Linea™ Oblique™
WEATHERBOARD

横向安装法
技术规范

2018年11月 | 新 西 兰

扫描二维码，即可阅读

Contents 目录

1 APPLICATION AND SCOPE 用途与范围 3
1.1 Application 用途 3
1.2 Scope 范围 3
1.3 Details 详图 3
1.4 Specific design 特殊设计 3

2 DESIGN 设计 3
2.1 Compliance 达标情况 3
2.2 Responsibility 责任 3
2.3 Site and foundation 施工现场与地基 4
2.4 Surface clearances 接地间隙 4
2.5 Moisture management 湿度控制 4
2.6 Structure 结构 5
2.7 Fire rated walls 墙体防火等级 5
2.8 Structural bracing 结构支撑 5
2.9 Energy efficiency 隔热能效 5

3 FRAMING 框架 6
3.1 General 概述 6
3.2 Timber framing 实木框架 6
3.3 Special framing requirements 特殊的框架要求 6
3.4 Tolerances 误差 6

4 PREPARATION 7
4.1 Flexible underlay/HomeRAB Pre-Cladding 弹性隔层/HomeRAB™预置垫板 7
4.2 RAB™ Board RAB刚性密封板 7
4.3 Cavity closure/vent strip 空心腔开口/通风带 7
4.4 Cavity battens 空心结构板条 7
4.5 Intermediate support 居中支撑 8
4.6 Flashings 防水板 8
4.7 Junctions and penetrations 接缝与穿透 8

5 INSTALLATION 安装 8
5.1 General 概述 8
5.2 Fastener durability 固件的耐久性 9
5.3 Fastener – size and layout 固件——尺寸与布局 9

6 JOINTS 连接 10
6.1 Vertical joint 垂直连接 10
6.2 Horizontal joint 水平连接 10
6.3 Drainage joint 排水连接 10
6.4 External corner 阳角连接 10
6.5 Internal corner 阴角连接 10

7 FINISHES 表面处理 10
7.1 Preparation 准备工作 10
7.2 Painting 涂漆 10
7.3 Flexible sealant 软性密封胶 11

8 STORAGE AND HANDLING 储存及搬运 11

9 MAINTENANCE 维护 11

10 PRODUCT INFORMATION 产品信息 12
10.1 Manufacturing and classification 制造工艺与分类 12
10.2 Product mass 产品重量 12
10.3 Durability 耐久性 12

11 SAFE WORKING PRACTICES 安全施工守则 12

12 PRODUCT AND ACCESSORIES 产品及附件 15

13 DETAILS 详图 18

PRODUCT WARRANTY 产品质保 42

YOUR FEEDBACK
我们重视您的反馈意见

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:

为持续开发我们的产品及服务体系，我们重视您的意见。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：

Ask James Hardie™
literaturefeedback@jameshardie.co.nz

Ask James Hardie™
传真：0800 808 988
电子邮箱： literaturefeedback@jameshardie.co.nz

1 Application and scope 用途与范围

1.1 APPLICATION 用途

Linea™ Oblique™ Weatherboard installed as per this specification gives a rusticated profile weatherboard appearance. Linea Oblique Weatherboard can be fixed to timber-framed external walls. A wide range of colours can be used, varying from light to dark. Linea Oblique Weatherboard is available in 200mm or 300mm wide x 4200mm or 2700mm lengths and is 16mm thick.

按照本规范安装的Linea™ Oblique™护墙板会形成一种纵向轮廓鲜明、质感粗琢的板材外观。 Linea外墙板可以安装在实木框架的外墙上。该板材有由浅到深的多种颜色可供选择，板材尺寸可选200/300mm宽 * 4200mm长或2700mm长，厚度为16mm。

Specifiers 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。

Installers 项目施工者

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. All of the details provided in this document must be read in conjunction with the project 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方面的规定。本文件中所提供的所有详图都务必结合施工项目本身的详图进行阅读。

Make sure your information is up to date
确保您获得的信息是最新的

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.

当您需要讲解或安装James Hardie的产品时，请确保您手头拥有最新版本的技术手册。欲得到更多的安装信息、质保说明及安全提示,请登录 www.jameshardie.co.nz网站，或拨打0800 808 868电话，向James Hardie咨询。

1.2 SCOPE 范围

This specification covers the installation of Linea Oblique Weatherboard fixed horiztonally over timber cavity battens on buildings that fall within the scope limitation of NZS 3604 and E2/AS1 of the New Zealand Building Code (NZBC).

本技术规范涵盖了Linea斜边护墙板横向安装在木质空心结构水平板条上的应用，适用建筑物类型包括在《新西兰3604号国家标准（NZS3604）》和《新西兰建筑规范 (NZBC) 》合格方案第1.1部分E2/AS1条款中所列的各种建筑物。

This specification also covers the installation of Linea Oblique Weatherboard on projects, which are subject to specific engineering design (SED) up to a wind pressure of 2.5kPa (ULS).
本规范也涵盖了在可承受最大风压为2.5kPa (ULS) 的“特殊设计项目（SED）”中，Linea Oblique护墙板的安装方法。

1.3 DETAILS 详图

Various typical Linea Oblique Weatherboard horizontal construction details are provided in the Details section of this document.These details are available in dwg, dxf, jpg and pdf file format and can be downloaded from our website at www.jameshardie.co.nz.

Linea Oblique护墙板材安装施工的各种详图都可在本文档的“详图”部分找到。您也可以前往我们的网站www.jameshardie.co.nz，那里可下载到本文档的CAD、ArchiCAD、MOD及pdf格式版本。

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。

1.4 SPECIFIC DESIGN 特殊设计

For use of Linea Oblique Weatherboard on a specific design project that is outside the scope of this literature, the designer, architect or engineer must ensure that applicable clauses of the NZBC have been considered and a specific design has been undertaken. Linea Oblique Weatherboard is suitable for use in SED project up to a wind pressure of 2.5kPa (ULS).

如要将Linea Oblique护墙板应用于超出本文档所述使用范围的其它用途， 则建筑师、设计师或工程师必须确保该应用符合NZBC的相关条款规定，并进行相应的具体设计。 Linea Oblique护墙板适用于最大风压为2.5kPa (ULS) 的“特殊设计 项目（SED）中。

2 Design 设计

2.1 COMPLIANCE 达标情况

Linea Oblique Weatherboard has been issued a Code Mark certificate number GM-CM30059 which confirms Linea Oblique Weatherboard is deemed to comply with the requirements of the NZBC. Please refer to our website www.jameshardie.co.nz for a copy of the Code Mark certificate. Linea Oblique Weatherboard has been appraised by BRANZ as an alternative solution and found to meet the required provisions of the NZBC when installed in accordance with this Linea Oblique Weatherboard Horizontal Installation technical specification. BRANZ Appraisal number 896 (2015) at www.branz.co.nz

Linea Oblique护墙板已获得Code Mark代码标识证书，编号为GM-CM30059，确并且符合NZBC的标准和要求。 请登录我们的网站www.jameshardie.co.nz获取Code Mark代码标记证书的副本。 Linea Oblique护墙板已被BRANZ评估为一种替代解决方案，且只要按照这本《Linea Oblique护墙板纵向安装技术规范》进行安装，就可达到新西兰建筑规范（NZBC）标准中的各项要求。 BRANZ评估号896（2015），网址：www.branz.co.nz

2.2 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. For applications outside the scope of this literature and details, which are not provided herein, the architect, designer or engineer must undertake specific design and it should be ensured that the intent of their design meets the requirements of the NZBC.

施工监管方或其他责任方必须确保所计划的用途与本文件中所陈述的信息及详图一致，并对额外增加的或特殊设计的部分加以额外详细说明及提供详图。如有超出本施工规范的描述及详图之外的用途，则建筑师、设计师或工程师必须进行具体的工程设计，并确保所有设计符合新西兰建筑规范（NZBC）的要求。

All New Zealand Standards referenced in this document are current editions and must be complied with.

本手册中引用的所有“新西兰标准”都指现行版本，须严格遵守。

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.

James Hardie执行严格的质量检验程序，以确保出厂的任何产品都符合我们的质量要求。在安装前，确认产品符合客户的审美要求是施工者的责任。 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。

2.3 SITE AND FOUNDATION施工现场与地基

The site on which the building is situated must comply with the NZBC Acceptable Solution E1/AS1 ‘Surface Water’. Foundation design must comply with the requirements of NZS 3604 ‘Timber-framed Buildings’ or be as per specific engineering design.

建筑物所在的位置必须符合NZBC合格方案中E1/AS1条款“地表水”部分的要求。地基的设计必须符合NZS 3604“实木框架建筑”部分的要求，或者符合其本身特殊工程设计的要求。

The grade of adjacent finished ground must slope away from the building to avoid any possibility of water accumulation in accordance with the NZBC requirements.

根据新西兰建筑规范（NZBC）的要求，与房屋相连接的已铺地面其坡度必须由房屋起向外向下倾斜，以避免造成积水。

2.4 SURFACE CLEARANCES 接地间隙

The clearance between the bottom edge of the 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.

护墙板下缘与已铺／未铺地面的间隙必须符合NZBC合格方案E2/AS1部分第9.1.3条中的相应规定。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的标准，贯穿建筑物寿命始终。

Linea Oblique Weatherboard must overhang the bottom plate by a minimum of 50mm, as required by E2/AS1.

根据NZBC合格方案第E2/AS1部分的规定，Linea Oblique护墙板必须用于建筑物下托板的外层，并与下托板保持至少50mm的空隙。

Linea Oblique Weatherboard must maintain a minimum clearance of 100mm from paved ground, and 175mm from unpaved ground.

Linea Oblique护墙板的下缘必须与已铺地面保持至少100mm的距离，与未铺地面保持至少175mm的距离。

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

当用于屋顶及露台时，该间隙须大于等于50mm。

Do not install external cladding such that it may remain in contact with water or ground. Refer Figures 3 and 4.
不要将外墙板材安装在可能持续接触到水或地面的地方。参见图3和图4。

2.5 MOISTURE MANAGEMENT 湿度控制

It is the responsibility of the specifier to identify moisture related risks associated with any particular building design.
发现及控制由某种建筑设计而产生的湿度风险是施工监管者的责任。

Wall construction design must effectively manage moisture, considering both interior and exterior environments of the building, particularly in buildings that have a higher risk of wind driven rain penetration. The building should also be ventilated sufficiently to control moisture accumulation due to condensation, especially in artificially cooled/heated buildings.
墙体结构的设计必须通过考量室内外的环境因素而有效控制室内湿度，特别是那些由于风向原因而容易灌入雨水的建筑。同时建筑应当充分通风，以减少由于水汽凝结而产生的湿气聚集，对于那些经常使用人工制冷或制热的建筑尤其需要注意。

Walls must include those provisions as required by the NZBC Acceptable Solution E2/AS1. 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. For further guidance on designing for weather tightness, 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

墙体结构需要符合NZBC合格方案第E2/AS1中湿气控制部分的相关规定。另外，所有的不封闭墙体、被穿透墙体、墙体接缝、墙体连接，及窗台、窗楣和窗户边框处，都必须安装合适的防水板用于隔离湿气。墙体外侧的其他用于控制室内湿度的材料、部件及其安装方式， 都须要符合NZBC的相关标准要求。欲了解更多有关防雨防潮设计的信息，请到www. branz.co.nz参阅新西兰建筑研究协会(BRANZ)的资料更新，或到www.building.govt.nz参阅新西兰商业创新与就业部 (MBIE)提供的最新信息。

In addition, the following issues must also be considered:
同时，也请考虑以下问题：

- Sealant must be installed where detailed in this literature.
  – 在本规范中详图说明要使用密封剂处，请务必使用。
- Where the walls are higher than two storeys, it is necessary to provide a horizontal flashing at the second floor level to drain the cavity.

当墙体高度高于两个楼层时，需要在在第二层处安装一块水平的防水板，以便将墙体夹层的湿气排出室外。

- The installation of smoke chimneys, pipe penetrations and other fixtures etc. must not track moisture into the wall or restrict the drainage of moisture to the exterior.
- 当安装烟囱、烟道及其它固定设施时，必须防止将湿气引入墙体，或阻碍湿气被排出室外的现象发生。

2.6 STRUCTURE 结构

2.6.1 Timber Framing 实木框架结构

Timber-framed buildings must either be in accordance with NZS 3604 (Timber-framed Buildings) or designed as per specific engineering design. For a building requiring a specific engineering design, the framing stiffness must be equivalent to, or more than, the stiffness requirements of NZS 3604.

木框架结构建筑物必须符合NZS3604标准的“木框架结构建筑（Timber Framed Buildings）”部分的规定，或按照其本身具体的特殊工程设计而建。当建筑物需要进行特殊工程设计时，其框架结构硬度必须符合或大于NZS3604有关框架结构硬度的要求值。

For specific design projects, the timber framing must be designed in accordance with the requirements of NZS 3603 and AS/NZS 1170.

对于特殊工程设计建筑物，其木框架结构的设计必须符合NZS 3603和AS/NZS 1170的要求。

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 generated by loadings etc.

对于长度超过12米的木框架墙体，最佳处理方法是给施工接缝留出一定移动错位的空间，以适应后期木材缩小及负重变形等现象所导致的移动错位。

2.6.2 Wind Pressures 风荷载

Linea Oblique Weatherboard is suitable for use in wind zones up to and including EH as defined in NZS 3604.
Linea Oblique护墙板外墙可适用于新西兰境内的符合NZS 3604定义的所有EH及其以下级别风区。

Linea Oblique Weatherboard is also suitable in specific design projects up to wind pressures of 2.5kPa ULS.

此外，Linea Oblique护墙板还适用于风压小于等于2.5kPa（ULS）的特殊工程设计项目。

2.7 FIRE RATED WALLS 墙体防火等级

Linea Oblique Weatherboard when fixed over timber cavity battens to external walls can achieve fire ratings up to 60/60/60 to comply with Clause C/AS1 of the NZBC, when the walls are constructed in accordance with the current James Hardie ‘Fire and Acoustic’ Design Manual.
只要按照现行的《James Hardie消防与隔音设计手册》(James Hardie ‘Fire and Acoustic’ Design Manual)的指导进行安装，固定于木框架板条空心结构外墙上的Linea Oblique护墙板材都可达到60/60/60之高的防火等级，符合NZBC中的C/AS1 条款。

Linea Oblique Weatherboard is classified as a 'non-combustible' material suitable for use on walls close to a boundary.

Linea护墙板材被划分为不可燃物，可以被用于墙体边界。

2.8 STRUCTURAL BRACING 结构支撑

Linea Oblique Weatherboard installed as per this specification cannot be used to achieve any structural bracing. However, bracing can be achieved by using RAB Board by James Hardie installed direct to framing instead of a flexible underlay or by using Villaboard™ Lining bracing system on the internal face of the wall. Refer to the James Hardie Bracing Design Manual for further information.

按照本规范进行安装的Linea Oblique护墙板不能起到任何结构支撑的作用。但是，通过用James Hardie 刚性密封板代替常规的软性隔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，都可以达到支撑的效果。更多关于结构支撑的信息，请参阅James Hardie支撑设计手册。

2.9 ENERGY EFFICIENCY 隔热能效

External walls constructed as per this technical specification using Linea Oblique Weatherboard and bulk insulation, where the area of glazing is 30% or less of the total wall area, comply with the insulation requirements for walls in the NZBC Acceptable Solution H1/AS1 (Energy Efficiency Clause H1), Replacement Table 1. To meet thermal insulation requirements for the construction, the bulk insulation as specified in Table 1 must be used. This insulation may be substituted with insulations having higher R-values. The thermal insulation of a wall changes when the size or spacing of timber framing is increased or decreased. The calculation used in Table 1 is based on a timber framing size 90 x 45mm and using an internal lining material such as James Hardie Villaboard Lining or a 10mm plasterboard.

按照本技术手册的说明安装了Linea Oblique护墙板、并装有主体保温层的墙体，只要玻璃面积不超过所有墙体总面积的30%，即可符合NZBC合格方案中H1/AS1部分第H1条‘隔热能效’”（Energy Efficiency Clause H1）中“替换表1”对墙体保温的要求。为达到建筑物最低保温要求，必须按照表1的规定为墙体安装主体保温层。也可使用热阻更高的隔热材料替代该保温层。墙体的隔热效果会因木框架材料的尺寸及间距的增减而产生不同 。表1算式的前提是：木框架尺寸为90 x 45mm，内墙材料为James Hardie Villaboard®内墙板或10mm厚的石膏板或者同类材料。

Table 1 **表1**

Insulation capability 隔热能效		
Climate zone 气候区	**R-value requirement** 建筑物热阻指数（R Value）要求	**Minimum cavity insulation infill requirement** 隔热层最小热阻要求
1 and 2 1区和2区	1.9 m^2 ºC/W	R2.0*
3 3区	2.0 m^2 ºC/W	R2.2*

Total construction R-value depends on the insulation material used and the framing ratio. The insulation material R-Values specified in this table are for studs spaced at 600mm centres and nogs spaced at 800mm centres.

一个建筑物的总热阻指数是由所选用的隔热层材料和建筑框架结构共同决定的。上表中所列出的隔热层材料热阻值是基于前提下得出的：墙筋中心间距 600mm，木钉中心间距 800mm。

To achieve higher R-Values of construction the wall insulation material must be replaced with an insulation material having higher R-Values to suit the requirements.
#如欲达到更高的建筑物热阻级别，则需要选用热阻（R-Value）更高的隔热层材料来替换上述材料。

For further guidance on insulation requirements refer to the current edition of 'House Insulation Guide' published by BRANZ.
更多关于隔热层的指导信息，请参阅BRANZ出版的最新版本住房隔热层指南»

3 Framing 框架

3.1 GENERAL 概述

Linea Oblique Weatherboard can be fixed either to a timber-frame or steel-frame.
Linea Oblique护墙板既可以安装在木结构框架，也可以安装于钢结构框架上。

For fixing to a steel frame Ask James Hardie on 0800 808 868 for specific requirements.
如需在钢结构框架上安装，请拨打0800 808 868，向Ask James Hardie询问具体要求。

For Linea Oblique Weatherboard horizontal installation:
对于Linea Oblique护墙板的水平安装方法

- Studs must be provided at 600mm centres maximum.
- 墙筋中心间距不得大于600mm。
- Nogs must be provided at 800mm centres maximum.
- 木钉中心间距不得大于800mm。

Note: For fixing Linea Oblique Weatherboard, fastener spacing is provided in Section 5.
注意：针对Linea Oblique护墙板的安装，对于建筑固件间距的要求请参见本手册第5部分。

3.2 TIMBER FRAMING 实木框架结构

3.2.1 Dimensions 尺寸规格

A 90 x 45mm minimum framing size is required.
框架木材的尺寸需大于等于90 x 45mm。

A minimum 90mm wide stud is required at vertical joint flashing.
在纵向连接防水板处必须加一枚至少90mm宽的墙筋。

3.2.2 Structural Grade 木材等级

Timber grade used must be in accordance with timber grades specified in NZS 3604.
建筑物所使用的木材等级必须符合NZS 3604中的规定。

3.2.3 Durability 耐久性

The external framing timber 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，请参阅NZBC合格方案B2/AS1的“耐久性”部分。

For timber treatment and allowable moisture content information refer to 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的可接受范围的信息，请参阅NZS 3602 – 建筑用途的木材及木质产品(Timber and Wood-Based Products for use in Buildings)以及NZS 3640 – 圆形锯木的化学防腐(Chemical Preservation of Round Sawn Timber)，查看木材处理程度最低限值及处理规范的信息。

Also refer to the framing manufacturer's literature for further guidance on timber selection. Framing must be protected from moisture at the site in accordance with the framing manufacturer's recommendations.
另请参阅木框架生产商所提供的说明材料，获得关于选择木材的进一步指导。在施工现场，必须按照生产商的建议对木框架材料进行防潮保护。

3.2.4 Frame Construction 框架结构

Use of timber framing must be in accordance with NZS 3604 and the framing manufacturer's specifications. The framing must be rigid and must not rely on the cladding for stability. Timber framing sizes and its set-out must comply with NZS 3604 and as specified in this technical specification.
对于木框架材料的使用方法必须符合NZS3604标准的规定并遵照生产厂商的具体说明。框架必须是刚性定型的，且不能倚靠外墙板的支撑。木框架材料的尺寸和布局都必须符合NZS3604标准的规定并遵照本技术手册的说明。

The following framing is required: 务必遵守以下关于木框架的要求：

- Studs must be provided at 600mm centres maximum.
- 墙筋中心距离不得大于600mm。
- Nogs must be provided at 800mm centres maximum.
- 木钉中心距离不得大于800mm。
- When studs are spaced at 400mm centres then the nogs / dwangs may be provided at 1200mm centres
- 如果墙筋的中心间距为400mm，则须以1200mm的中心间距安装木钉／转动杆
- An extra stud is required in internal corners
- 房屋阴角处需要额外多安装一枚木钉
- For specific design projects exposed to wind speeds higher than 55m/sec, the stud size and spacing must be as per the design requirements but not exceeding 600mm maximum.
- 对位于风速大于55米每秒地区的特殊设计建筑来说，墙筋的尺寸和距离必须依照工程设计的要求，且距离不得超过600mm。

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 provider statement.

如果位于山墙一侧的桁架处于外墙框架的顶板上，那么框架结构的尺寸必须符合桁架生产商／销售商所提供的设计和说明，且该设计及说明需要附有独立的设计生产声明。

3.3 SPECIAL FRAMING REQUIREMENTS 特殊框架要求

The following are special framing requirements for both timber and steel framing:
以下是对木结构和钢结构框架同样适用的特殊框架要求：

- Double studs are required at internal corners, refer Figure 15.
- 房屋阴角处需要使用双墙筋，参见图15.
- Extra packers may be required at external corners.
- 房屋阳角需要额外的空心层。

3.4 TOLERANCES 可允许误差

In order to achieve the required performance and an acceptable wall finish, it is imperative that framing is straight and true. Framing tolerances shall comply with Table 2.1 of NZS 3604 and the manufacturer's specifications. All framing shall be made flush.

为了完工后达到理想效果和符合标准的外墙，框架必须保证水平和竖直。框架的误差必须符合NZS 3604中表2.1的要求和框架生产商的说明。所有的框架都必须齐平。

4 Preparation 准备工作

4.1 FLEXIBLE UNDERLAY / HOMERAB PRE-CLADDING 弹性隔层和HOMERAB预置垫板

Flexible underlay / HomeRAB™ Pre-Cladding must be provided as per the requirements of External Moisture Clause E2 of the NZBC. The flexible underlay selected for use must comply with Table 23 of E2/AS1.
根据NZBC合格方案E2/AS1中E2部分“外部湿度（External Moisture）”条款的要求，房屋必须铺设弹性隔层或HOMERAB预置垫板。对弹性隔层材料的选择必须遵照该方案E2/AS1中表23的要求。

The flexible underlay must be fixed in accordance with section of 9.1.7 E2/AS1 and the underlay manufacturer's recommendations.
弹性隔层必须根据E2/AS1中9.1.7部分的要求和弹性隔层生产商的建议来安装。

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 Table 23 of E2/AS1. 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 by James Hardie complies with these requirements and is suitable for use in this situation. It must be installed in accordance with the James Hardie Rigid Air Barriers installation manual.

