

c) The Product must be installed and maintained strictly in accordance with the relevant James Hardie literature current at the time of installation and must be installed in conjunction with the components or products specified in the literature. Further, all other products, including coating and jointing systems, applied to or used in conjunction with the Product must be applied or installed and maintained strictly in accordance with the relevant manufacturer's instructions and good trade practice.
产品必须按照安装当时现行的 James Hardie 相关说明文件进行安装和维护，且必须按照说明文件中的要求选择配套使用的产品。而且，使用中所有用于本产品之上或与本产品相接触的产品，包括涂料和固件连接系统，都必须严格按照相应制造商的说明和销售演示进行使用、安装和维护；

d) The project must be designed and constructed in strict compliance with all relevant provisions of the current New Zealand Building Code ("The NZBC"), regulations and standards.
工程的设计和施工必须严格遵守现行版新西兰建筑规范 (NZBC) 的各项相关规定，以及其他法律和规范；

e) The claimant's sole remedy for breach of warranty is (at James Hardie's option) that James Hardie will either supply replacement product, rectify the affected product or pay for the cost of the replacement or rectification of the affected product.
如果违约成立，索赔方所获得的唯一补偿（由 James Hardie 选择）为：James Hardie 将为消费者替换合格的产品，或修复有缺陷的产品，或赔偿消费者替换产品或修复产品所产生的费用；

f) James Hardie will not be liable for any losses or damages (whether direct or indirect) including property damage or personal injury, consequential loss, economic loss or loss of profits, arising in contract or negligence or howsoever arising. Without limiting the foregoing James Hardie will not be liable for any claims, damages or defects arising from or in any way attributable to poor workmanship, poor design or detailing, settlement or structural movement and/or movement of materials to which the Product is attached, incorrect design of the structure, acts of God including but not limited to earthquakes, cyclones, floods or other severe weather conditions or unusual climatic conditions, efflorescence or performance of paint/coatings applied to the Product, normal wear and tear, growth of mould, mildew, fungi, bacteria, or any organism on any Product surface or Product (whether on the exposed or unexposed surfaces).

无论源于合同、个人疏忽或其他原因，James Hardie 不对任何(直接的或间接的)损失或损坏负责，包括财产损坏或人身伤害、间接性损失、经济损失或利润损失。在不改变或限制上述条件的前提下，James Hardie 也不对任何由于以下原因所导致的损失、破坏或故障承担责任：不合格的施工工艺，不合格的设计或详图，地表沉降或结构性移动/或该产品所附着物的移动，错误的房屋结构设计，不可抗因素（包括但不限于地震、龙卷风、洪水或其它恶劣气候条件或罕见天气等），风化或产品的涂漆/涂料性能不佳，正常磨损与消耗，产品表面或产品本身(不管在暴露面还是内部)发霉、真菌生长、细菌或其它微生物生长等导致的损害和缺陷;

g) All warranties, conditions, liabilities and obligations other than those specified in this warranty are excluded to the fullest extent allowed by law.
在法律许可的范围内，所有除本质量保证所包含条款之外的其他任何保证、条件、责任和义务都不在承诺范围之内;

h) If meeting a claim under this warranty involves re-coating of Products, there may be slight colour differences between the original and replacement Products due to the effects of weathering and variations in materials over time.
如果依据本保证书提出的某项索赔成立，而赔偿内容涉及到重新喷涂某产品，则由于天气或不同时段材料差异的原因，替换 产品和原产品之间可能存在色差。

Disclaimer: The recommendations in James Hardie's literature are based on good building practice, but are not an exhaustive statement of all relevant information and are subject to conditions (c), (d), (f) and (g) above. James Hardie has tested the performance of Linea™ Weatherboard when installed in accordance with the appropriate Linea Weatherboard (cavity or direct fixed) technical specifications, in accordance with the standards and verification methods required by the NZBC and those test results demonstrate the product complies with the performance criteria established by the NZBC. However, 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 its literature and the performance of the relevant system, including its suitability for any purpose or ability to satisfy the relevant provisions of the NZBC, regulations and standards, as it is the responsibility of the building designer to ensure that the details and recommendations provided in the relevant James Hardie installation manual are suitable for the intended project and that specific design is conducted where appropriate.

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