对于无内衬面的墙体，如如车库墙或山墙，必须在外墙板的内层安装一层刚性隔板或密封层，以符合NZBC合格方案E2/AS1部分表23的要求。对于与屋体连接的车库墙，必须依照NZBC合格方案E2/AS1部分段落9.1.3.4的要求选择弹性隔层。 James Hardie生产的HomeRAB预置垫板符合以上规范，且适用于以上情况。请务必按照《James Hardie HomeRAB刚性密封板安装手册》的指导进行安装。

4.2 RAB BOARD 刚性密封板

For EH wind zone or for specific design projects where the wind pressure is higher than 1.5kPa, RAB Board by James Hardie must be used instead of flexible underlay.
对于EH风区以及位于风压高于1.5kPa 地区的特殊工程设计项目，必须使用James Hardie RAB预置垫板替代弹性隔层。

To achieve the temporary weathertightness using RAB boards, windows/doors need to be temporarily installed. Refer to the James Hardie Rigid Air Barriers installation manual for information regarding its installation.
如果需要通过安装James Hardie刚性密封板达到暂时密闭防潮的效果，则需要暂时为建筑物安装门窗。有关刚性密封板的更多安装信息，请参阅《James Hardie 刚性密封板安装手册》。

4.3 CAVITY CLOSURE / VENT STRIP 空心腔开口／通风带

The James Hardie Stria™ Aluminium Cavity Closure or uPVC cavity vent strip must be installed at the bottom of all walls and above all openings constructed using the drained and ventilated cavity construction method. It is important that the openings in the cavity closure/vent strip are kept clear and unobstructed to allow free drainage and ventilation of cavities. James Hardie cavity closure/vent strip has an opening area of 1000mm²/m length.
所有墙体的底部及墙体所有开口处必须安装 James Hardie uPVC空心通风带，安装方法须用空心排水通风安装法。请务必保持通风口开口处无遮挡、无堵塞，以便空心腔顺利排水和通风。James Hardie 空心封口／通风带的开口面积为1000mm²每延米。

4.4 CAVITY BATTENS 空心结构板条

Linea Oblique Weatherboard must installed on a cavity. The battens provide ventilation and drainage between the frame and the weatherboard and are considered a “packer” only in this specification.
Linea Oblique护墙板应安装于板条空心结构之上。板条空心结构能在屋体框架和外部护墙板之间形成一个空气层，起到通风排湿的作用。本手册（仅限于本手册）中称这个空气层为“空心层”。

The timber cavity battens must be minimum H3.1 treated in accordance with NZS 3640 (Chemical preservation of rough and sawn timber) to comply with the durability requirements of B2/AS1.
木质空心结构板条必须依照NZS 3640 – 原木及锯木的化学防腐处理（Chemical preservation of rough and sawn timber）的规定，进行过H3.1级别的化学处理，以符合B2/AS1部分关于耐久性的要求。

Cavity battens must comply with E2/AS1 and:
James Hardie空心结构水平板条符合E2/AS1部分的要求，且：

- Be minimum 18mm thick
- 厚度大于等于18mm

- Be as wide as the width of studs
- 宽度与墙筋宽度相同
- Fixed vertically to studs
- 垂直安装，固定在墙筋上；
- must be fixed by the cladding fixings to the main framing over the flexible underlay. Therefore until claddings are fixed the battens only need to be tacked to framing by 40 x 2.8mm or longer nails at 800mm centres.
- 必须用外墙钉穿过软性隔层， 将板条固定在房屋主框架上。因而在安装护墙板之前，板条只需用40 x 2.8mm或更长的钉子以800mm的中心间距临时固定在主框架上即可。

4.5 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 one of the following options:
当墙筋的中心间距达到600mm时，需要加入居中支撑，以防止软性隔层和保温棉向空心腔方向鼓胀。有效合格的处理方法有以下几种，请选择使用其一：

- intermediate cavity batten between the studs; or
  在墙筋之间加装居中空心结构板条；或者
- 75mm galvanised mesh; or
  使用75mm的镀锌丝网；或者
- polypropylene tape at 300mm centres fixed horizontally and drawn taut
  在300mm间距的中心处使用聚丙烯胶带，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
  墙筋中心间距为400mm；或者
- when rigid air barriers instead of flexible underlays are used.
  使用刚性密封板代替了预置隔层。

4.6 FLASHINGS 防水板

All wall openings, penetrations, intersections, connections, window sills, heads and jambs must be flashed prior to Linea Oblique Weatherboard installation. Refer to moisture management requirements in Clause 2.5. The flexible underlay/ rigid air barrier must be appropriately incorporated with penetration and junction flashings using flashing tapes. Materials must be lapped in such a way that water tracks down to the exterior on the face of the flexible underlay or rigid air barrier board.

所有的不封闭墙体、被穿透墙体、墙体接缝、墙体连接，及窗台、窗楣和窗户边框处，都必须在安装Linea Oblique护墙板之前做防水。请参阅本手册2.5部分关于湿度控制的要求。必须使用防水胶带将软性隔层／刚性密封板与墙体穿透处和连接处的防水板妥善地相接合。材料重合处必须搭接良好，保证水流是沿着弹性隔层或刚性密封板的外表面向下流。

The selected flashing materials must comply with the durability requirements of the NZBC. For information refer to Table 20 of E2/AS1.
所选防水材料必须符合NZBC中对于耐久性的要求。详情请参见E2/AS1部分表20。

When using James Hardie rigid air barrier boards, the entire framing around openings must be protected with a flashing tape. The tape must be finished over the face of the rigid air barrier. Ensure to check the compatibility of flashing tapes and sealants with their manufacturer. Refer to the James Hardie Rigid Air Barriers installation manual for further information.

当使用James Hardie刚性密封板时，墙体开口处周围的所有框架结构必须用防水胶带封好。胶带必须延伸粘贴到刚性密封板的外表面。请务必与相关制造商确认防水胶带和密封涂料与建筑其他部分是否兼容。更多信息请参见James Hardie刚性密封板安装手册。

4.7 JUNCTIONS AND PENETRATIONS 接缝与穿透

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. For an example of window details for Linea Oblique Weatherboard which meet the performance requirements of E2 External Moisture, an approved document of the NZBC, refer to Figures 16 to 24.
参阅本规范第2.5部分关于湿度控制的要求。所有门窗必须根据本规范的要求来设计详图。若需要Linea Oblique护墙板窗户细节处理的示例详图，请参阅详图15至24，该示例符合NZBC核准文件中E2部分 – 外部湿度控制的要求。

5 Linea Oblique 护墙板的安装

5.1 GENERAL 概述

Linea Oblique Weatherboard must be installed horizontally using the cavity construction method as per the details and information published in this document.
Linea Oblique护墙板的水平安装必须按照本手册中所示的详图和信息，用板条空心安装法进行安装。

Linea Oblique Weatherboard must be kept under cover whilst in storage or at sites and they must be dry at the time of their installation. All site-cut weatherboard edges must be sealed with Dulux Acraprime 501/1, Dulux Primacryl, Resene Quick Dry or a similar sealer compatible with the finish coat before installation.

Linea Oblique护墙板在储存仓库中及施工现场都必须受到遮挡，并保证安装之时是干燥的状态。所有在施工现场切割过的板材，需于安装前在切割端涂上Dulux Acraprime 501/1、Dulux Primacryl、Resene Quick Dry，或其它类似的可与板材上的底漆兼容的密封涂料。

Linea Oblique Weatherboard must be fully supported and fixed through timber cavity battens. Ensure that cladding is hard against the battens to avoid drumminess.

Linea Oblique护墙板必须固定在James Hardie空心结构水平板条上，并得到足够的承重支撑。请确保外墙板牢固紧密地固定在板条上，以避免鼓胀不稳。

To achieve best aesthetic results it is recommended to position the vertical jointer by the corner of openings or coinciding with the centre line of openings.
为达到最美观的效果，建议将纵向连接件安装在开口处的边角或者开口的中线处。

This technical specification only covers the horizontal installation of Linea Oblique Weatherboard. Refer to the Linea Oblique Weatherboard Vertical Installation Technical Specification for vertical installation.

本技术手册仅涵盖Linea Oblique护墙板的水平安装方法。如需纵向安装，请参阅Linea Oblique护墙板纵向安装法技术说明。

5.2 FASTENER DURABILITY 固件的耐久性

Fasteners must meet the minimum durability requirements of the NZBC. NZS 3604 specifies the requirements for fixing materials to be used in relation to exposure conditions and are summarised in Table 2.
固件必须符合NZBC关于最低耐久性的要求。NZS 3604详细规定了用于室外暴露环境下的金属固件材质的要求，汇总于表2。

Fasteners must be fully compatible with the other materials that they are to be in contact with, to ensure the duraility of the complete assembly.
固件必须与它所能接触到的其他元件完全兼容，以确保房屋整体的耐久性。

Table 2 表2

Exposure conditions and nail selection prescribed by NZS 3604
NZS3604对室外暴露环境的定义及钉子选用的要求

NAIL MATERIAL		
Zone D D区	Zone C* outside sea spray zone, Zone B and geothermal hot spots B区、除去潮水区之外的C区，以及地热活跃区	Bracing - all zones 用于加固 —— 所有区域
Grade 316 Stainless 316型号不锈钢	Hot-dipped galvanised or Grade 316 Stainless 热浸镀锌或316型号不锈钢	Grade 316 Stainless 316型号不锈钢

*(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.

*(在C区的某些区域，如果本地经验知识表明有必要使用更高耐久性的产品，则应当更加慎重选材). 如果建筑坐落于NZS 3604中第4.2.4段中列出的那些对微气候区域，则需要进行特殊工程设计。

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>E2/AS1款’的表20和21，了解如何选择适当的固件材料，及其与其它材料的兼容性等信息。

5.3 FASTENER – SIZE AND LAYOUT 固件——尺寸与固定方法

Linea Oblique Weatherboard must be fixed horizontally to framing using fixings as specified in Table 3 below and follow the edge distance required for nails as shown in the details.

Linea Oblique护墙板必须按照以下表3的安装方法横向固定在板条框架上，并遵照详图中所示的钉子边缘间距进行固定。

Table 3 表3

Weatherboard fixing up to and including VH wind zone
位于VH及以下级别风区的护墙板安装

CAVITY CONSTRUCTION OVER FLEXIBLE UNDERLAY
使用软性隔层的空心结构建筑

Linea Oblique Weatherboard 200 200mm宽的Linea Oblique护墙板	65x2.87mm D head or 65x2.87mm RounDrive ring shank nail, or 60x3.15mm HardieFlex nail 65x2.87mm的D形头钉子或65x2.87mm的环纹螺丝钉或60x3.15mm HardieFlex 钉	Fix one nail 100mm from bottom edge of board per nog/plate. Refer to Figure 5 每块木钉／托板一枚钉子，在距离护墙板下缘100mm处入钉。详见图5
Linea Oblique Weatherboard 300 300mm宽的Linea Oblique护墙板	65x2.87mm D head or 65x2.87mm RounDrive ring shank nail, or 60x3.15mm HardieFlex nail 65x2.87mm的D形头钉子或65x2.87mm的环纹螺丝钉或60x3.15mm HardieFlex 钉	Fix one nail 150mm from bottom edge of board per nog/plate. Refer to Figure 6 每块木钉／托板一枚钉子，在距离护墙板下缘150mm处入钉。详见图6

Weatherboard fixing up to and including VH wind zone
位于VH及以下级别风区的护墙板安装

CAVITY CONSTRUCTION OVER HOMERAB PRE-CLADDING/RAB BOARD
使用HOMERAB预置垫板／RAB刚性密封板的空心结构建筑

Linea Oblique Weatherboard 200 200mm宽的Linea Oblique护墙板	75x3.06mm D head or 75x3.15mm RounDrive ring shank nail, or 75x3.15mm HardieFlex nail 75x3.06mm的D形头钉子或75x3.15mm的环纹螺丝钉或75x3.15mm HardieFlex 钉	Fix one nail 100mm from bottom edge of board per nog/plate. Refer to Figure 5 每块木钉／托板一枚钉子，在距离护墙板边缘100mm处入钉。详见图5
Linea Oblique Weatherboard 300 300mm宽的Linea Oblique护墙板	75x3.06mm D head or 75x3.15mm RounDrive ring shank nail, or 75x3.15mm HardieFlex nail 75x3.06mm的D形头钉子或75x3.15mm的环纹螺丝钉或75x3.15mm HardieFlex 钉	Fix one nail 150mm from bottom edge of board per nog/plate. Refer to Figure 6 每块木钉／托板一枚钉子，在距离护墙板边缘150mm处入钉。详见图6

Weatherboard fixing EH wind zone and SED projects 位于EH风区及特殊设计项目中的护墙板安装		
CAVITY CONSTRUCTION OVER RAB BOARD 使用HOMERAB预置垫板／RAB刚性密封板的空心结构建筑		
Linea Oblique Weatherboard 200 200mm宽的Linea Oblique护墙板	75x3.06mm D head nail or 75x3.15mm RounDrive ring shank nail, or 60x3.15mm HardieFlex nail 75x3.06mm的D形头钉子或75x3.15mm的环纹螺丝钉或75x3.15mm HardieFlex 钉	Fix one nail 100mm from bottom edge of board per nog/plate Refer to Figure 5 每块木钉／托板一枚钉子，在距离护墙板下缘100mm处入钉。详见图5
Linea Oblique Weatherboard 300 300mm宽的Linea Oblique护墙板	75x3.06mm D head nail or 75x3.15mm RounDrive ring shank nail, or 60x3.15mm HardieFlex nail 75x3.06mm的D形头钉子或75x3.15mm的环纹螺丝钉或75x3.15mm HardieFlex 钉	Fix one nail at 150mm from bottom edge of board per nog/plate. Refer to Figure 6. 每块木钉／托板一枚钉子，在距离护墙板下缘150mm处入钉。详见图6

For other fixing options Ask James Hardie on 0800 808 868.
欲知其它可选的安装方法，请拨打0800 808 868 咨询James Hardie。

- When fixing the weatherboards using nail guns, refer to the nail gun manufacturer for information about nails and the type of nail gun to be used.
- 当使用射钉枪安装护墙板时，请向射钉枪制造商索取关于钉子及射钉枪的种类选取的信息。
- D head nails - finish nails 2mm below weatherboard surface.
- D形头钉子：完成入钉后，钉头应在外墙板面以下2mm处。
- RounDrive nails - finish nails flush with weatherboard surface.
- 环纹螺丝钉：完成入钉后，钉头应与外墙板面齐平。
- *HardieFlex nails - finish nails flush with the weatherboard surface*
  HardieFlex 钉：完成入钉后，钉头应与外墙板面齐平

6 Joints 连接

6.1 VERTICAL JOINT 垂直连接

Linea Oblique Weatherboard shall be jointed using the trimline joint flashing. Refer to Figures 11 and 12.
Linea Oblique护墙板应使用边线连接防水板进行连接。参见图11和图12.

A single stud is required when using the trimline joint flashing. Refer to Figure 11.
当使用边线连接防水板时，必须用单墙筋。参见图8.

Alternatively a vertical joint flashing shall be used a double stud is required for this joint. Refer to Figures 13 and 14.
或者也可以使用垂直连接防水板。如果如此则须用双墙筋。参见图13和14.

6.2 HORIZONTAL JOINT 水平连接

Linea Oblique Weatherboards are lapped over each other as per Figures 5 and 6. There is a minimum 23-25mm lap between the two weatherboards. Ensure that the Linea Oblique Weatherboards are securely interlocked before nailing. Linea Oblique Weatherboard can run continuous over floor joists without any horizontal joint when LVL timber floor joists or an engineered joist are used, refer to figure 28.

Linea Oblique护墙板应按照图5和图6所示互相搭接。每两块板的搭接宽度至少为23-25mm。在入钉前，请确保Linea Oblique护墙板之间已牢固搭接锁定。当地板龙骨材质为单板层积材木质龙骨或工程龙骨时，Linea Oblique护墙板可以连续不断地水平铺于地板龙骨上，而无需水平连接防水板。详见图28。

When using a solid timber joist, a horizontal joint or a movement joint must be formed at floor joist, refer to Figures 29 and 32.

而当使用的是实木龙骨时，地板龙骨上必须有一个水平连接件或移动连接件，详见图29和图32。

6.3 DRAINAGE JOINT 排水接缝

After every two floors a horizontal drainage joint flashing is required as per E2/AS1, refer to Figure 32.

根据E2/AS1的要求，每两层楼即需安装一块排水接缝防水板。参见图32。

6.4 EXTERNAL CORNER 阳角

An external box corner flashing is used to fix the external corners, refer to Figure 15. Alternatively an Axent™ Trim external boxed corner can also be formed, refer to Figure 16.

在阳角处需安装阳角箱角防水板，参见图15。或者也可使用Axent™阳角箱角配件（Axent™ Trim external boxed corner）代替，参见图16。

6.5 INTERNAL CORNER 阴角

An internal corner flashing is to be used to form an internal corner joint, refer to Figure 17.
阴角接缝处需要使用阴角防水板，详见图17。

An extra stud is required in internal corners.
阴角处需要多放一枚墙筋。

Note: All joint mouldings to be fixed at 400mm centres both sides.
注意：所有接缝配件都需要同时固定在在距离接缝线的中心距离为400mm的两侧 。

7 Finishes 表面处理

7.1 PREPARATION 准备工作

The D head nail must be finished 2mm below the weatherboard surface. The nail holes must be filled with an exterior grade two part builders fill, ie. CRC ADOS Builders Fill or similar two part external grade filler. The RounDrive nail heads must finish flush with weatherboard surface.

D形头钉子完成入钉后必须在板材表面以下2mm处。钉孔需用外用级别的工程强化填充剂填充，如CRC ADOS Builders Fill，或同类的双剂式户外级别填充剂。螺丝钉入钉完成后，钉头需与板面齐平。

7.2 PAINTING 涂漆

Linea Oblique Weatherboard is pre-primed and is suitable for site applied acrylic paints.

Linea Oblique护墙板已经预涂底漆，并适于在工地现场刷上丙烯涂料。

In order to seal cut edges or sanded patches, Dulux Primacryl, Acroprime 501/1 Resene Quick Dry or a similar product should be applied. The primer should be compatible with the paint to be used.

为了对板材的切割面和砂纸抛光面进行密封，应使用Dulux Primacryl,Acroprime 501/1, Resene Quick Dry或其它类似产品为板材上漆。上漆的涂料必须与板材底漆相兼容。

Painting of Linea Oblique Weatherboard is mandatory to meet the durability requirements of the NZBC and 25 year James Hardie product warranty. Linea Oblique Weatherboard must be dry and free of any dust or grime before painting. The weatherboards must be painted within 90 days of their installation. There is no restriction on the LRV of paint to be applied on the Linea Oblique Weatherboard.

为了符合NZBC关于耐久性的要求和James Hardie的25年质保要求，Linea Oblique护墙板必须上漆。在上漆前请保持板材干燥和清洁无污。上漆必须在安装后90天内完成。Linea Oblique护墙板对于所涂漆的LRV值没有要求。

James Hardie recommends a minimum of two coats of exterior grade acrylic paint. Follow the paint manufacturer's recommendations to prepare the surface and to adequately cover and conceal the weatherboard fixings.

James Hardie建议至少涂两层外用级别的聚丙烯涂料。请遵照油漆制造商的建议来预处理板材表面，并充分地隐藏固件和密封钉孔。

7.3 FLEXIBLE SEALANT 软型密封胶

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

密封胶的使用必须遵照NZBC的相关要求。密封胶的用法和用途必须符合制造商的规定。在密封剂表层上刷漆之前，请先与密封剂制造商确认。有些密封剂的制造商并不建议在其产品之上刷漆。

8 Storage and handling 储存与搬运

When storing Linea Oblique Weatherboard, they must be laid flat on a smooth level surface. Edges and corners must be protected from chipping.

Linea Oblique护墙板在储存中必须平放在光滑平整的平面上。保护边角不被碰撞摩擦。

To ensure optimum performance, store weatherboards under cover and keep dry prior to fixing. If the weatherboards become wet, allow them to dry thoroughly before fixing.
为确保最佳完工效果，护墙板在安装前应在有遮蔽、保持干燥的地方储存。如果护墙板不慎被弄湿，请在安装前彻底干燥。

Do not carry weatherboards on the flat, carry on edge to avoid excessive bending.
搬运护墙板时请勿采用水平方式，应扶住边缘将其竖直搬运，避免重力弯曲导致的变形。

9 Maintenance 维护

The extent and nature of maintenance required will depend on the geographical location and exposure of the building. It is the responsibility of the specifier to determine normal maintenance requirements to maintain the effectiveness of the cladding.

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。工程监管者有责任确定该建筑物所需的日常维护要求，以保证外墙发挥正常的功能。

As a guide, it is recommended that the basic normal maintenance tasks shall include, but not be limited to:
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*
- 每6至12个月清洗外表面*
- Re-coating exterior protective finishes**
- 重新粉刷保护涂层**。
- Regular inspection and repair if necessary of the cladding, joints, sealants, nail head fillers etc.
  经常检查外墙接缝、密封剂、钉头填缝剂等处，如有必要则进行维修。
- Cleaning out gutters, down pipes and overflow pipes as required.
  按照要求清理雨水槽、下水管和溢流排水管道。
- Pruning back vegetation which is close to or touching the building as well as ensuring the NZBC ground clearance requirements are maintained, especially where gardens are concerned.
  经常修剪与建筑物直接接触的植物或建筑物周围的植物。确保遵守NZBC关于接地间隙的要求，尤其是当涉及到花园时。
- The clearance between the bottom edge of the Linea Oblique Weatherboard and the finished/unfinished ground must always be maintained.
  确保Linea Oblique护墙板的底边缘与已铺／未铺的地面总是保持适当的距离。

*Do not use a water blaster to wash down the cladding.
请勿用水枪冲刷护墙板

*In extreme coastal conditions or sea spray zones, wash every 3-4 months.
在极度沿海地区或涌潮区，每3-4个月清洗一次外表面

**Refer to your paint manufacturer for washing down and recoating requirements related to paint performance.*
***有关油漆表面清洗及重新上漆的相关要求，请咨询您的油漆制造商。*

10 Product information 产品资料

10.1 MANUFACTURING AND CLASSIFICATION 制造工艺与分类

Linea Oblique Weatherboard is an advanced lightweight cement composite cladding manufactured using James Hardie formulation. Basic composition is Portland cement, ground sand, cellulose fibre and water. The product is easily identified by the name 'Linea Oblique'.

Linea Oblique护墙板是一种领先技术的低密度合成水泥外墙板，利用James Hardie的技术配方制作。它的基本配方是波兰水泥、地表沙、纤维素纤维和水。通过“Linea Oblique”标识即可轻松识别该产品。

Linea Oblique Weatherboard is manufactured to Australian / New Zealand Standard AS/NZS 2908.2 ‘Cellulose-Cement Products’ (ISO 8336 ‘Fibre-Cement Flat Sheet’).

Linea Oblique护墙板的制造符合澳洲／新西兰AS/NZS 2908.2 “纤维水泥产品” 标准（ISO 8336 ‘Fibre-Cement Flat Sheet’）的要求。

Linea Oblique Weatherboard is classified Type A, Category 2 in accordance with AS/NZS 2908.2 “Cellulose-Cement Products”.

根据澳洲／新西兰AS/NZS 2908.2 “纤维水泥产品“（AS/NZS 2908.2 ‘Cellulose-Cement Products’）部分的标准，Linea Oblique护墙板属于目录2中的A类产品。

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向Ask James Hardie索取产品安全信息单（Safety Data Sheets）

10.2 PRODUCT MASS 产品重量

Linea Oblique Weatherboard is manufactured in 16.0mm thickness and has a mass of 20.57kg/m^2 for 200mm and 19.67kg/m^2 for 300mm.

Linea Oblique护墙板的制造厚度为16.0mm，200mm宽的板重量为每平米20.57kg，300mm宽的板重量为19.67kg。

Linea Oblique Weatherboard is defined as a Light Weight Wall Cladding (not exceeding 30kg/m^2) as per NZS 3604.

根据NZS 3604，Linea Oblique护墙板属于轻质外墙材料——未超过每平米30kg。

10.3 DURABILITY 耐久性

Linea Oblique Weatherboard and James Hardie rigid air barrier installed and maintained as per this technical specification will meet the durability requirement for cladding as per the NZBC clause B2 Durability.

凡按照本技术规范进行安装与维护的Linea Oblique护墙板及James Hardie刚性密封板，均可达到NZBC 批准文件B2“耐久性”部分中对于外墙耐久性的要求。

10.3.1 Resistance to Moisture/Rotting 防潮与防腐

Linea Oblique Weatherboard is resistant to permanent moisture induced deterioration (rotting) and meets the requirements of the following tests in accordance with the AS/NZS 2908.2:

Linea Oblique护墙板能够抵抗长期潮湿所导致的恶化（腐烂），并成功通过了根据AS / NZS 2908.2规定所进行的下列测试：

- *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）。

10.3.2 Control of External Fire Spread 外部阻燃性

Linea Oblique Weatherboard meets the requirements of Appendix C C7.1.1 and is classified as ‘Non-Combustible Material’ which is suitable for use as external wall cladding and complies with the requirements of Paragraph 5.4 of the NZBC Acceptable Solution C/AS1 and Paragraph 5.8.1 of Acceptable Solutions C/AS2 to C/AS6 of the NZBC.

Linea Oblique护墙板符合附件C C7.1.1的要求并被划分为“不易燃材料”，适合作为建筑物外墙使用，且符合NZBC合格方案C/AS1部分第5.4 段的要求，并符合合格方案中C/AS2 部分第5.8.1段至C/AS6部分的要求。

10.3.3 Alpine Regions 高寒地区

In regions subject to freeze/thaw conditions, Linea Oblique Weatherboard and James Hardie rigid air barrier 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 snowdrifts over winter is expected.

对于经常出现冰冻/融化状况的地区，Linea Oblique护墙板及James Hardie刚性密封板不得长时间直接接触积雪或冰块。例如:在冬天可能出现吹雪现象的高寒地区，外墙必须受到遮蔽保护。

These products meet the requirements of the AS/NZS 2908.2 Clause 8.2.3.
以上产品符合AS/NZS第2908.2部分第8.2.3.段的要求。

11 Safe working practices 安全施工规程

11.1 STAY HEALTHY WHEN WORKING WITH BUILDING PRODUCTS CONTAINING CRYSTALLINES SILICA 施工时接触到含石英的建筑产品时，如何保障健康

***Crystalline Silica** 石英*

What is it? Why and when is it a health hazard?
石英是什么？为什么石英有害健康？在何种情况下,石英会危害健康?

- Commonly known as sand or quartz
  通常被认为是沙子或晶 体；
- *Found in many building products e.g. concrete, bricks, grout, wallboard, ceramic tiles, and all fibre cement materials*
  存在于很多建筑产品中， 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?
为什么石英会危害健康?

- Silica can be breathed deep into the lungs when present in the air as a very fine (respirable) dust
  石英中的硅在空气中以非常微小的硅尘呈现，可被深吸入肺部。
- 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
  如果暴露于硅尘中，而没有采取任何恰当的安全措施来最小化硅尘吸入量，就易导致致命的肺部疾病——矽肺——并且易造成包括癌症在内的其他疾病。有些研究显示吸烟会增加此类风险。
- The most hazardous dust is the dust you cannot see!
  最有危害的尘埃是你看不到的微尘!

When is Crystalline Silica a health hazard?
石英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
  如果在切割，打钻或打槽含石英的产品时，没有遵从控尘的安全原则， 就易危害健康。
- Products containing silica are harmless if intact (e.g. an un-cut sheet of wall board)
  含石英的产品在完整状态中是无害的（例如,未切割的整块墙板）

FAILURE TO ADHERE TO OUR WARNINGS, SAFETY DATA SHEETS AND INSTALLATION INSTRUCTIONS WHEN WORKING WITH JAMES HARDIE PRODUCTS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.
如果在使用James Hardies 产品时，没有遵从我们的警告、安全数据表及安装说明，则可能导致人员严重伤亡。

11.2 AVOID BREATHING IN CRYSTALLINE SILICA DUST! *避免吸进石英尘!*

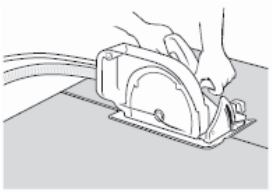
Safe working practices 安全作业操作

- NEVER use a power saw indoors or in a poorly ventilated area
  不要在室内或通风条件差的区域使用电锯。
- NEVER dry sweep *不要干扫。*
- ALWAYS use M Class extractor unit as a minimum and hose down with water/wet wipe for clean up
  一定要用至少M级的提取器，并且一定要用水管冲洗或用湿抹布清洁。
- NEVER use grinders *不要使用研磨机。*
- ALWAYS use a circular sawblade specifically designed to minimise dust creation when cutting fibre cement –preferably a sawblade that carries the HardieBlade™ logo or one with least equivalent performance
  在切割纤维水泥时，一定要用特制的圆形锯齿以最小化尘埃——最好使用有HardieBladeTM商标的锯齿或者至少有同等功用的锯齿。
- ALWAYS follow tool manufacturers' safety recommendations
  一定要遵从工具制造商的安全建议。
- ALWAYS expose only the minimum required depth of blade for the thickness of fibre cement to be cut
  按照纤维水泥的切割厚度，采用所需的最小锯齿尺寸。
- ALWAYS wear an approved properly-fitted, approved dust mask (P1 or P2) or respirator
  一定要戴合适且经过认证的防尘面具（P1或者P2）或者口罩。

Use one of the following methods based on the required cutting rate:
按所需的切割度，运用以下工具中的一种：

BEST: 最好用：

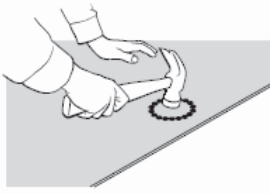
- *HardieKnife™*
  HardieKnife™
- *Hand guillotine*
  手铡刀
- *Fibreshear*
  纤维剪



BETTER: 较好的：

- *Dust reducing circular saw equipped with HardieBlade™*
  配上HardieBladeTM的减尘圆形锯齿
- *Saw Blade and M Class extractor unit.*
  锯齿和M级吸尘装置

Working outdoors 室外作业



- Make sure you work in a well ventilated area
  确保在通风良好的区域作业
- Position cutting station so wind will blow dust away from yourself and others in the working area
  恰当摆放切割台，保证风会将尘埃吹开，以避免您或工作场合的其他人吸入尘埃。
- Cut products with either a HardieKnife™ or fibre cement shears or, when not feasible, use a HardieBlade™ Saw Blade (or equivalent) and a dustreducing circular saw attached to a M Class extractor unit

  使用HardieKnife™ 或者纤维水泥剪，如果不可行，使用HardieBlade™ 锯齿（或相似工具）和附在M级吸尘装置上的减尘圆形锯齿。

When sawing, sanding, rebating, drilling or machining fibre cement products, always:
在对纤维水泥产品进行锯切、沙磨、打槽、钻孔以及机械加工的过程中，需要：

- Wear your P1 or P2 mask (correctly fitted in accordance with manufacturers' instructions) and when others are close by, ask them to do the same
  戴上P1或P2面具（完全按照制造商要求安全佩戴），而且要 求附近人员也同样佩戴。
- If you are not clean shaven, then use a powered air respirator with a loose fitting head top
  如果您未刮净胡须，则使用带顶部较宽松的电动空气面罩。
- Wear safety glasses *戴上安全眼镜*
- Wear hearing protection *戴上护耳装置*
- When others are close by, ask them to do the same
  要求附近人员也同样佩戴。

Working indoors 室内作业

Never cut using a circular saw indoors
不要在室内使用圆形锯齿

Position cutting station in a well ventilated area
将切割台放置在通风良好的区域

Cut ONLY using a HardieKnife™, hand guillotine or fibreshears (manual, electric or pneumatic)
只用HardieKnife TM、手铡刀或者纤维剪（手动、电动或者气动）。

Make sure you clean up BUT never dry sweep. Always hose down with water/wet wipe or use an M Class extractor unit
确保一定要清洁但绝不要在干燥的环境中清洁。可以用水管冲洗、用湿抹布擦拭或者M级吸尘装置清洁。

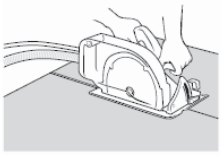
IF CONCERN STILL EXISTS ABOUT EXPOSURE LEVELS OR YOU DO NOT COMPLY WITH THE ABOVE PRACTICES, YOU SHOULD ALWAYS CONSULT A QUALIFIED INDUSTRIAL HYGIENIST.

如对以上所述状况仍有疑问或以上的操作说明不适合您的情况，您需要咨询专业的行业卫生专家。

Working Instructions 作业说明

- Refer to Recommended Safe Working Practices before starting any cutting or machining of product

  在对产品进行切割或机械加工之前，请参照安全作业操作建议。

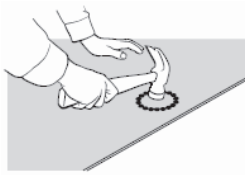


HardieBlade™ Saw Blade
HardieBlade™ 锯齿

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 deflector or a dust collector connected to a vacuum system. 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

想要快速整齐地切割James Hardie的纤维水泥产品，带减尘锯齿的HardieBladeTM锯齿是您的理想选择。减尘锯齿使用灰尘导流板或与真空装置相联的吸尘器，在锯切时，将直尺 夹在板上作为引导，并让锯齿底部板沿直尺切割。

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。

11.3 STORAGE AND DELIVERY 储存和运送

Keeping products and people safe Off loading
卸载过程中确保产品和人员安全

James Hardie products should be off-loaded carefully by hand or by forklift
James Hardie 的产品需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
在运输到作业现场的过程中，避免James Hardie的产品在卡车上翻倒。

***Storage** 储存*
James Hardie products should be stored:
James Hardie 产品的储存一定要：

In their original packaging
保持原包装

Under cover where possible or otherwise protected with a waterproof covering to keep products dry

有可能的情况下，有遮盖，否则应由防水层保护，以保证产品干燥。

- 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
  尽量平放减少弯曲

James Hardie products must not be stored:
James Hardie 产品一定不能：

- Directly on the ground
  直接放置在地面上
- 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.

如果因不恰当的储存和处理方式造成的损坏，James Hardie 一概不负责任。

11.4 TIPS FOR SAFE AND EASY HANDLING
安全及便利处理方式提示

Weatherboard products 护墙板产品

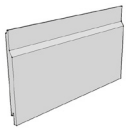
- Do not lift planked products flat and in the middle
  不要平着或从中部去抬举板条产品。
- Carry the products on the edge
  抬产品的边缘处
- If only one person is carrying the product, hold it in the middle and spread arms apart to better support the product
  如只有一人作业，则在中间举起，并伸展手臂更好地支撑产品。
- If two people are carrying the plank, hold it near each end and on edge
  如有两人作业，则从两端和边缘处抬起。
- Exercise care when handling weatherboard products to avoid damaging the edges/corners
  护墙板产品，须轻拿轻放，避免损坏边角处。

***Sheet products** 板材产品*

- Carry with two people
  两人一起作业
- Hold near each end and on edge
  在两端和边缘处抬
- Exercise care when handling sheet products to avoid damaging the edges/corners
  对板材产品，须轻拿轻放，避免损坏边角处。

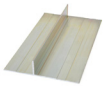
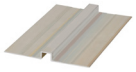
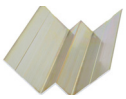
12 Product and accessories
产品与配件

Linea Oblique Weatherboard information
Linea Oblique护墙板产品信息

Product 产品	**Description** 描述	**Size** 尺寸 **(mm)**			**Code** 产品编号
		Thickness 厚度	**Length** 长度	**Width** 宽度	
	**Linea Oblique Weatherboard /**Linea Oblique护墙板 A 16mm profiled weatherboard for residential cladding. Factory sealed on all six sides. Each weatherboard has a manila white colour primer applied on its face, which accepts a wide range of paint finishes. 一种16mm厚的特制形状板材，用于住宅房屋的外墙面。出厂时六个面均涂有封层。每块护墙板的正面预涂了白色底漆，该底漆可以广泛地与多种其它涂料叠加。	16	2700 4200	200 300 200 300	**404855** **404856** **404849** **404848**

Note: All dimensions and masses provided are approximate only and subject to manufacturing tolerances.

Accessories/tools supplied by James Hardie
James Hardie有售的配件／工具

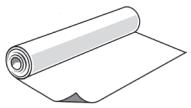
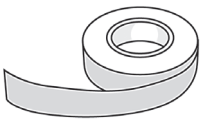
Accessories 配件	**Description** 描述	**Size** 描述	**Code** 产品编号
	**Oblique Trimline Joint Flashing** Aluminium extrusion used behind cladding at vertical joints. 斜边接缝线防水板 铝制挤压成型产品，用于外墙板垂直接缝处的底层。	3000mm long 长 3000mm	**305826**
	**Vertical Joint Flashing** Aluminium extrusion used behind cladding at vertical joints. 垂直连接防水板 铝制挤压成型产品，用于外墙板垂直接缝处的底层。	3000mm long 长 3000mm	**305507**
	**JH Weatherboard Internal 'W' Corner** Anodised aluminium extrusion used to create internal corners. JH护墙板'W'形阴角 经过阳极氧化处理的铝制挤压成型产品，用于形成房屋阴角。	2700mm long 长 2700mm	**300386**
	Linea Oblique Weatherboard External Box Corner Anodised aluminium extrusion used to create external corners. Linea Oblique护墙板阳角配件 经过阳极氧化处理的铝制挤压成型产品，用于形成房屋阳角。	2700mm long 长 2700mm 4000mm long 长 4000mm	**305825** **305873**
	Aluminium Window Jamb Flashing Aluminium moulding used beside window opening to end butt the Linea Oblique Weatherboard. 铝制窗框防水板 用于窗户开口处周围的铝制覆膜，须尾接到Linea Oblique护墙板上	3000mm long 长 3000mm	**305430**
	Stria Aluminium Cavity Closure Aluminium moulding used as vermin proofing. Stria铝制空心封口 用于防止害虫和鸟类进入的铝制覆膜	3000mm long 长 3000mm	**305431**

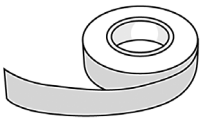
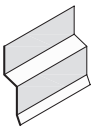
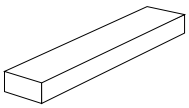
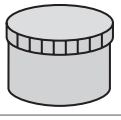
	uPVC Vent Strip PVC moulding used as vermin proofing. uPVC排气带 用于防止害虫和鸟类进入的uPVC覆膜	3000mm long 长 3000mm	**302490**
	Trimline Horizontal Jointer A jointer to cover the butt joint of Oblique Trimline Joint Flashing. 接缝线水平连接件	100mm long	**305871**
	Trimline External Corner Jointer Joins Trimline Joint Flashing at an external corner. 用于覆盖斜边接缝线防水板	55 x 55mm	**305870**
	Trimline Internal Corner Jointer Joins Trimline Joint Flashing at an internal corner. 接缝线阳角连接件	60 x 60mm	**305872**
Tools 工具			
	HardieBlade™ Saw Blade Diamond tip fibre cement circular saw blade. Spacers not included. HardieBlade™ 锯片 金刚石刀头的纤维水泥切割圆锯片。不含垫片	184mm 254mm	**300660** **303375**
	Linea Oblique Plug To fill recess in Linea Oblique Weatherboard Linea Oblique插头	11mm W x 19mm H x 8mm T	**305930**

Accessories/tools not supplied by James Hardie
不由James Hardie出售的配件／工具

James Hardie recommends the following products for use in conjunction with Linea Oblique Weatherboard and James Hardie rigid air barrier. 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Linea Oblique护墙板及James Hardie刚性密封板搭配使用。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。

Product 产品	**Description 描述**
	**Flexible underlay 软性隔层** Must comply with Table 23 of E2/AS1. 必须根据E2/AS1中表23的要求进行安装。
	**Flexible window opening flashing tape 窗口用弹性防水胶带** 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。请参阅本手册关于窗户安装的章节获取更多信息。 e.g. Protecto or SUPER-STICK by Marshall Innovations or 3M™ All Weather Flashing Tape 8067 by 3M™ Marshall Innovations: 0800 776 9727 3M™: 0800 474 787 即：由 Marshall Innovations生产的Protecto或SUPER-STICK，或由3M™生产的3M™ All Weather Flashing Tape 8067 Marshall Innovations 电话: 0800 776 9727 3M™电话: 0800 474 787

	**Rigid air barrier Vertical Joint Sealing Tape** James Hardie刚性密封板纵向连接密封胶带 The tape to be used to seal James Hardie rigid air barrier vertical joints. 用于James Hardie刚性密封板纵向连接缝的密封胶带。 SUPER-STICK Building Tape by Marshall Innovations or 3M™ All Weather Flashing Tape 8067 by 3M™ Marshall Innovations: 0800 776 9727 3M™: 0800 474 787 由 Marshall Innovations生产的SUPER-STICK，或由3M™生产的3M™ All Weather Flashing Tape 8067 Marshall Innovations 电话: 0800 776 9727 3M™电话: 0800 474 787
	Flexible Sealant 软性密封胶 Required to seal the vertical joints. 需要密封纵向接缝处 Bostik Seal N Flex-1, Sikaflex AT Facade, Sikaflex MS or similar. Bostik Seal N Flex-1, Sikaflex AT Facade, Sikaflex MS或类似产品
	65 x 2.87mm 'D' head nail or 65 x 2.87 RounDrive nail 65 x 2.87mmD形头钉子或65 x 2.87mm环纹螺丝钉 (ring shank hot dipped galvanised/stainless steel) For fixing Linea Oblique Weatherboard. 用于安装Linea Oblique护墙板的热浸镀锌钉／不锈钢材质的螺丝钉
	75 x 3.06mm 'D' head nail or 75 x 3.15 RounDrive nail 75 x 3.06mm的D形头钉子 或75 x 3.15mm环纹螺丝钉 (hot dipped galvanised or ring shank stainless steel) For fixing Linea Oblique Weatherboard. 用于安装Linea Oblique护墙板的热浸镀锌钉 ／不锈钢螺丝钉
	40 x 2.8mm or longer HardieFlex™ nail. 40 x 2.8mm或更长的HardieFlex™钉子 For fixing timber cavity battens and aluminium flashings. 用于固定木质空心结构板条和铝制防水板
	Meter Box 电表箱 Refer Electrical Suppliers. 参阅电力供应商说明
	**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. 必须在窗楣上安装，由窗户安装商提供。材质必须符合E2/AS1部分表20和表21的规定
	**Timber cavity batten** 木质空心框架板条 H3.1 minimum treated Timber cavity batten the cladding is fixed over. 经过H3.1级别防腐处理的木质空心框架板条，外墙材料将被固定在该板条上
	**Exterior grade filler 外用级别填缝剂** CRC ADOS Builders Fill or similar two part filler to fill over nail holes CRC ADOS Builders Fill 或类似的双剂式填缝剂，用于填充钉孔。

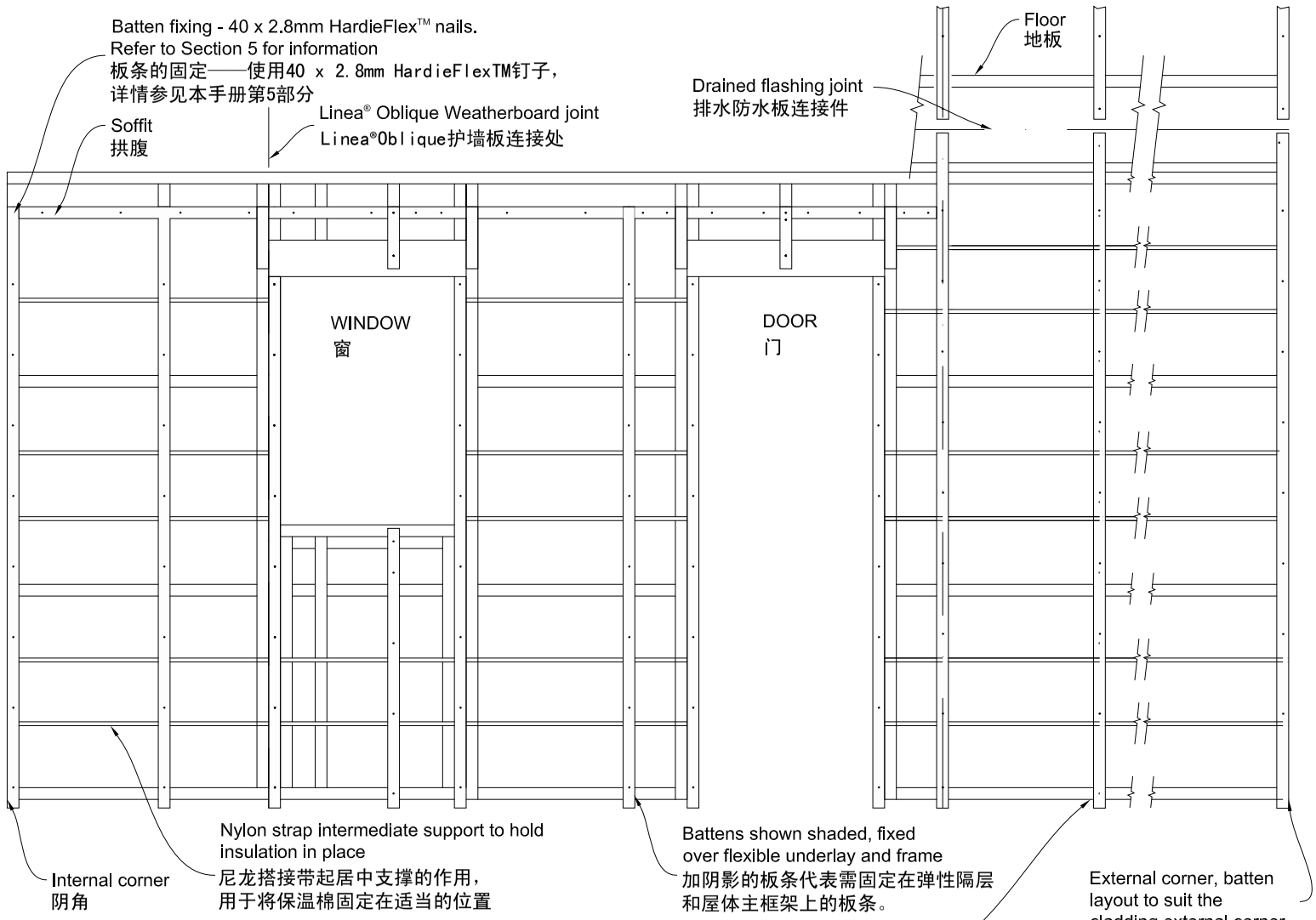
13 Details 详图

The following generic details have been provided in this document for cavity construction methods.
本文档中的以下通用详图是为空心结构建筑法提供的。

Table 5 表5

Details 详图		
Description 描述	**Cavity Construction** 空心结构法	
	Figure No. 图号	**Page No.** 页码
Framing set out 框架布局图	Figure 1图 1	20
Batten fixing set out 板条布局图	Figure 2图 2	21
Foundation detail – option 1 地基详图 – 方案1	Figure 3图 3	22
Foundation detail – option 2 地基详图 – 方案2	Figure 4图 4	22
Fixing detail 200mm 200mm宽护墙板安装详图	Figure 5图 5	23
Fixing detail 300mm 300mm宽护墙板安装详图	Figure 6 图 6	23
Soffit detail 拱腹详图	Figure 7 图 7	24
Soffit detail - Top ventilated cavity 拱腹详图—顶部通风腔	Figure 8 图 8	24
Nil soffit detail 无拱腹详图	Figure 9 图 9	25
Nil soffit detail - Top ventilated cavity 无拱腹详图—顶部通风腔	Figure 10 图 10	25
Vertical trimline joint flashing 纵向接缝防水板	Figure 11 图 11	26
Vertical joint option 纵向连接防水板	Figure 12 图 12	26
Cladding installation 包层安装	Figure 13图 13	27
Vertical joint flashing 纵向连接防水板	Figure 14图 14	28
External aluminium box corner 铝制阳角箱角	Figure 15图 15	28
Axent trim external box corner 边线阳角箱角	Figure 16图 16	29
Internal aluminium corner 铝制阴角	Figure 17图 17	29
Window sill 窗台	Figure 18图 18	30
Window jamb 窗框	Figure 19图 19	31
Window head with full cladding across head flashing 窗楣详图——窗楣防水板之上为完整护墙板的情况	Figure 20图 20	32
Window head to cladding full board 窗楣与完整护墙板的连接	Figure 21图 21	33
Window jamb flashing 窗框防水板	Figure 22图 22	33
Window head with cladding cut around head flashing 带有饰面的窗台	Figure 23图 23	34
Window head to Linea Oblique Weatherboard 300mm cut board 窗楣详图——经过切割的300mm宽Linea Oblique护墙板	Figure 24图 24	34
Window sill with facings 带有饰面的窗台	Figure 25图 25	35
Window and door jamb with facings 带有饰面的门框和窗框	Figure 26图 26	36
Window and door head with facings 带有饰面的门头和窗户	Figure 27图 27	37
Over joist at floor level 位于房屋一层的地板龙骨	Figure 28图 28	38
Trimline flashing joint at floor level 房屋地面一层的接缝防水板的连接	Figure 29图 29	39
Drained flashing joint at floor level 房屋一层的排水防水板的连接	Figure 30图 30	40
Trimline joint 接缝连接	Figure 31图 31	41
Drained flashing joint at floor level 房屋一层的排水防水板的连接	Figure 32图 32	42
Apron flashing detail 烟囱防水详图	Figure 33图 33	43
Parapet flashing 矮墙的防水	Figure 34图 34	43
Roof to wall junction detail 屋顶与墙连接的详图	Figure 35 图 35	44
Meter box at sill 位于窗台的仪表箱	Figure 36 图 36	44
Meter box at jamb 位于窗框的仪表箱	Figure 37 图 37	45
Meter box at head 位于窗楣的仪表箱	Figure 38 图 38	45
Enclosed deck 封闭式露台	Figure 39 图 39	46
Pipe penetration 管道穿透墙体	Figure 40 图 40	46
Garage head 车库头	Figure 41 图 41	47
Garage jamb 车库门框	Figure 42 图 42	47

Figure 1: Framing set out
图1：框架布局图



- The cladding vertical joint is formed with vertical trimline joint on the timber cavity batten fixed over the stud.
- 外墙板的纵向连接口必须位于钉在双墙筋上的板条上
- If studs are placed at 400mm centres no intermediate support is required.
- 如果墙筋的中心间距为400mm，则无需添加居中支撑

Figure 2: Batten fixing set out
图2: 板条布局图

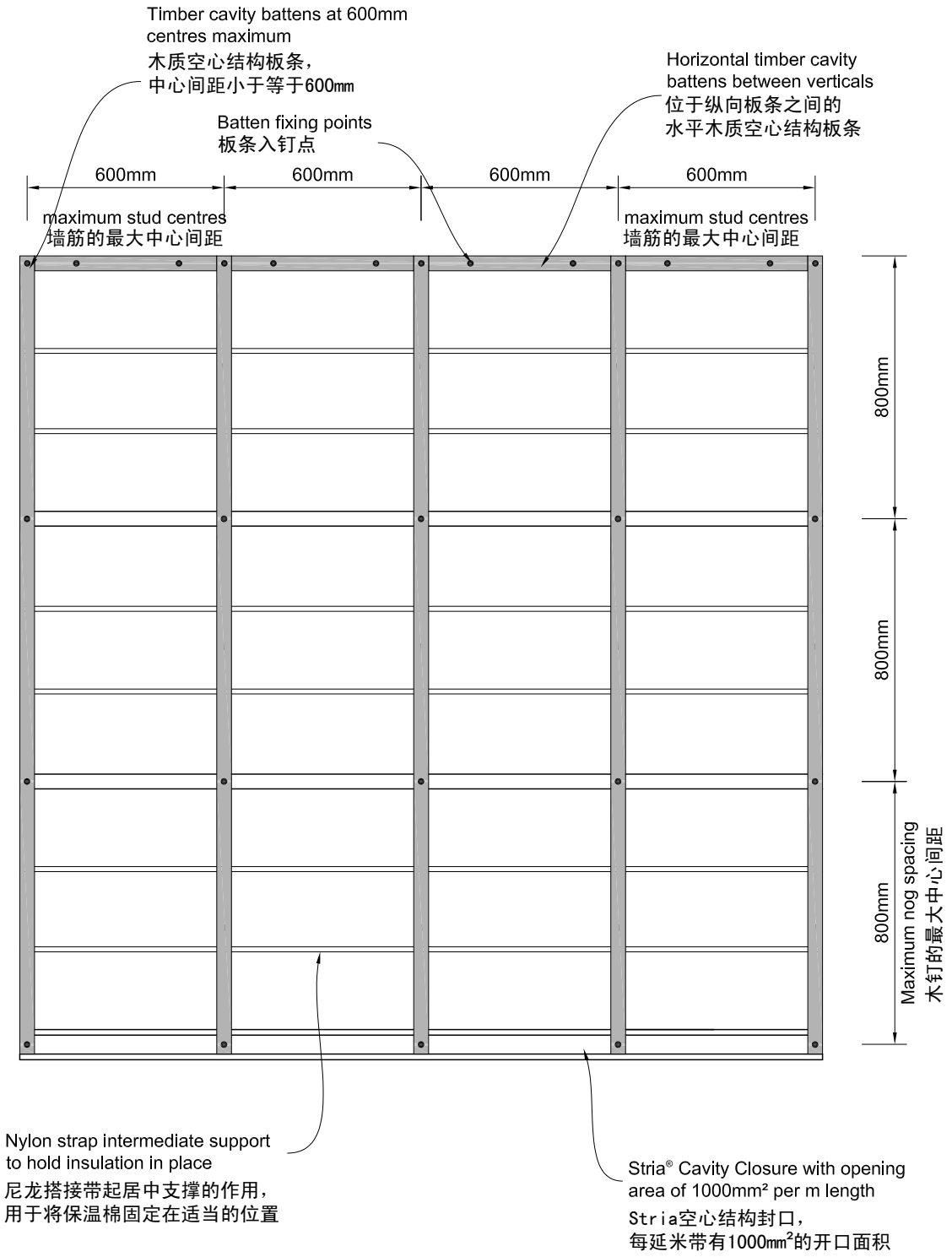


Figure 3: Foundation detail – option 1
图3: 地基详图 – 方案1

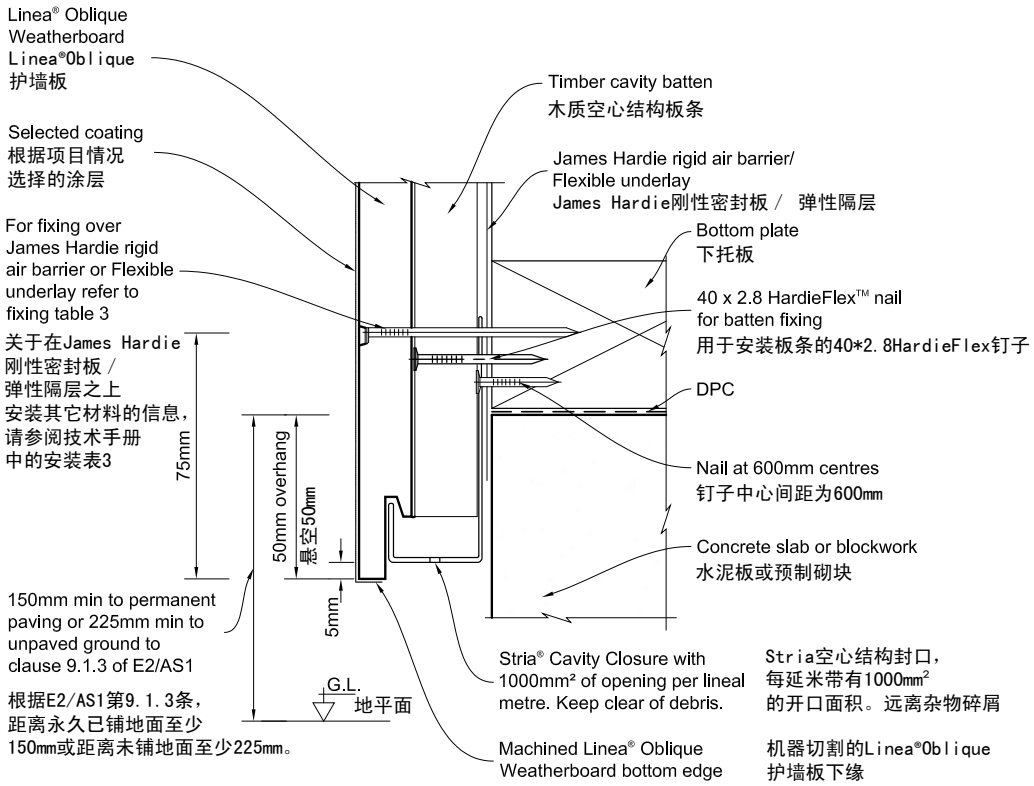


Figure 4: Foundation detail – option 2
图4: 地基详图 – 方案2

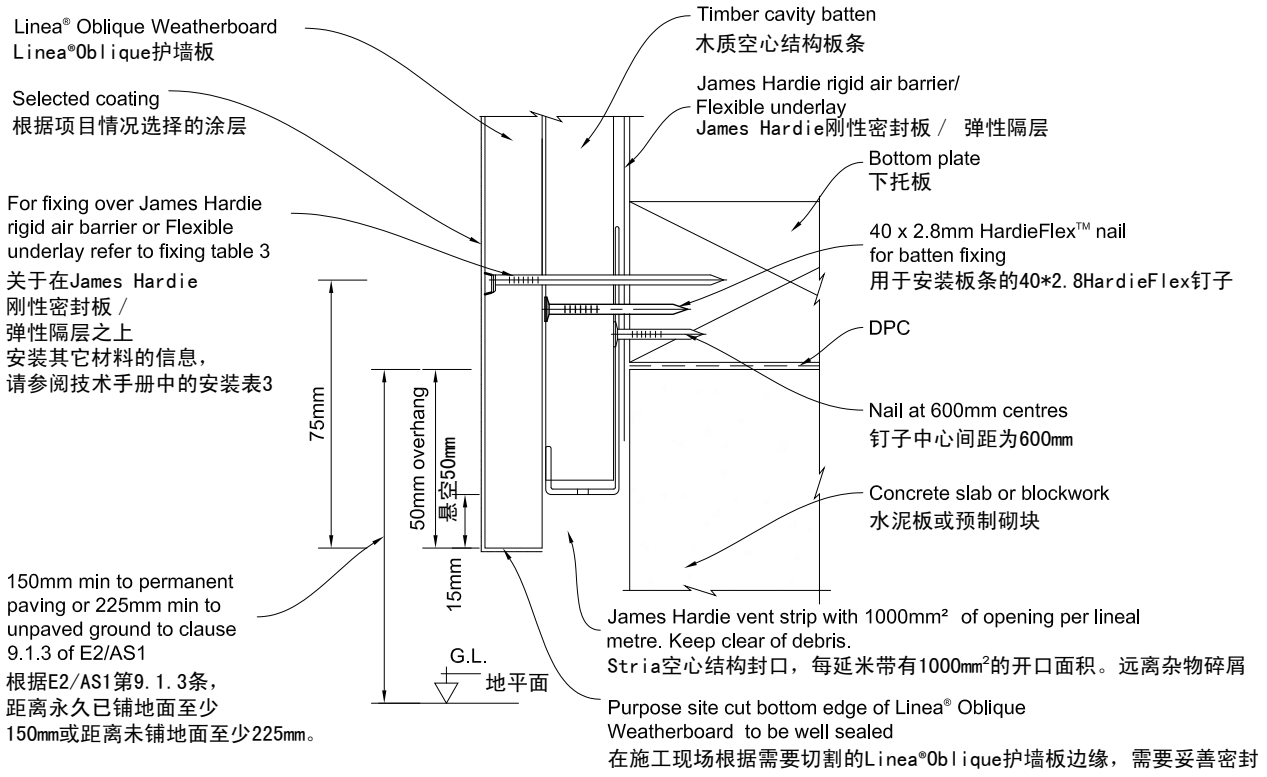


Figure 5: Fixing detail 200mm
图5: 200mm宽护墙板安装详图

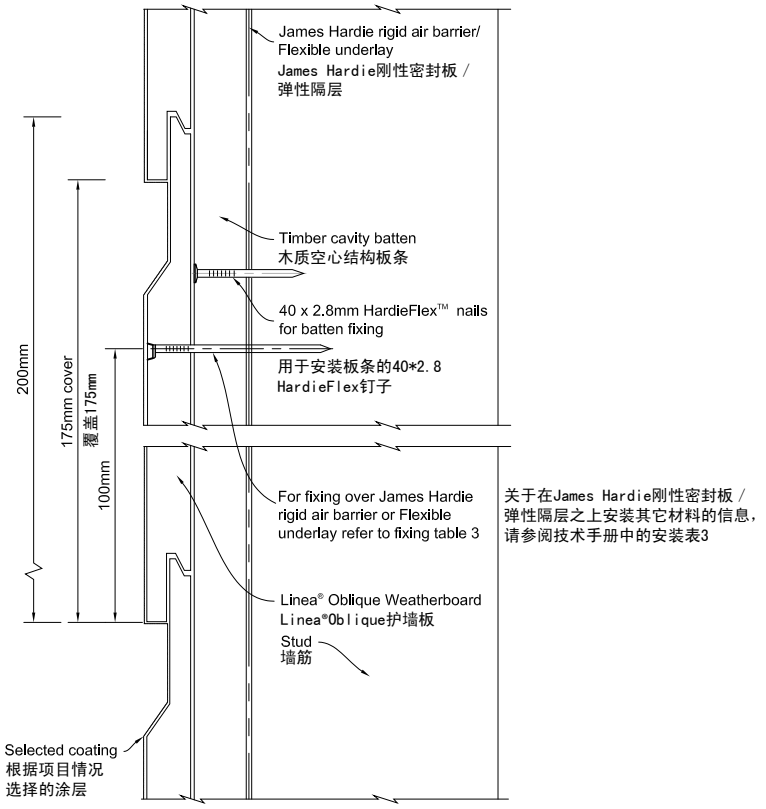


Figure 6: Fixing detail 300mm
图6: 300mm宽护墙板安装详图

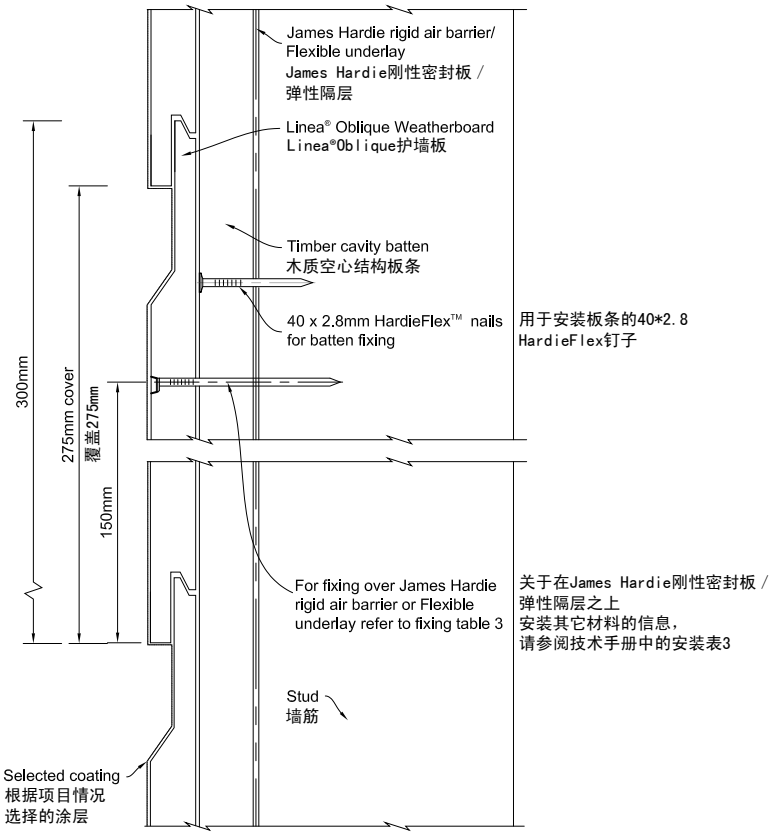


Figure 7: Soffit detail
图7: 拱腹详图

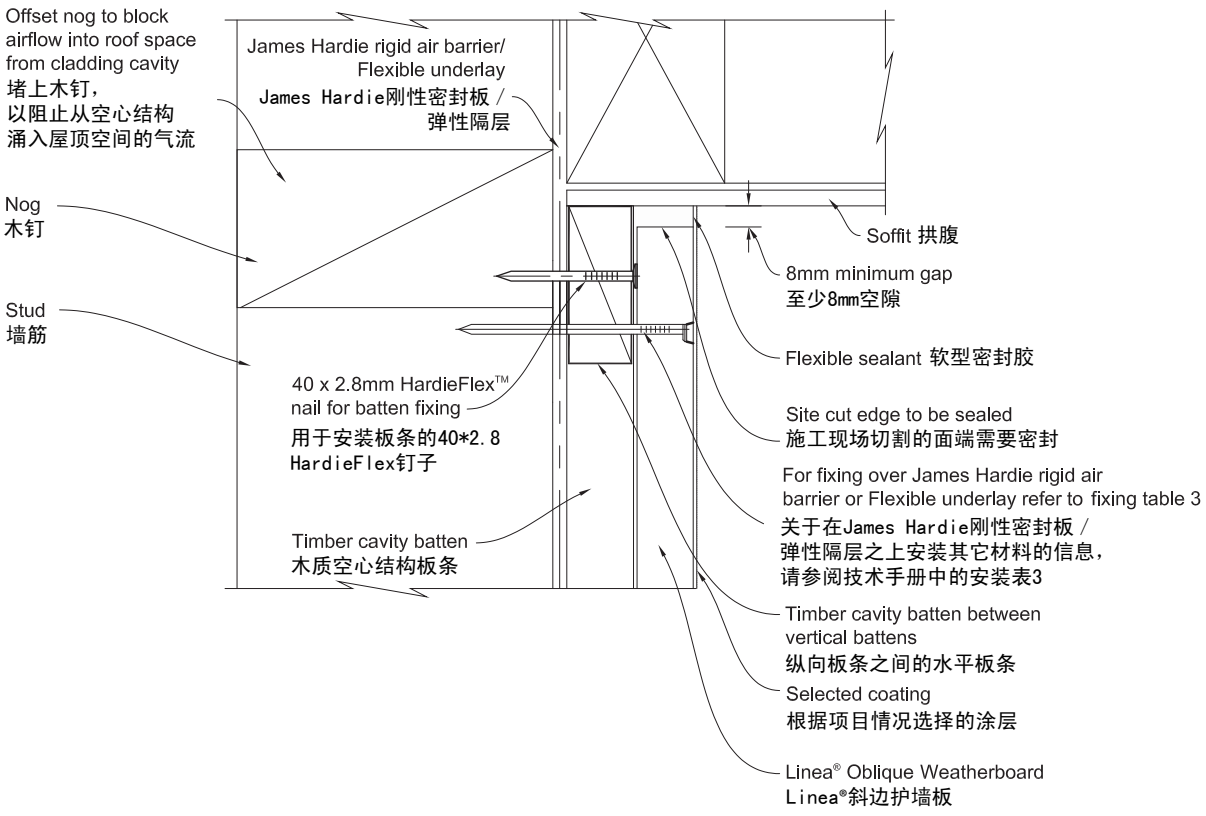


Figure 8: Soffit detail - Top ventilated cavity
图8: 拱腹详图—顶部通风腔

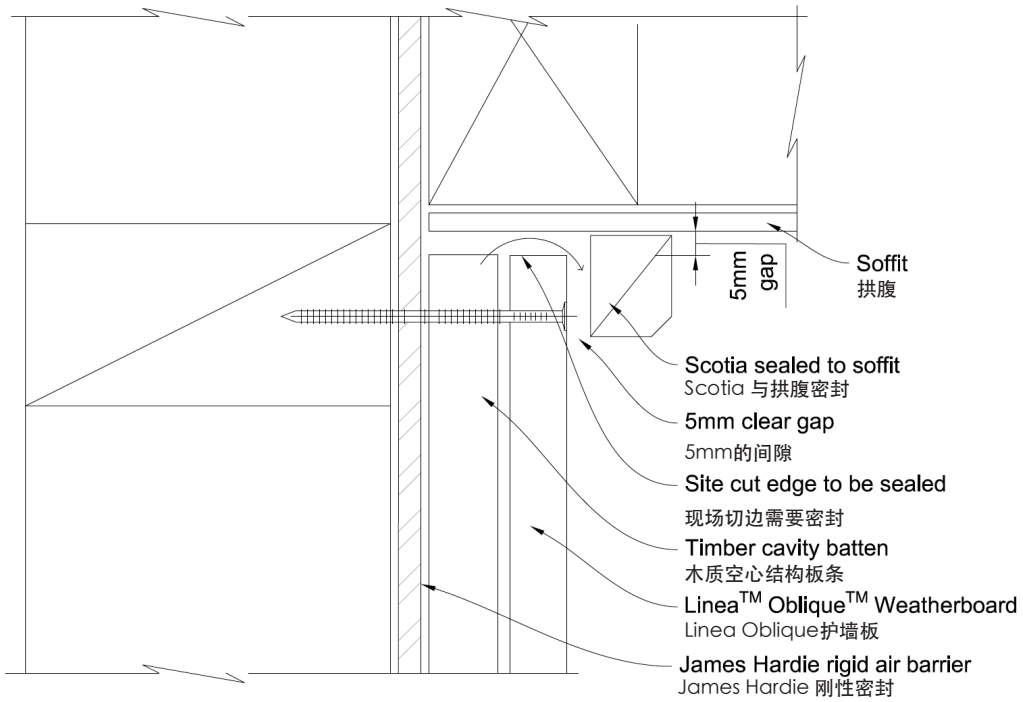


Figure 9: Nil soffit detail
图9: 无拱腹详图

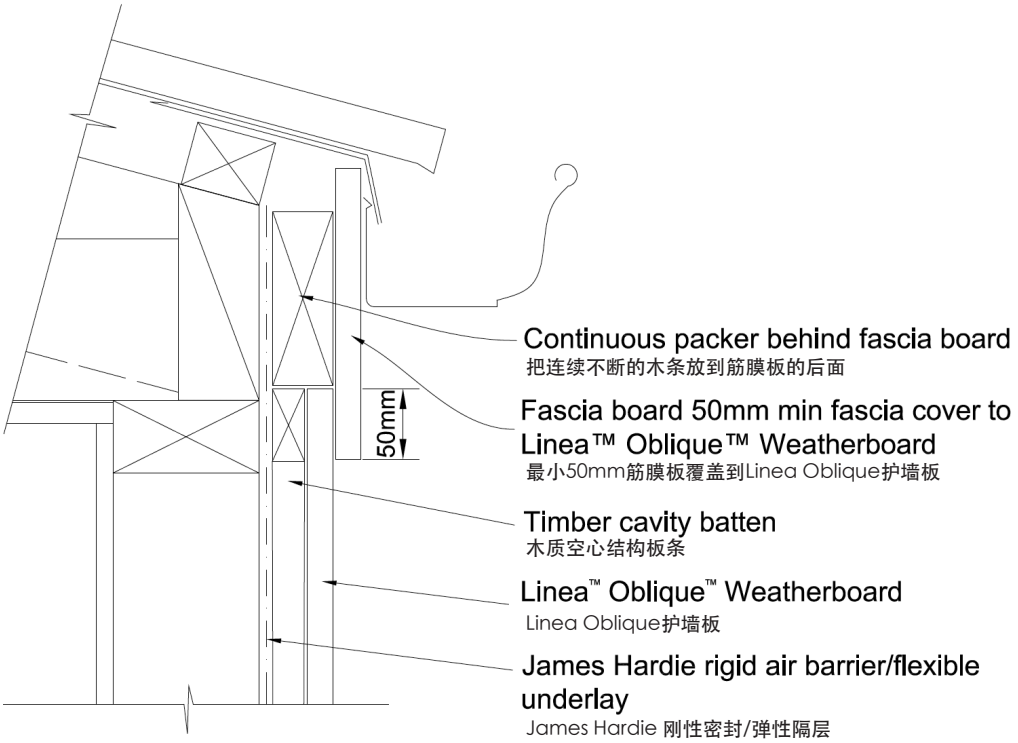


Figure 10: Nil soffit detail - Top ventilated cavity
图10: 无拱腹详图—顶部通风腔

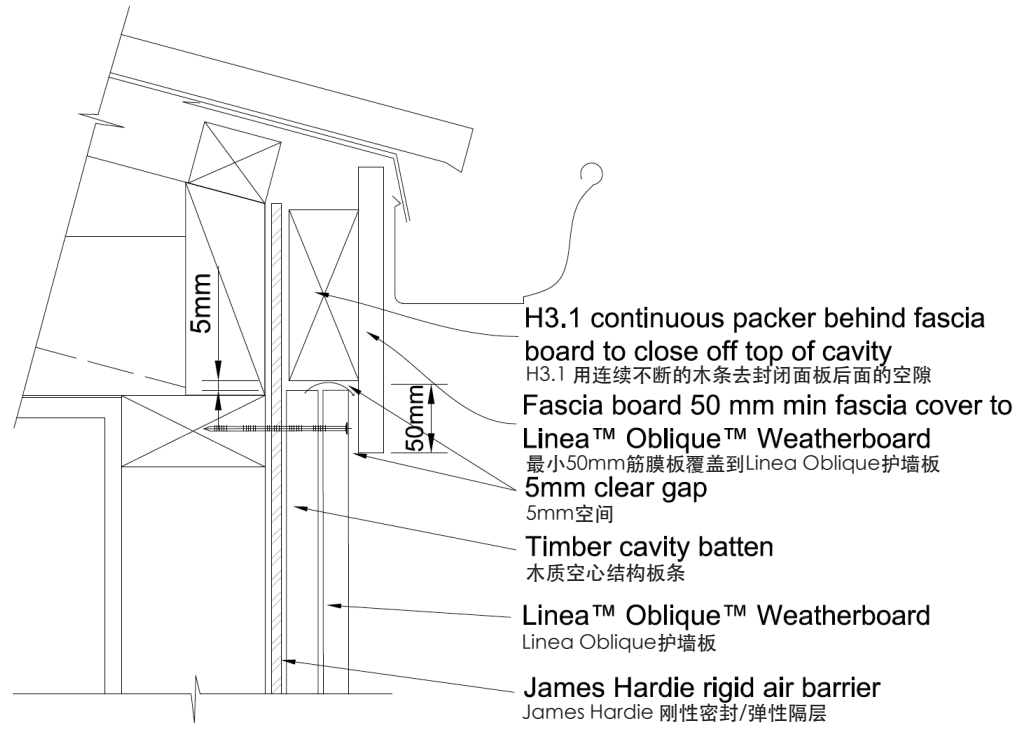


Figure 11: Vertical trimline joint flashing
图11: 纵向接缝防水板

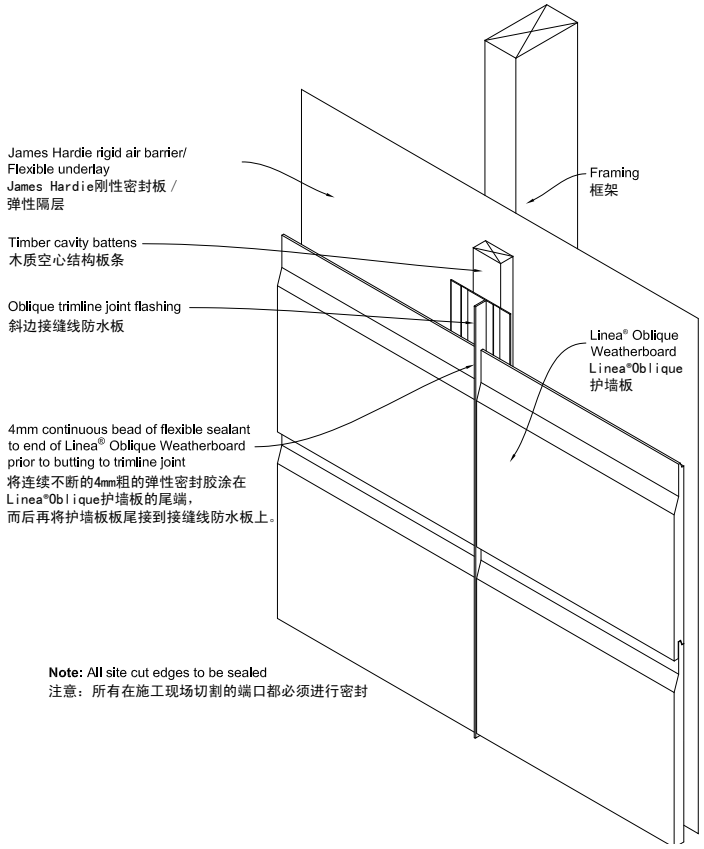


Figure 12: Vertical joint option
图12: 纵向连接防水板

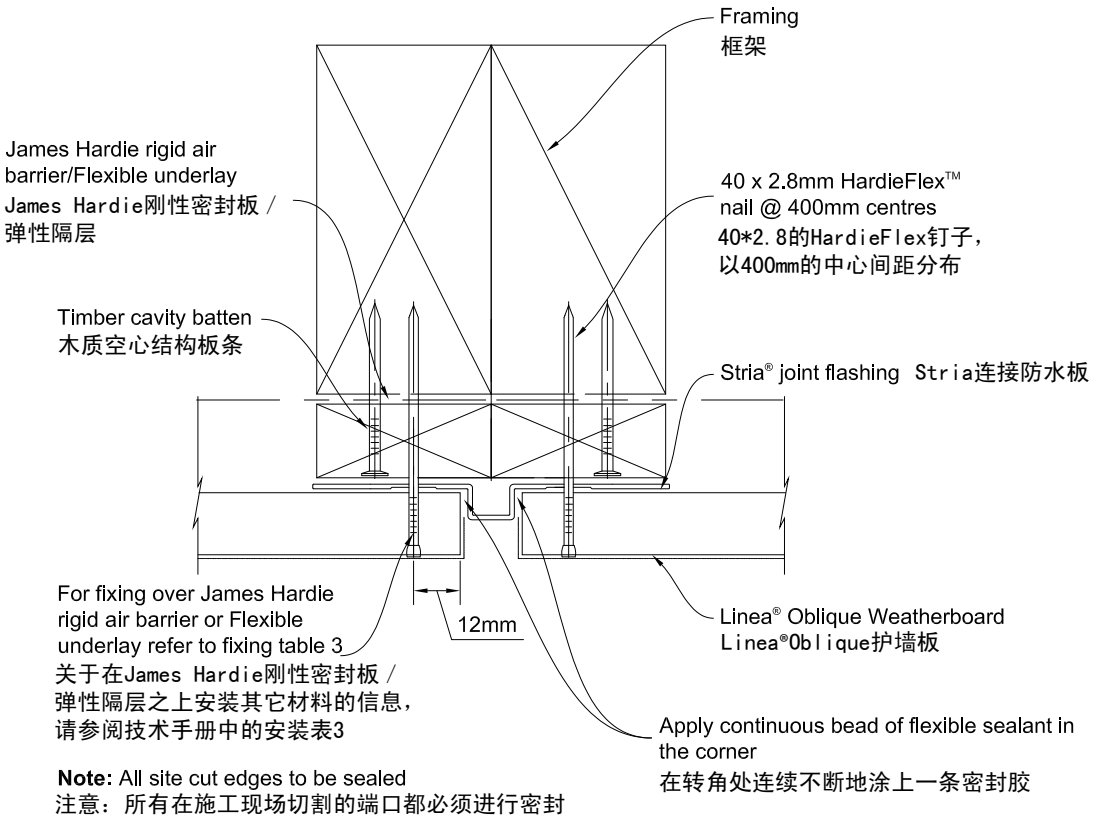
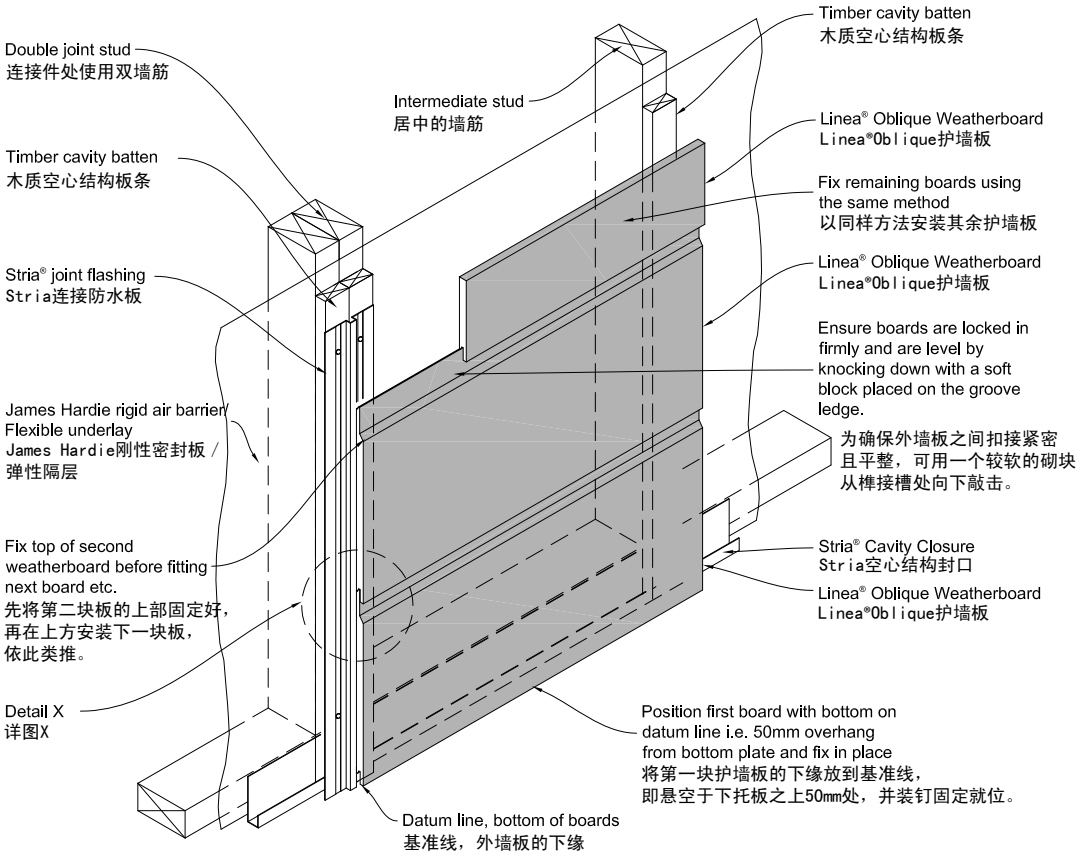
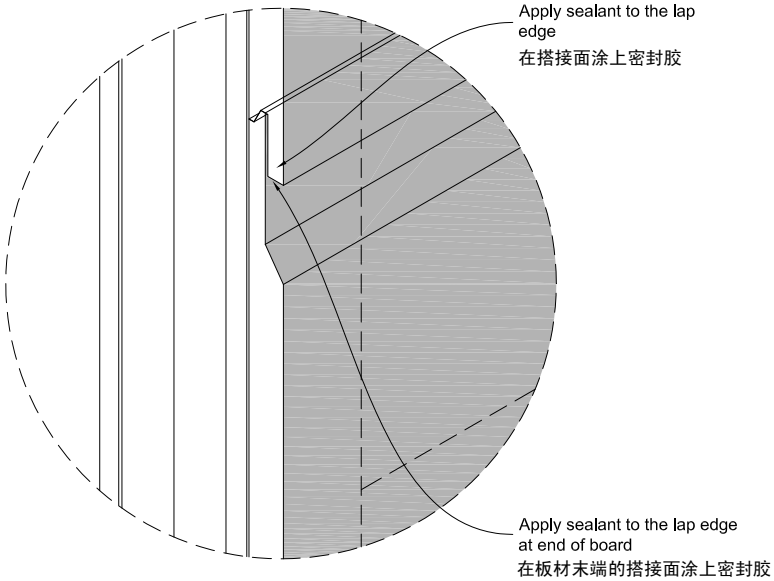


Figure 13: Cladding installation
图13: 纵向连接防水板





Enlarged Detail X　放大的详图X

Note: All site cut edges to be sealed
注意：所有在施工现场切割的端口都必须进行密封

Figure 14: Vertical joint flashing
图14: 纵向连接防水板

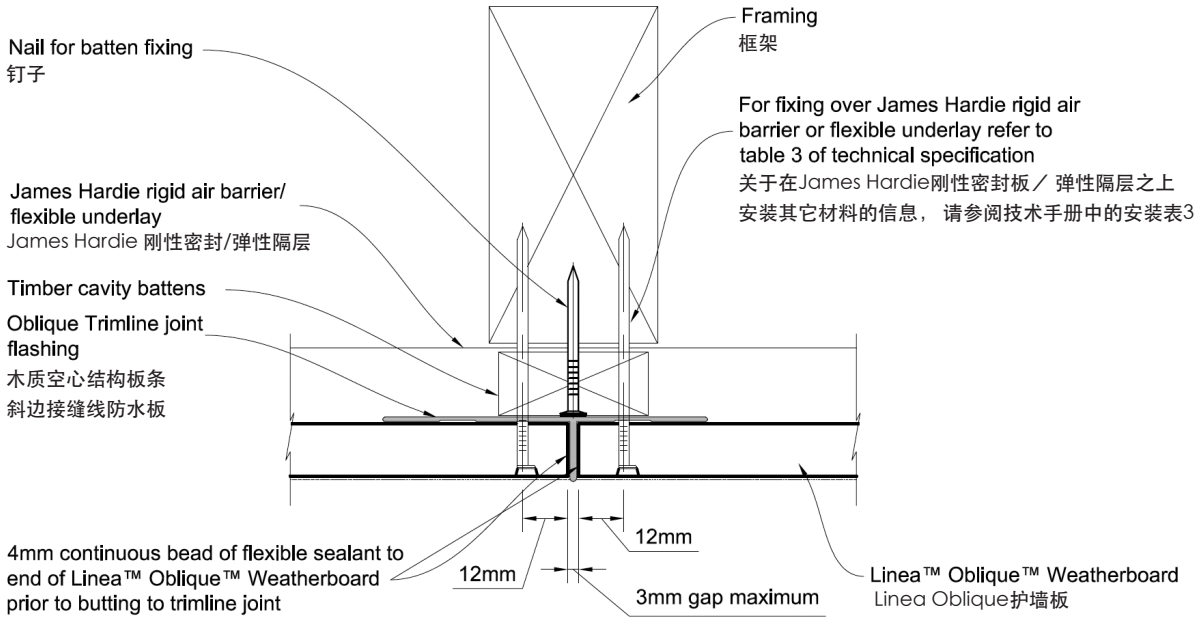


Figure 15: External aluminium box corner
图15: 铝制阳角箱角

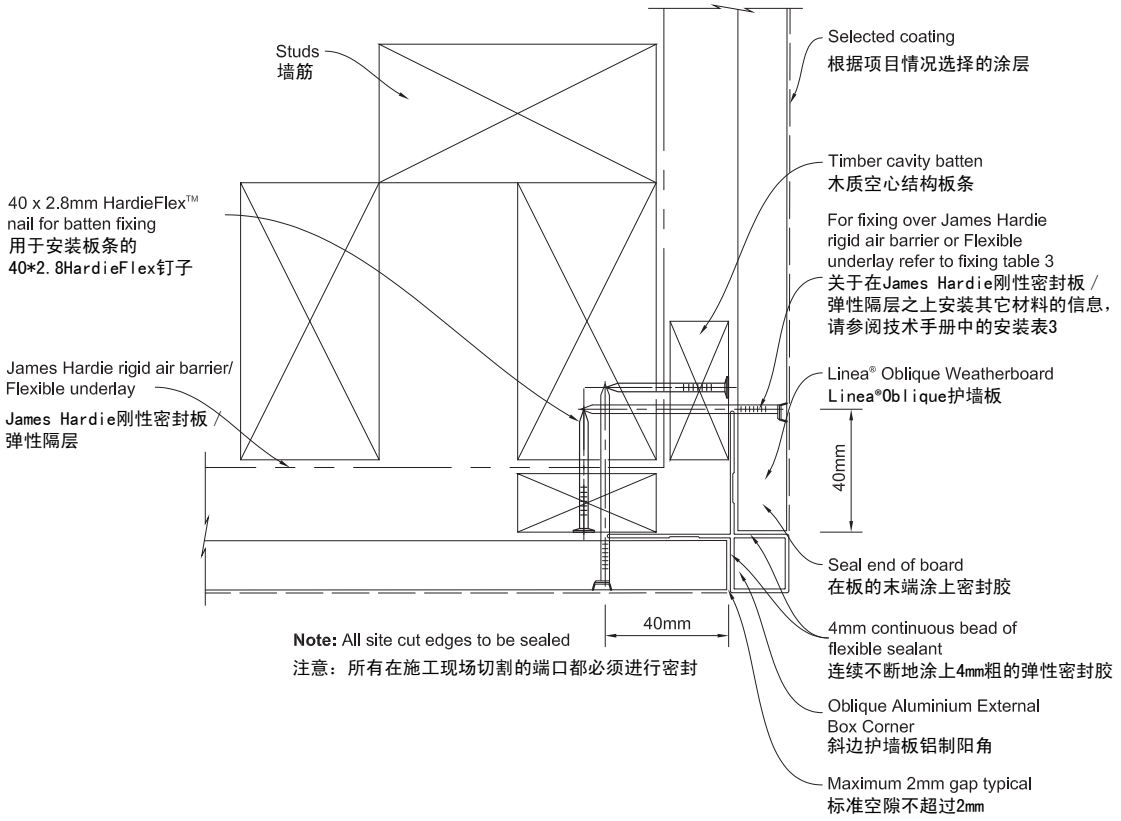
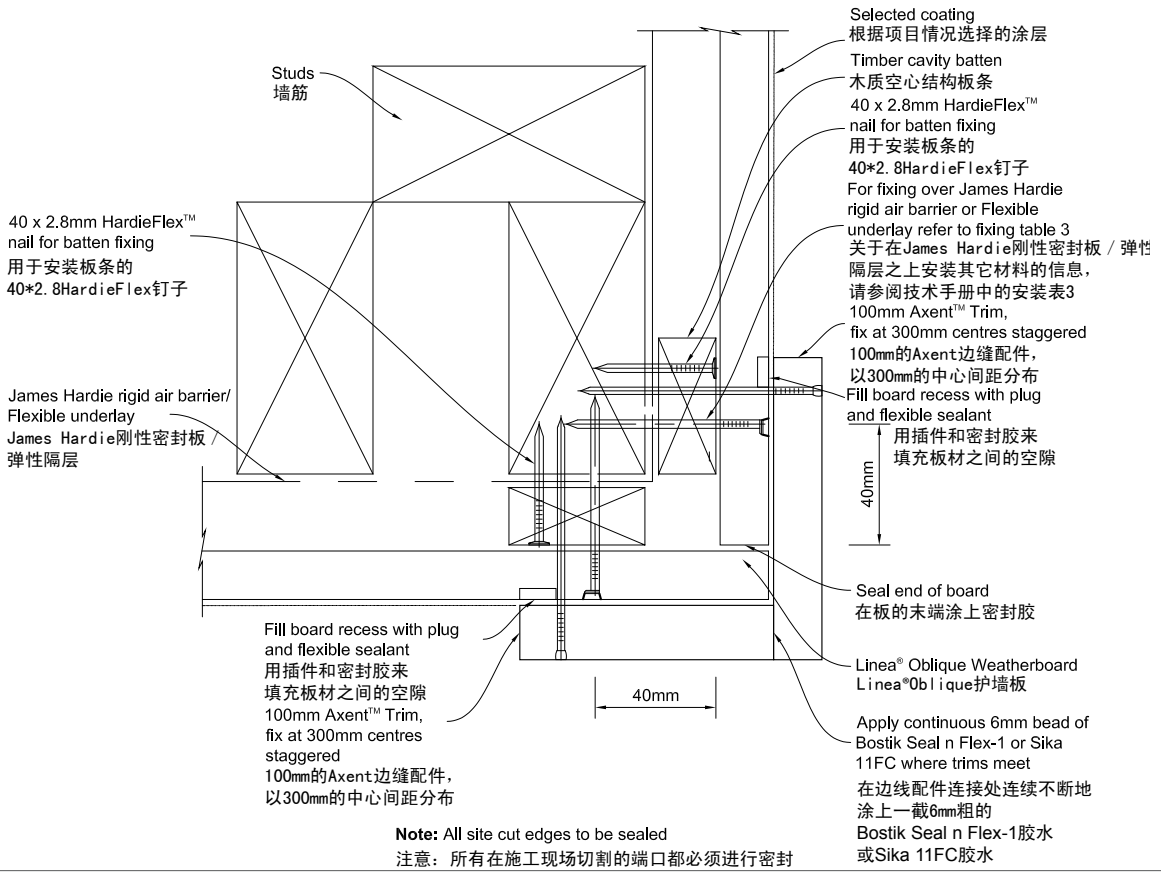
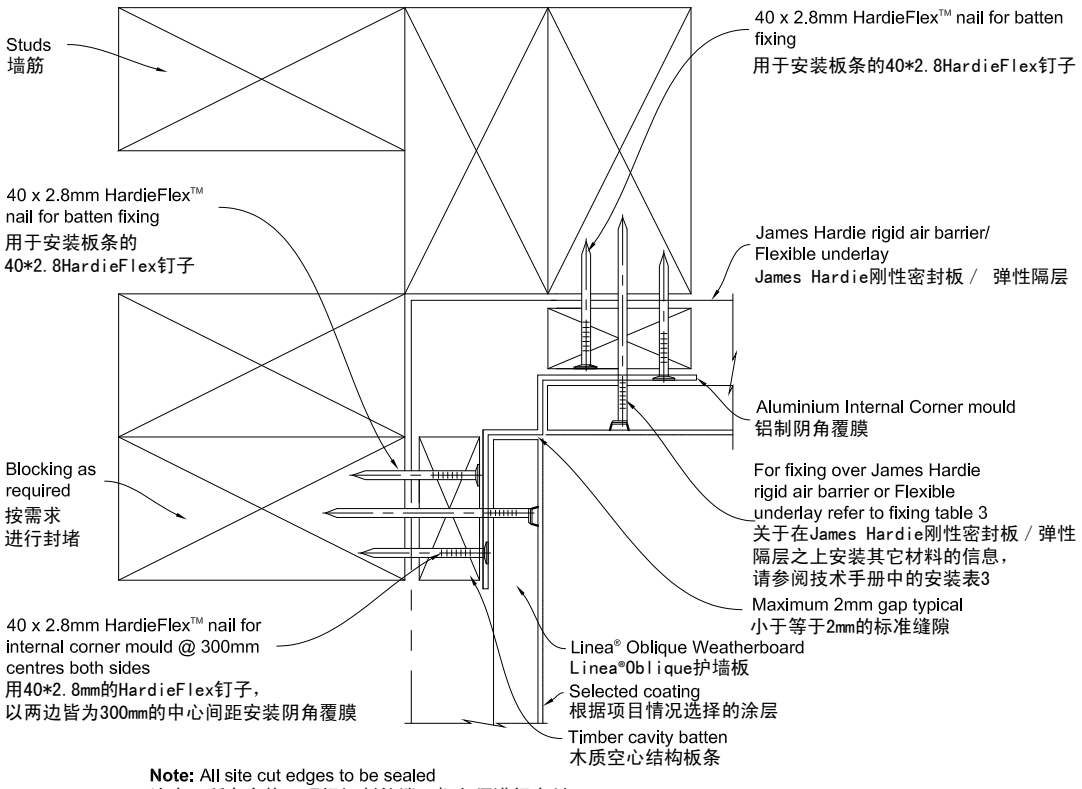


Figure 16: Axent trim external box corner
图16: Axent边线阳角箱角



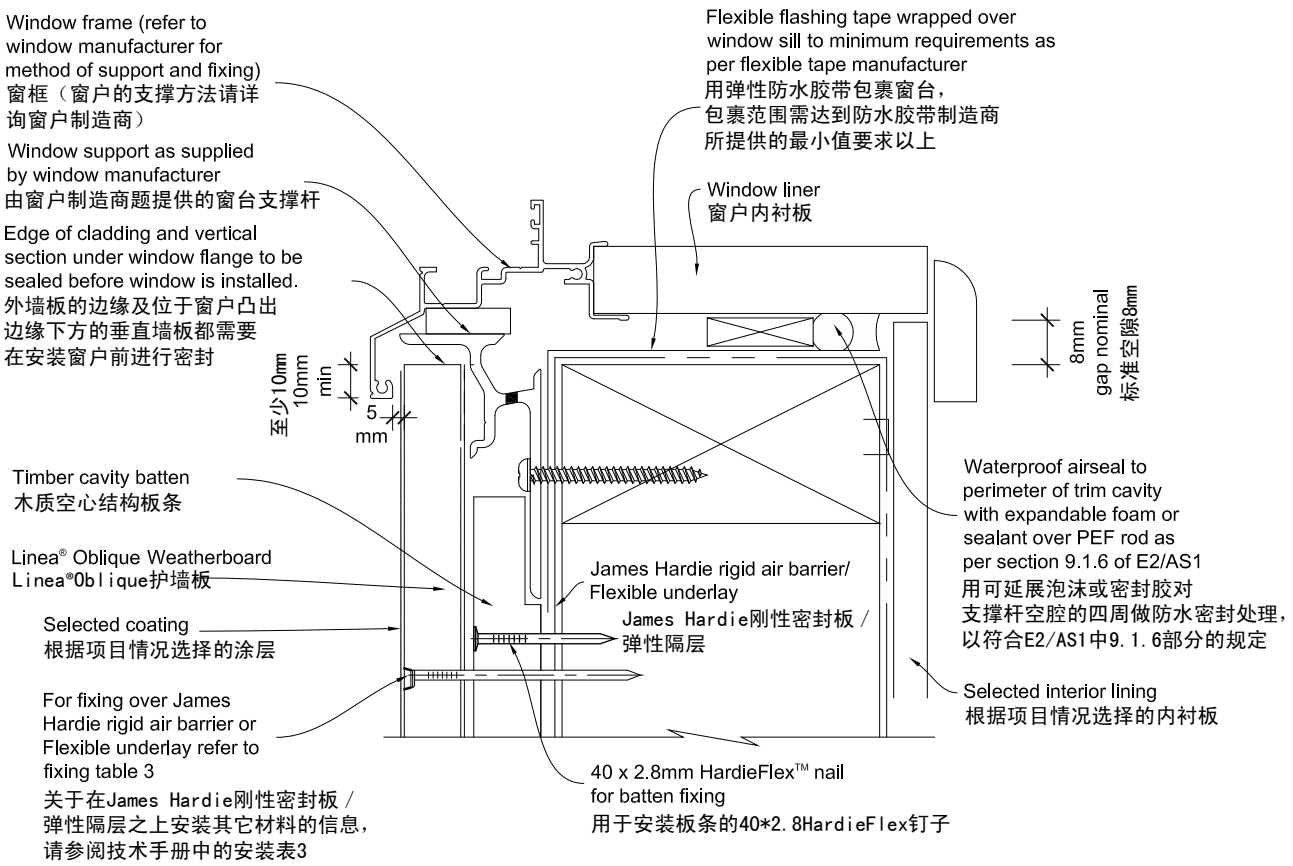
Note: All site cut edges to be sealed
注意：所有在施工现场切割的端口都必须进行密封

Figure 17: Internal aluminium corner
图17: 铝制阴角



Note: All site cut edges to be sealed
注意：所有在施工现场切割的端口都必须进行密封

Figure 18: Window sill
图18: 窗台



General notes for materials selection 关于材料选择的常规提示

1. Flashing materials must be selected based on environmental exposure, refer to NZS 3604 and Table 20 of NZBC E2/AS1.
1. 防水材料必须基于所处的环境来选择，详情请参阅NZS3604和NZBC条款E2/AS1，表20。
2. Flexible underlay must comply with acceptable solution E2/AS1.
2. 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.
3. 防水胶带必须能够与所选用的弹性隔层／James Hardie刚性隔板或其他与之直接接触的材料相互兼容。
4. When James Hardie rigid air barriers are used flashing tape to be applied to the entire opening.
4. 当使用James Hardie刚性密封板时，其所有暴露区域均需要使用防水胶带。

Refer to the manufacturer or supplier for technical information for these materials.
关于以上材料的技术信息，清参阅材料制造商或供应商所提供的资料

Figure 19: Window jamb
图19：窗框

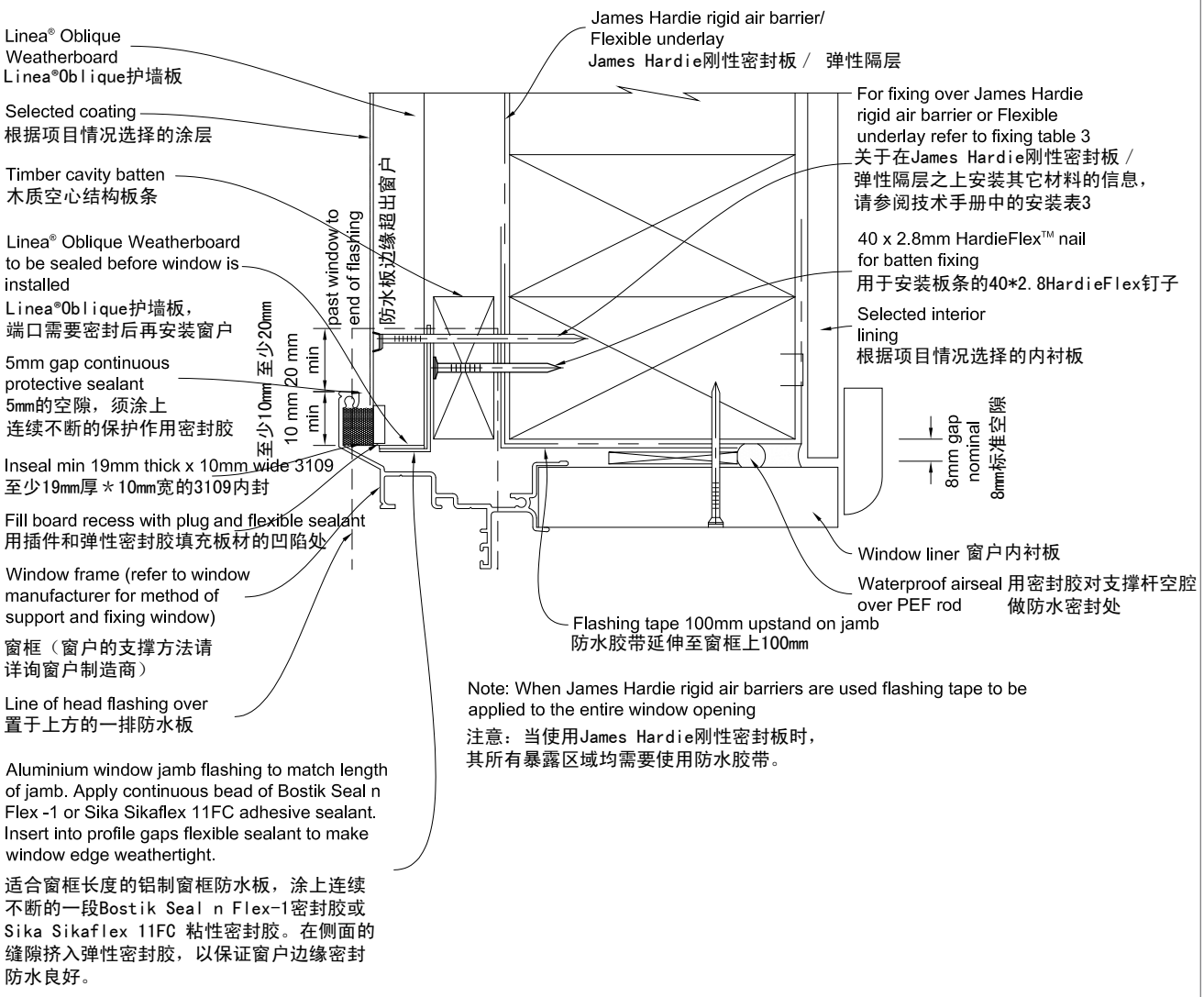
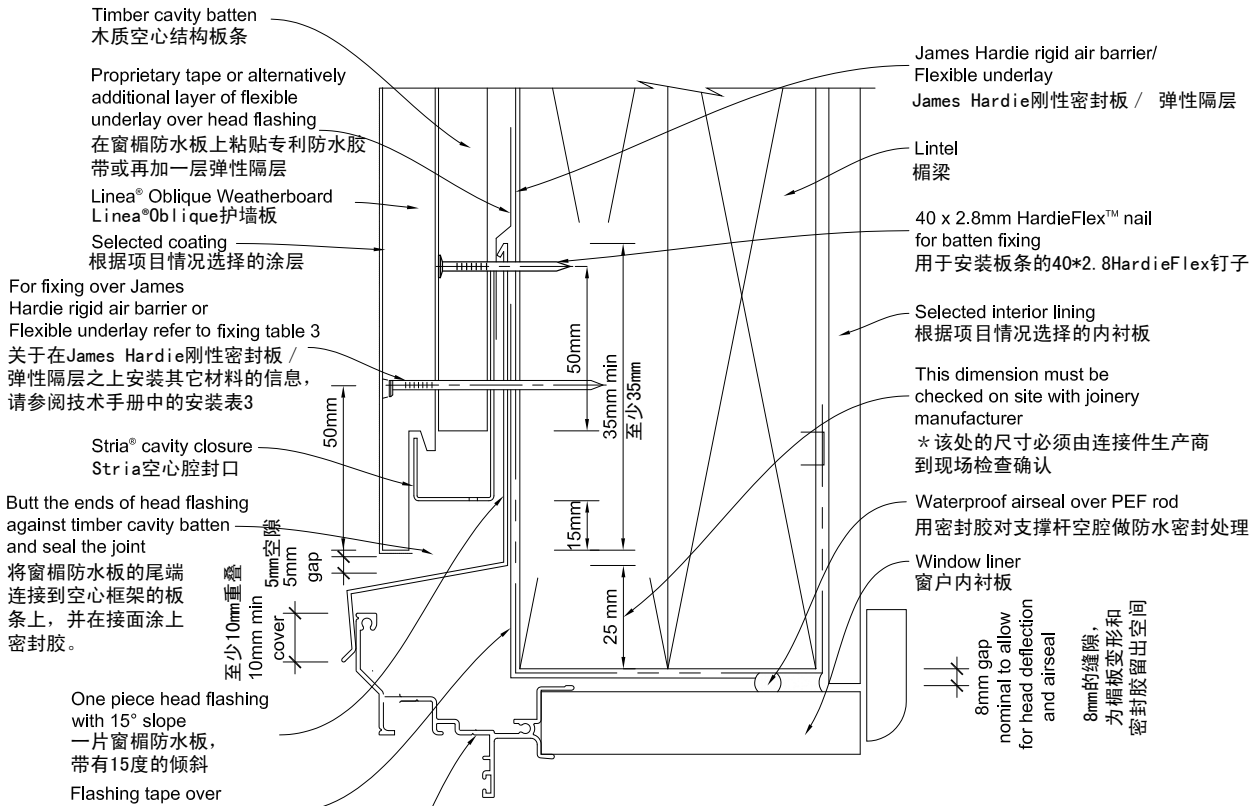


Figure 20: Window head with full cladding across head flashing
图20：窗楣详图——窗楣防水板之上为完整护墙板的情况



Note: 注意：

- When James Hardie rigid air barriers are used flashing tape to be applied to the entire window opening.
  当使用James Hardie刚性密封板时，其所有暴露区域均需要使用防水胶带。
- Sealant must be installed between head flashing and window flange in VH and EH wind zones and SED projects.
  在VH和EH风区或特殊设计项目中，必须在窗楣防水板和窗户凸出边缘之间使用密封胶。
- Alternatively, the head flashings can be formed with stop ends as per E2/AS1
  或者，可按照E2AS4的规定处理窗楣防水板的末端。

Figure 21: Window head to cladding full board
图21：窗楣与完整护墙板的连接

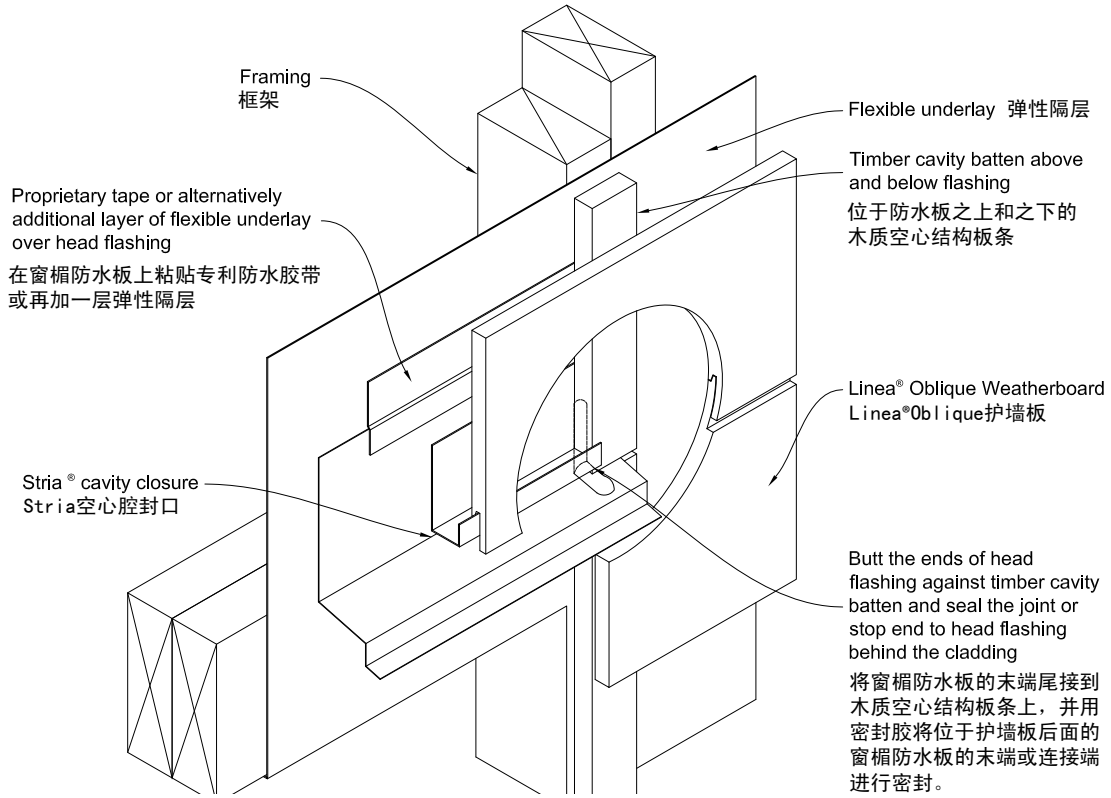


Figure 22: Window jamb flashing
图22：窗框防水板

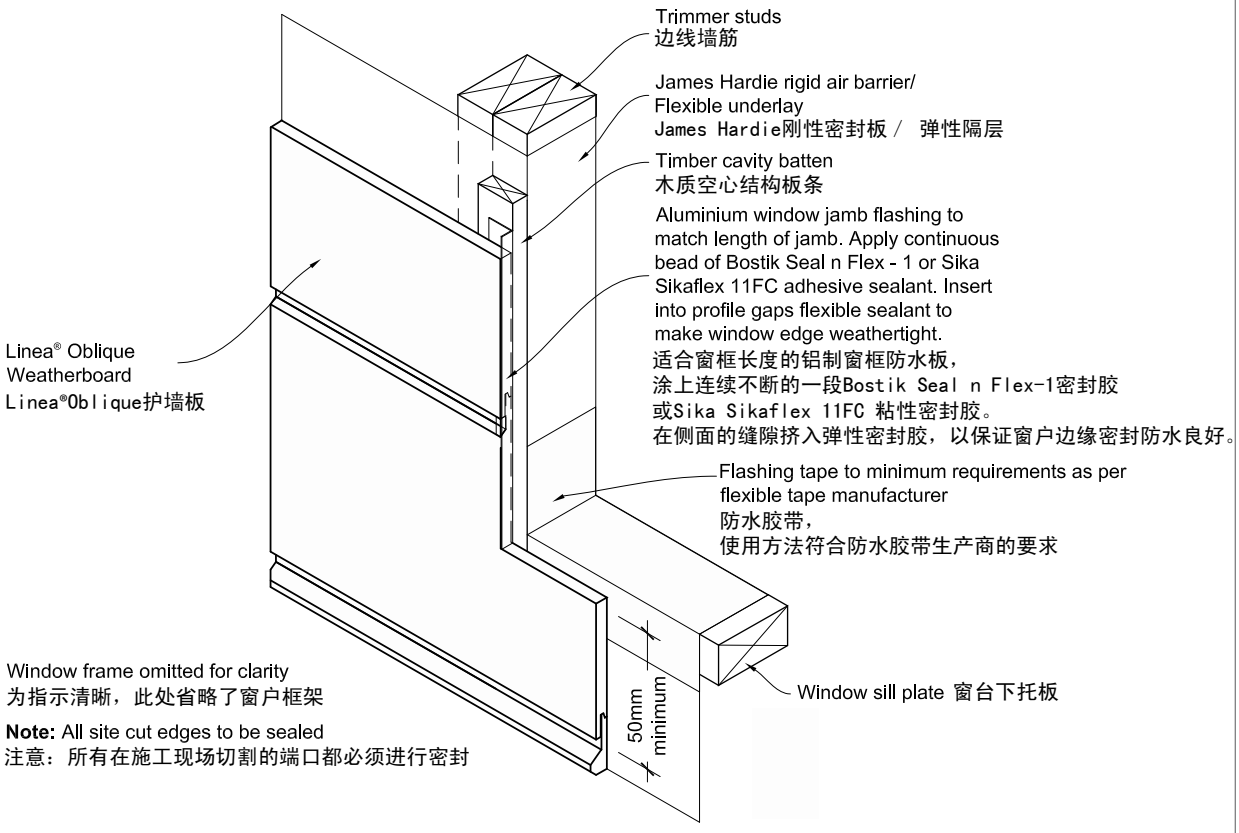
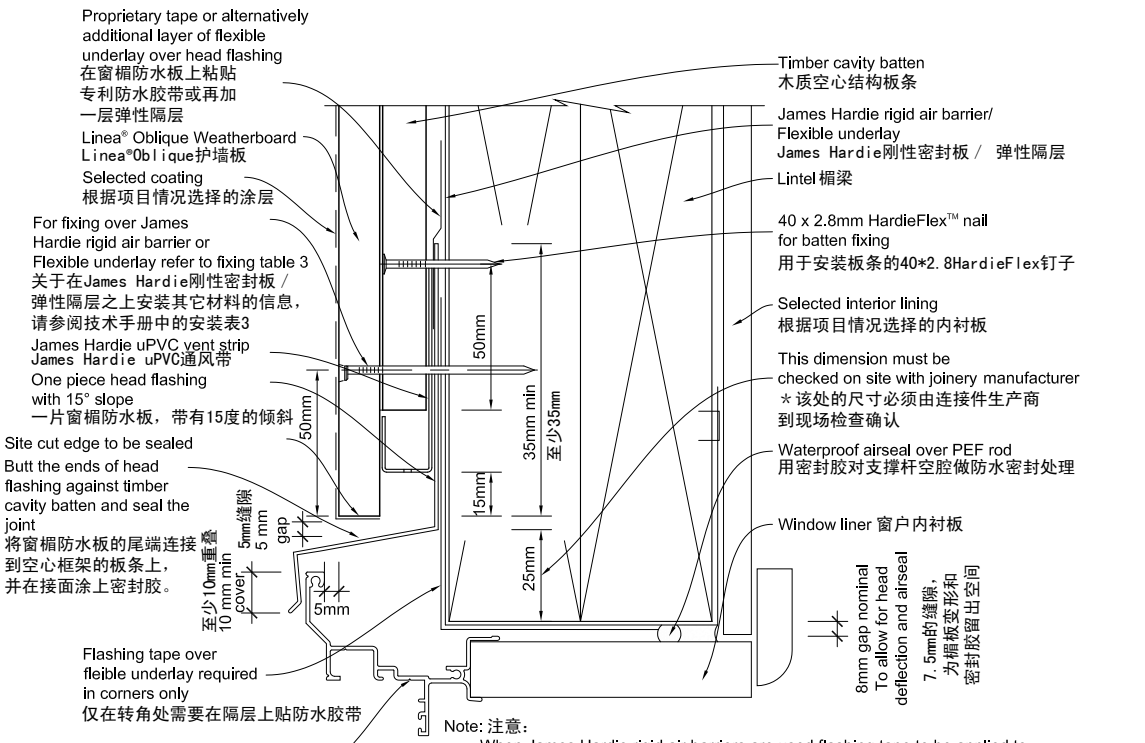


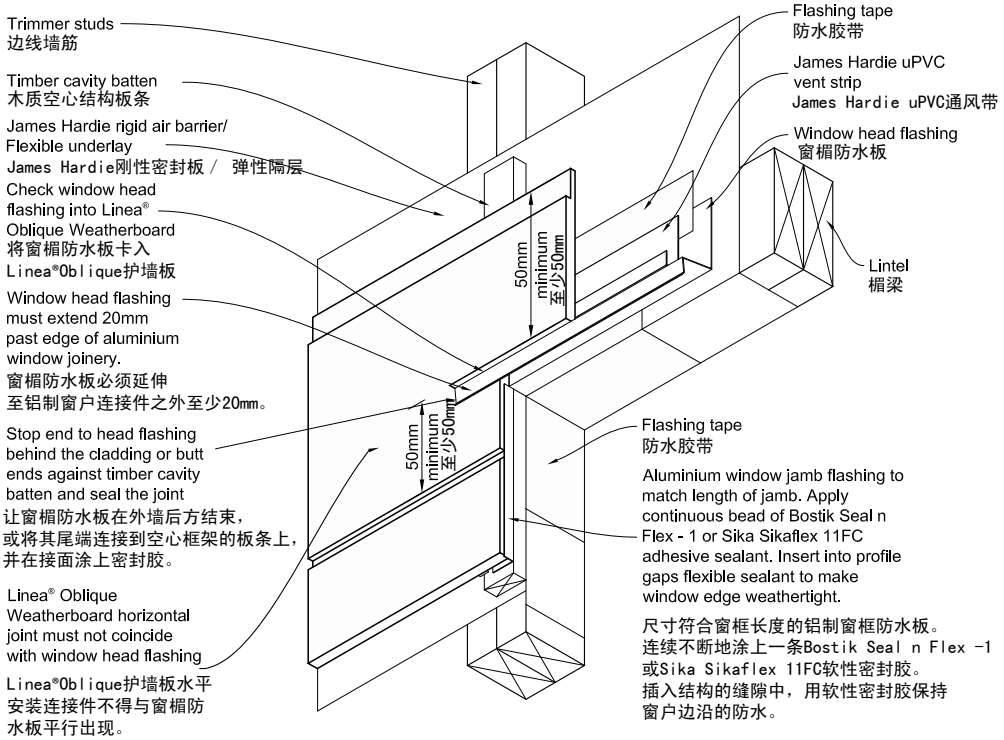
Figure 23: Window head with cladding cut around head flashing
图23: 带有饰面的窗台



Note: 注意：

- When James Hardie rigid air barriers are used flashing tape to be applied to the entire window opening.
  当使用James Hardie刚性密封板时，其所有暴露区域均需要使用防水胶带。
- Sealant must be installed between head flashing and window flange in VH and EH wind zones and SED projects.
  在VH和EH风区或特殊设计项目中，必须在窗楣防水板和窗户凸出边缘之间使用密封胶。
- Alternatively, the head flashings can be formed with stop ends as per E2/AS1
  或者，可按照E2AS4的规定处理窗楣防水板的末端。

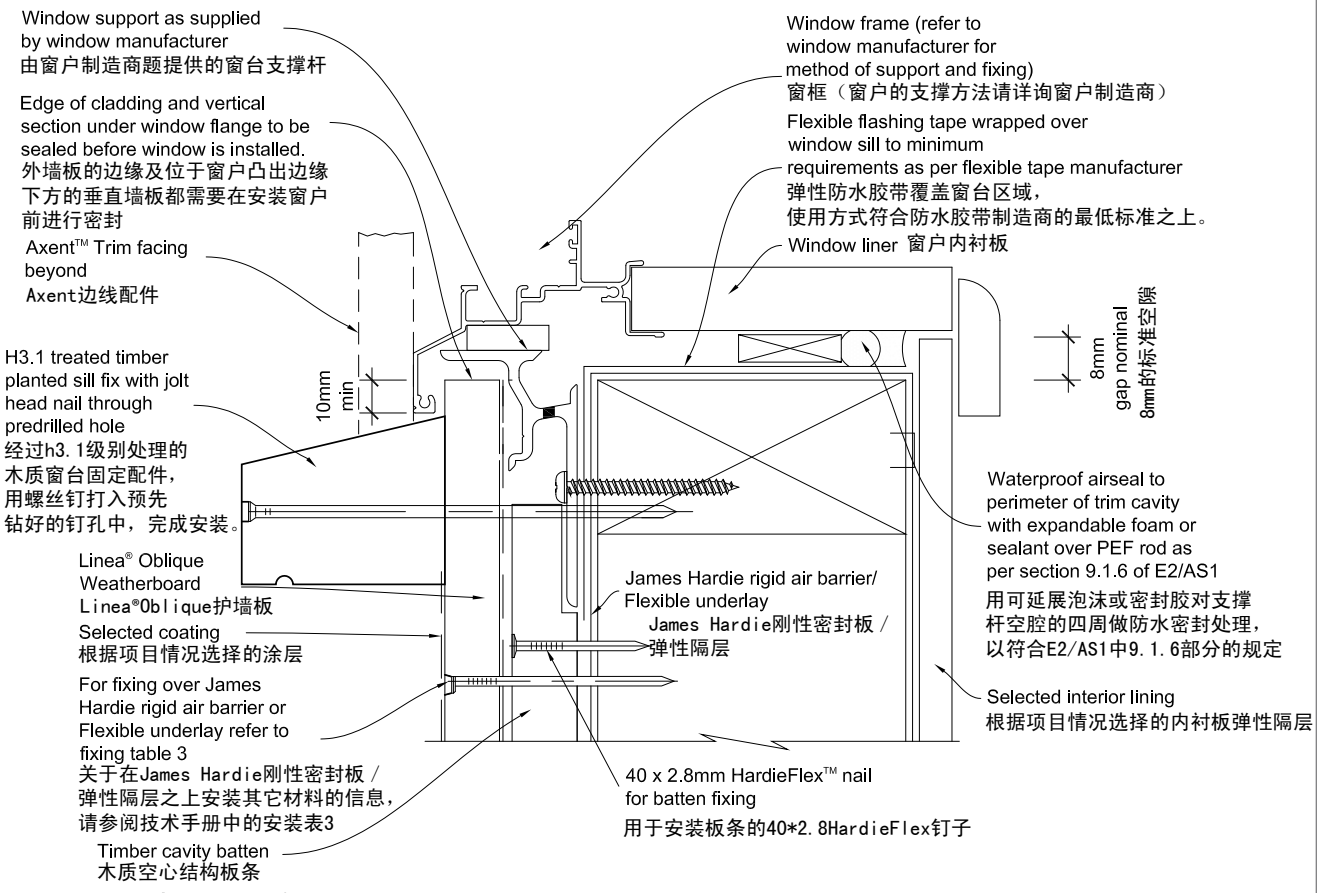
Figure 24: Window head to Linea Oblique Weatherboard 300mm cut board
图24: 窗楣详图——经过切割的300mm宽Linea Oblique护墙板



Note: 注意：

- All site cut edges to be sealed
  所有在施工现场切割的端口都必须进行密封胶带

Figure 25: Window sill with facings
图25: 带有饰面的窗台

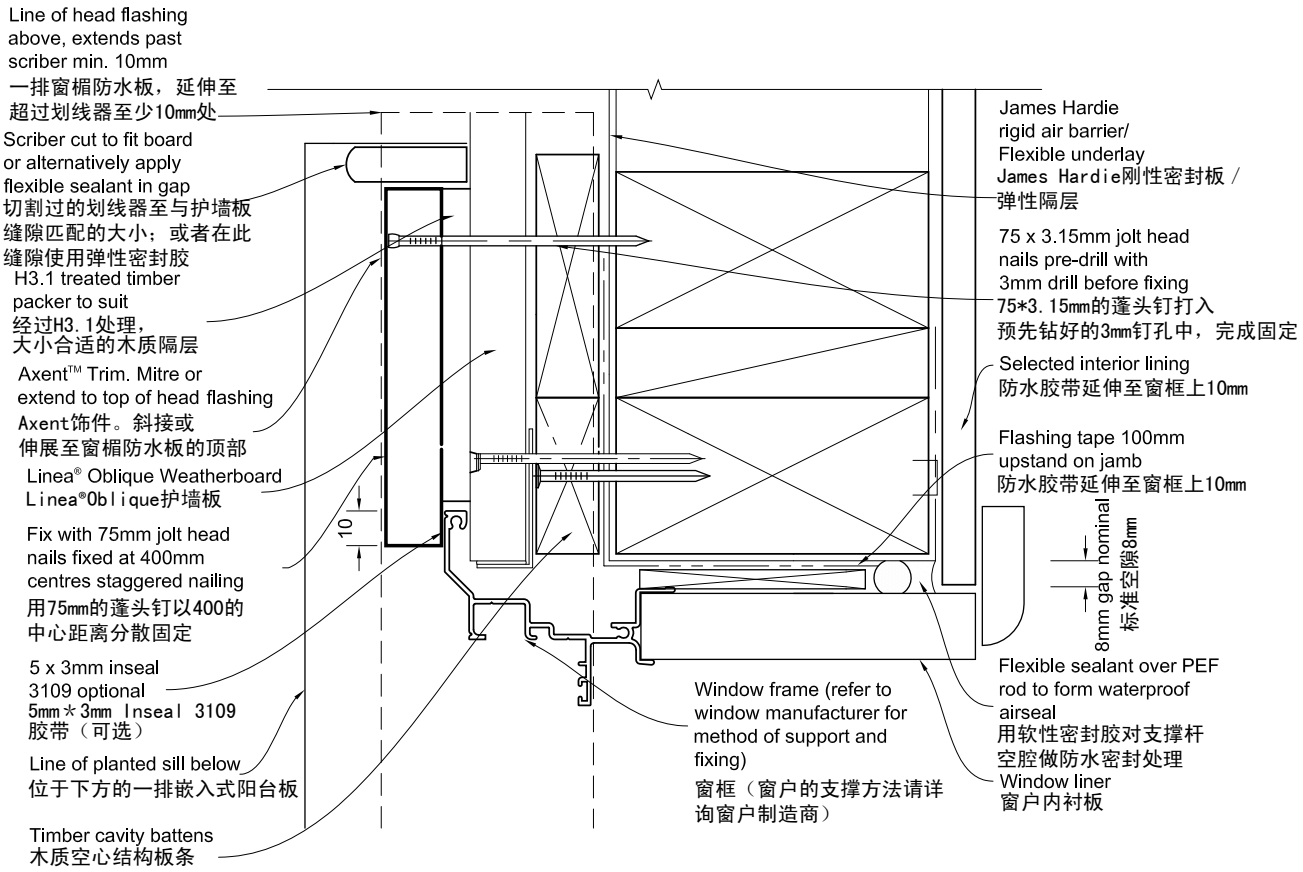


General notes for materials selection
关于材料选择的常规提示

1. Flashing materials must be selected based on environmental exposure, refer to NZS 3604 and Table 20 of NZBC E2/AS1.
   防水材料必须基于所处的环境来选择，详情请参阅NZS3604和NZBC条款E2/AS1，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.
   防水胶带必须能够与所选用的弹性隔层／James Hardie刚性隔板或其他与之直接接触的材料相互兼容。
4. When James Hardie rigid air barriers are used flashing tape to be applied to the entire opening.
   当使用James Hardie刚性密封板时，其所有暴露区域均需要使用防水胶带。

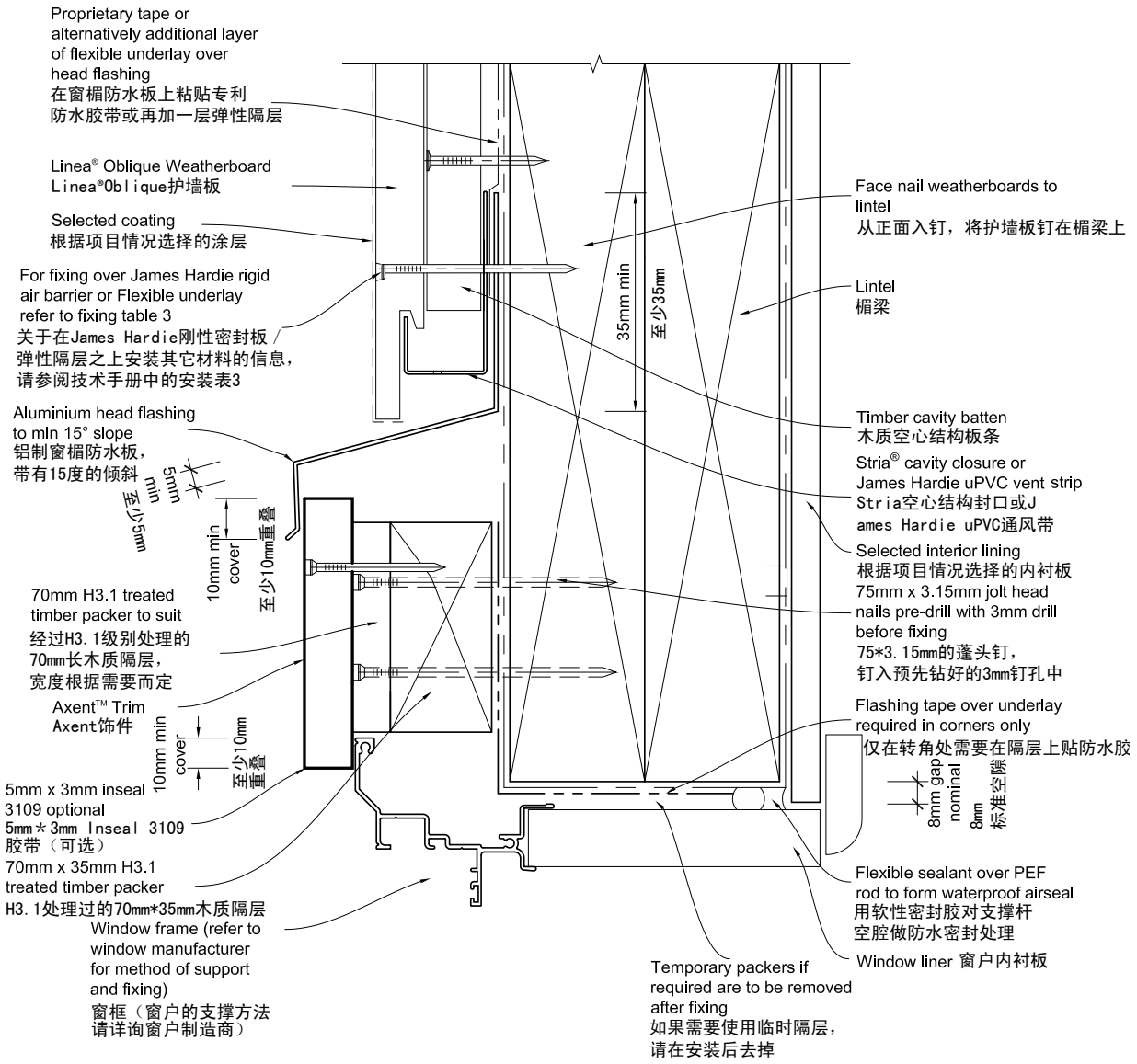
Refer to the manufacturer or supplier for technical information for these materials.
关于以上材料的技术信息，请参阅材料制造商或供应商所提供的资料

Figure 26: Window and door jamb with facings
图26: 带有饰面的门框和窗框



Note: 注意：
When James Hardie rigid air barrier is used flashing tape to be applied to the entire window opening.
如果使用James Hardie刚性密封板，必须在全窗开口区配合使用防水胶带。

Figure 27: Window and door head with facings
图27: 带有饰面的门头和窗户



Note: 注意：

- When James Hardie rigid air barrier is used flashing tape to be applied to the entire window opening.
  当使用James Hardie刚性密封板时，其所有暴露区域均需要使用防水胶带。
- Sealant must be installed between head flashing and and window flange VH and EH wind zones and SED pressures.
  在VH和EH风区或特殊设计项目中，必须在窗楣防水板和窗户凸出边缘之间使用密封胶。
- Alternatively, the head flashings can be formed with stop ends as per E2/AS1
  或者，可按照E2AS4的规定处理窗楣防水板的末端。

Figure 28: Over joist at floor level
图28: 位于房屋一层的地板龙骨

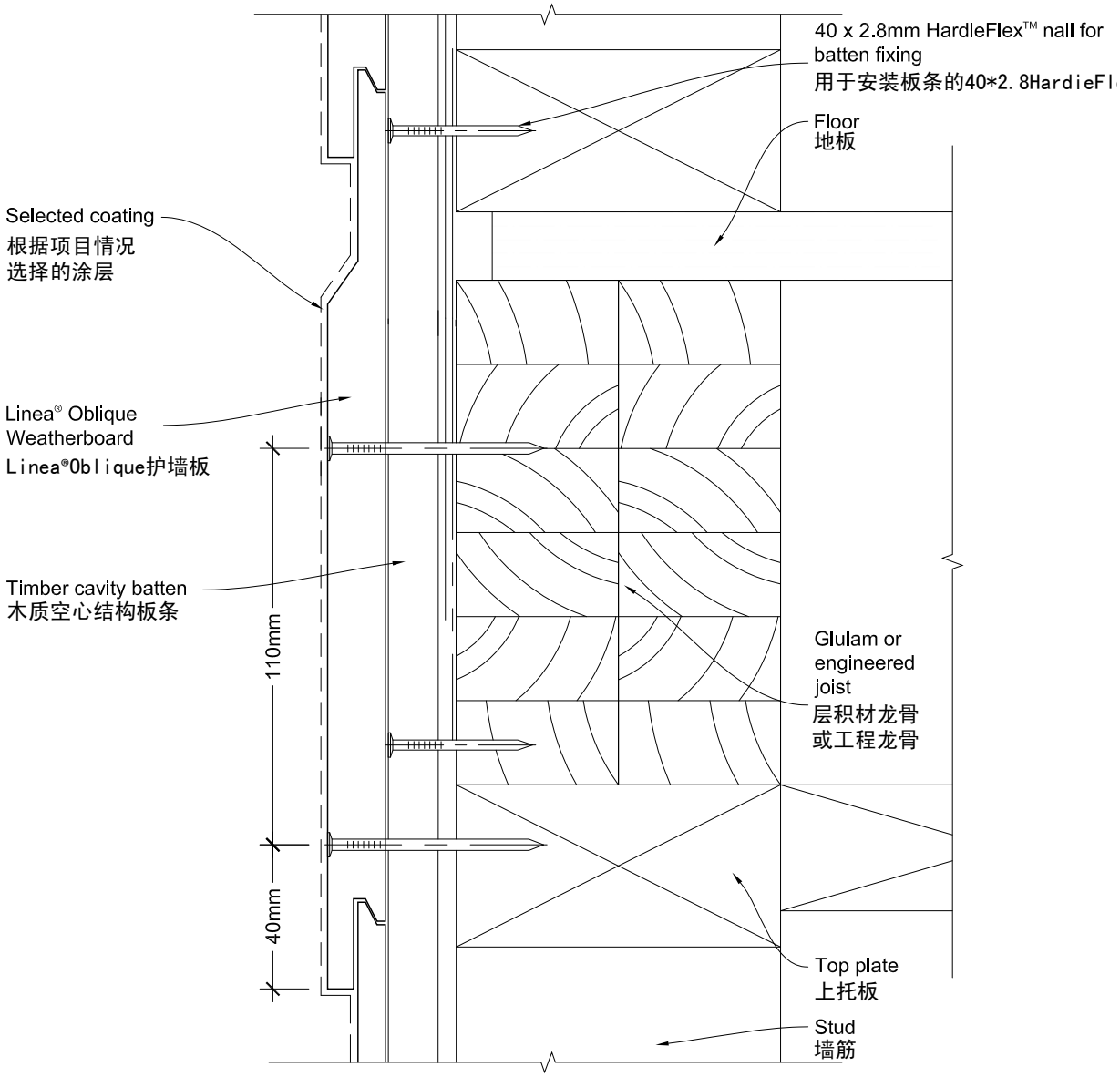
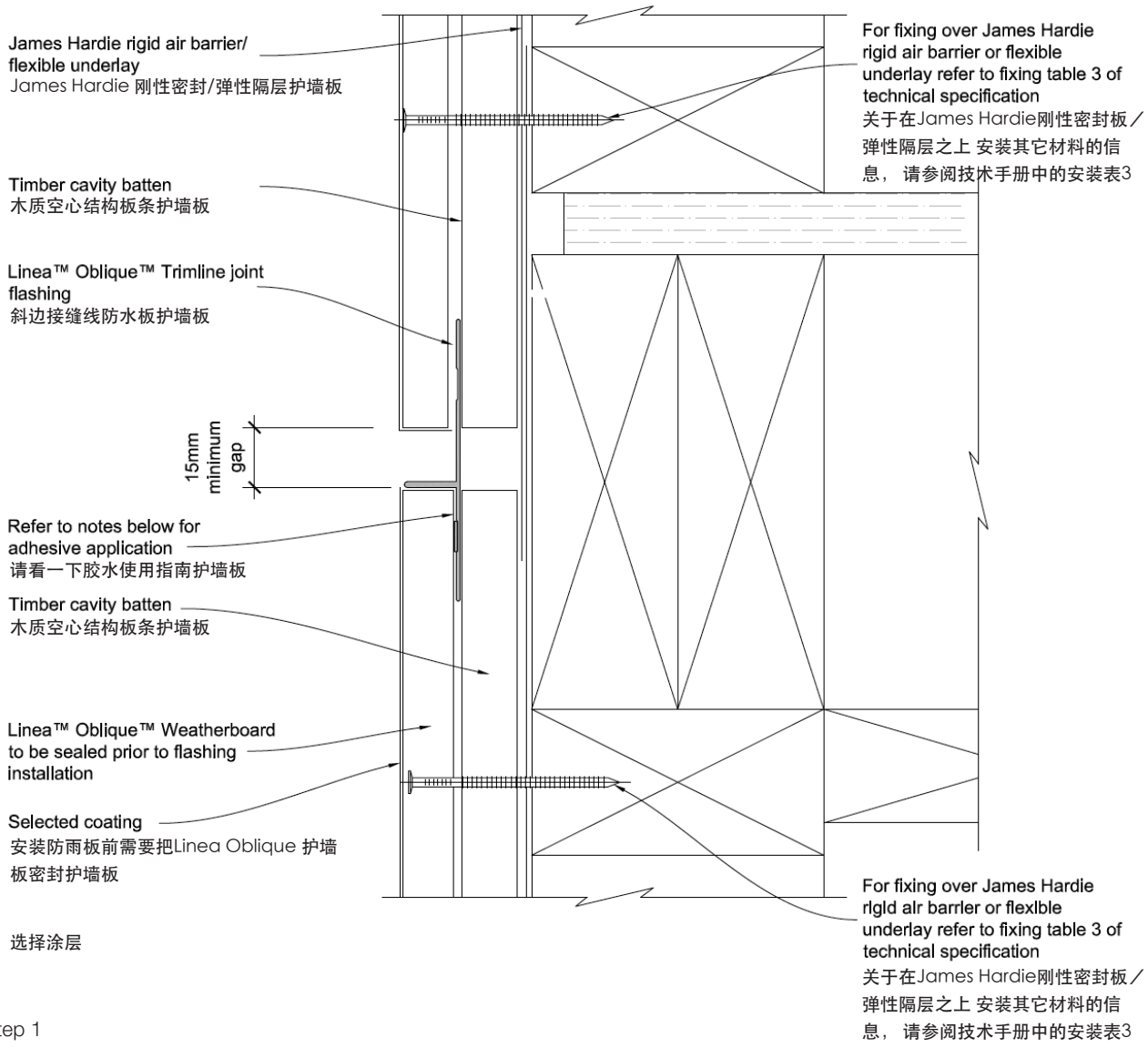


Figure 29: Trimline flashing joint at floor level
图29：房屋一层的接缝防水板的连接



Step 1
- Ensure flat James Hardie rigid air barrier/ flexible underlay is in place
步骤1：确保James Hardie 刚性密封/弹性隔层的衬底是在适当位置
Step 2
- James Hardie horizontal cavity batten to be installed over the studs and nogs. –Nylon strapping intermediate support to hold insulation in place between studs
步骤2：James Hardie水平腔板条安装在螺柱和木钉上。—尼龙捆扎中间支撑，用于在螺柱之间保持绝缘
Step 3 步骤3
- Install the lower weatherboards with aluminium trimline flashing 把铝制防水接缝线安装在较低的挡风板上
- Install the upper weatherboard keeping a 15mm gap 安装上部挡板，保持15毫米的间隙
Notes:
- The aluminium trimline flashing is installed prior to weatherboard. Apply two 6mm thick lines of adhesive sealant on the bottom portion of aluminium trimline flashing to seal. Take care to ensure continuous seal is formed between weatherboard and aluminium trimline flashing
- The adhesive sealant must continue between flashing flange and weatherboard edge
- Install purpose-made jointer 50mm over each end of trimline flashing and seal with flexible sealant to prevent water ingress
注意：- 在挡风板之前安装铝制防水接缝线。铝制防水接缝线的底部涂上两条6mm厚的粘合密封胶，防水密封。 注意确保挡风板和铝制防水接缝线之间形成连续密封
- 粘合密封剂必须在防水管道和挡风板边缘之间
- 防水连接线的每一端安装50mm的专用连接件，并用柔性密封剂密封，以防止水进入。

Figure 30: Drained flashing joint at floor level
图30: 位于龙骨处的排水防水板的连接

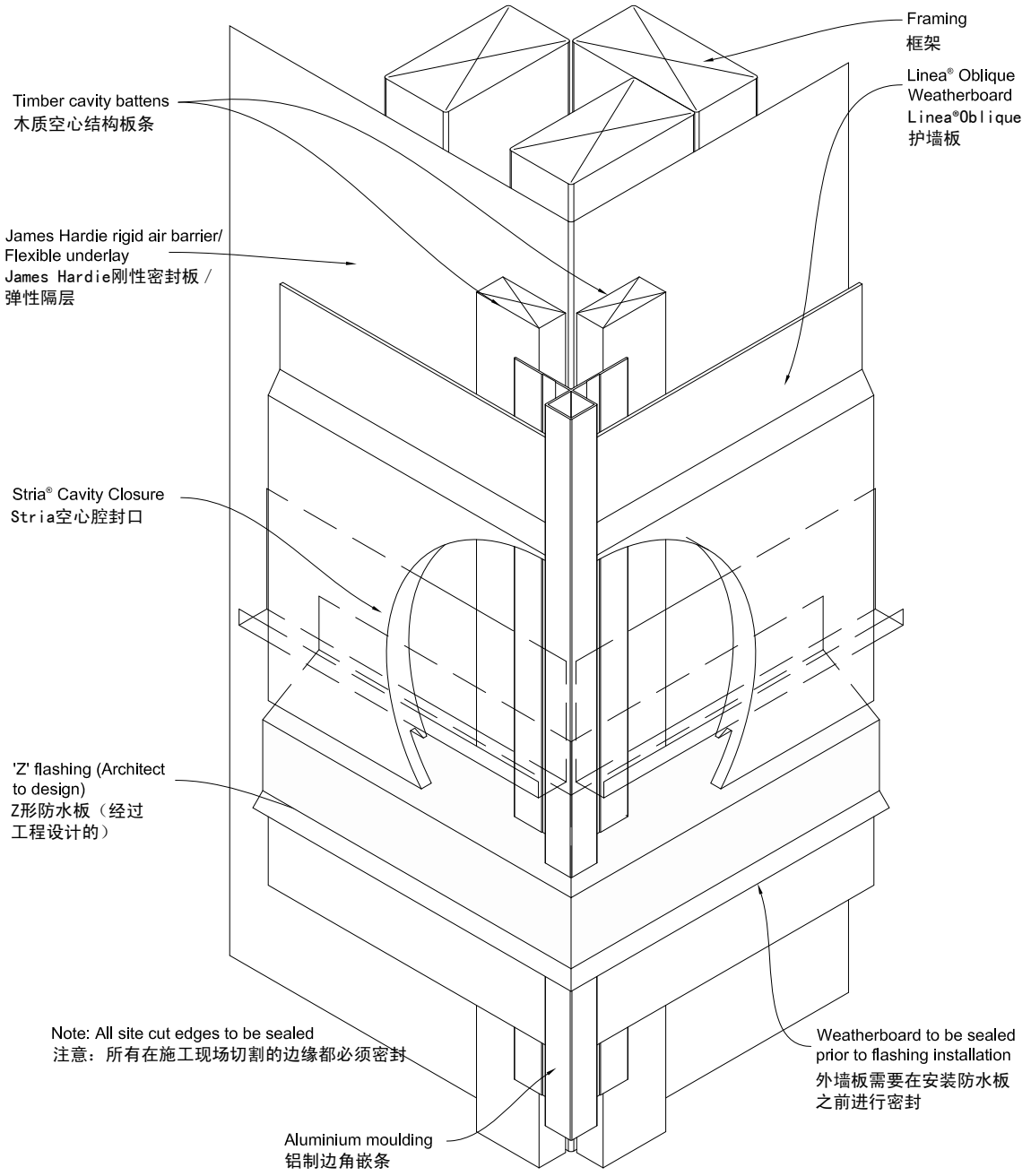


Figure 31: Trimline joint
图31: 接缝连接

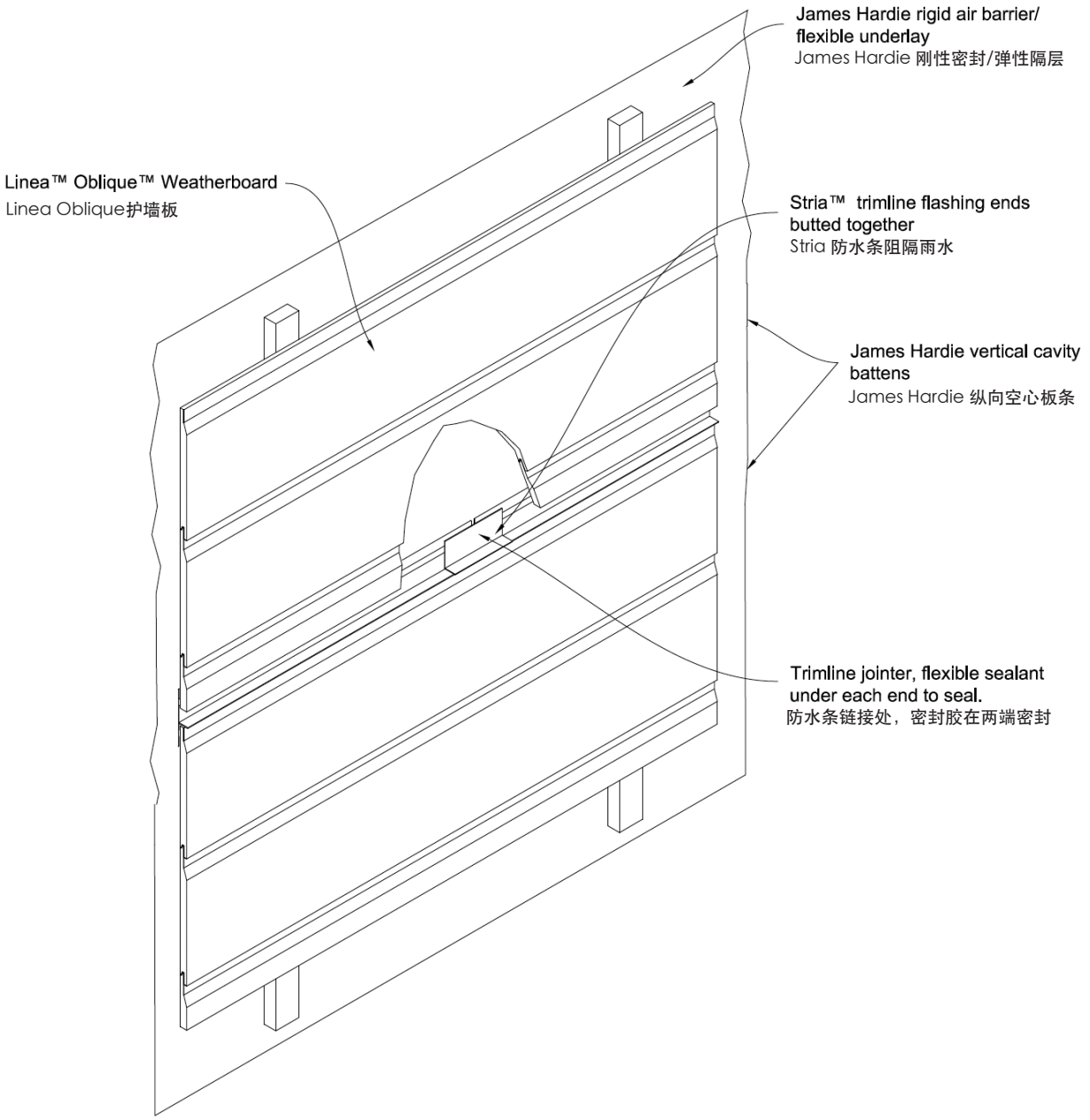
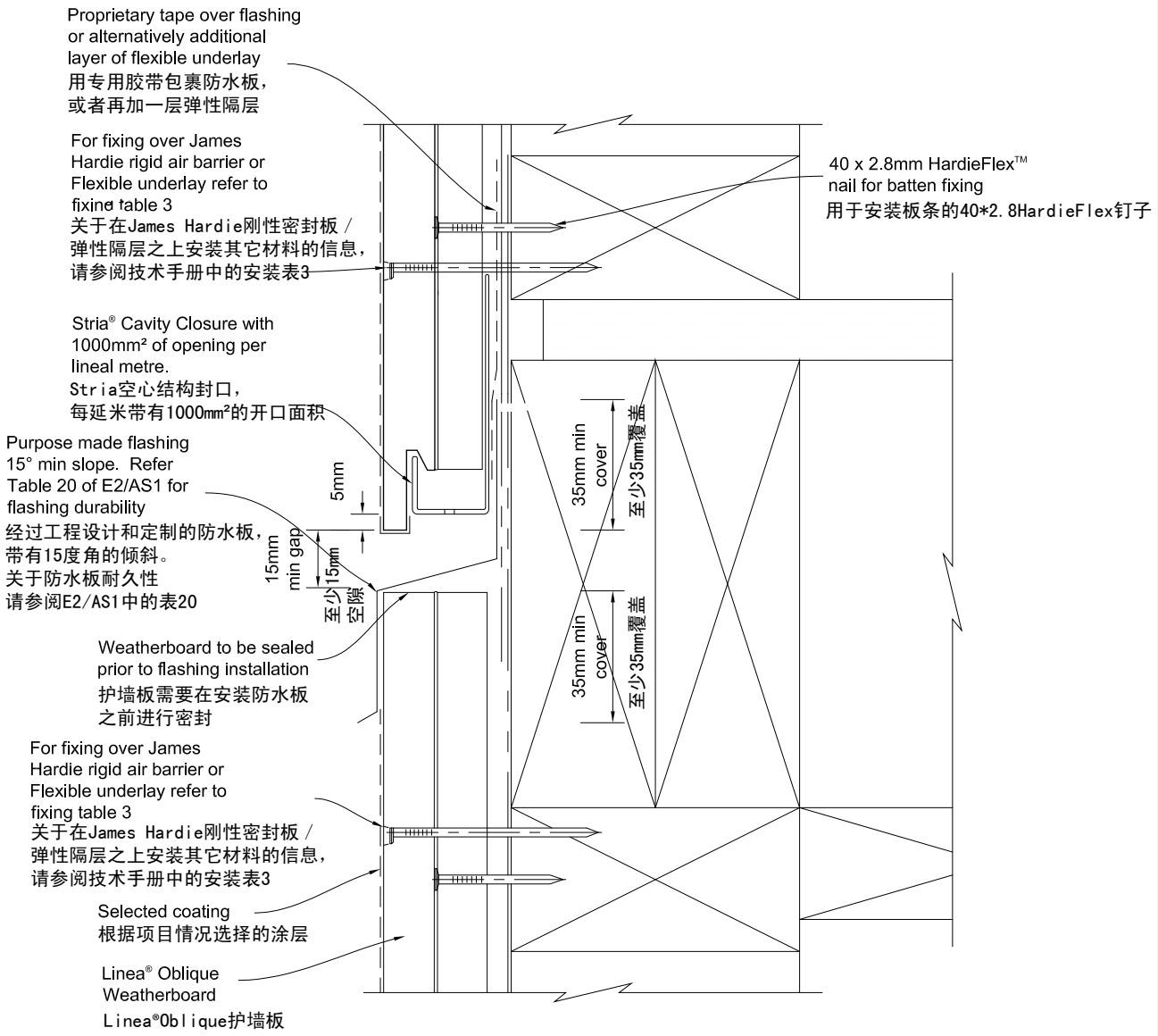


Figure 32: Drained flashing joint at floor level
图32: 房屋一层的排水防水板的连接



STEP 1 第一步

- Check architect's plans for the type of flashing to be used.
  查看工程师的设计，找到适当的防水板类型。

STEP 2 第二步

- Check fixing centres and edge distances.
  查看安装时应注意的中心距离和边缘距离。
- If top fixings are to be hidden by the Z flashing they will need to be fixed and sealed before the Z flashing is installed.
  如果顶部安装会被Z形防水板覆盖住，则应当先安装顶部，再安装Z形防水板。
- Cut edges need to be primed with Acraprime sealer or similar.
  切割过的切面需要用Acraprime密封胶或同类产品预先进行密封。

STEP 3 第三步

- When 50 year durability is required refer Table 20 E2/AS1.
  如果需要50年以上的耐久性，则必须参阅E2/AS1中的表20。

STEP 4 第四步

- The flashing to be placed in the centre of the floor joists. Do not fix James Hardie horizontal cavity batten or cladding into floor joists.
  防水板需要安装在地板龙骨的中央。不要将James Hardie空心结构水平板条或外墙板固定在地板龙骨上。

Figure 33: Apron flashing detail
图33: 烟囱防水详图

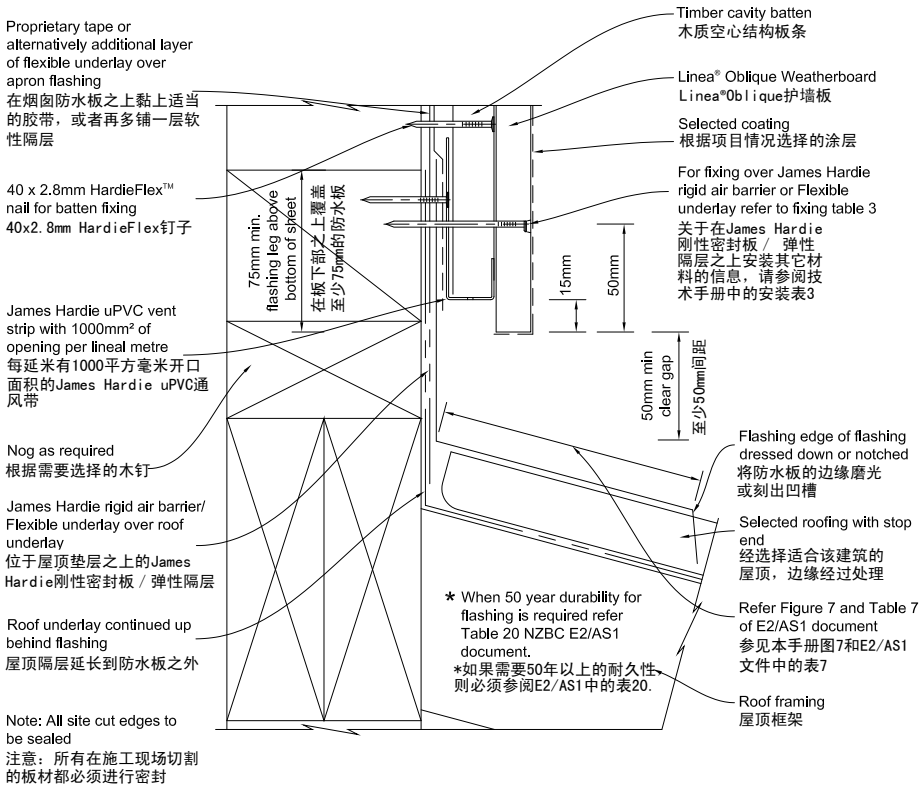


Figure 34: Parapet flashing
图34: 矮墙的防水

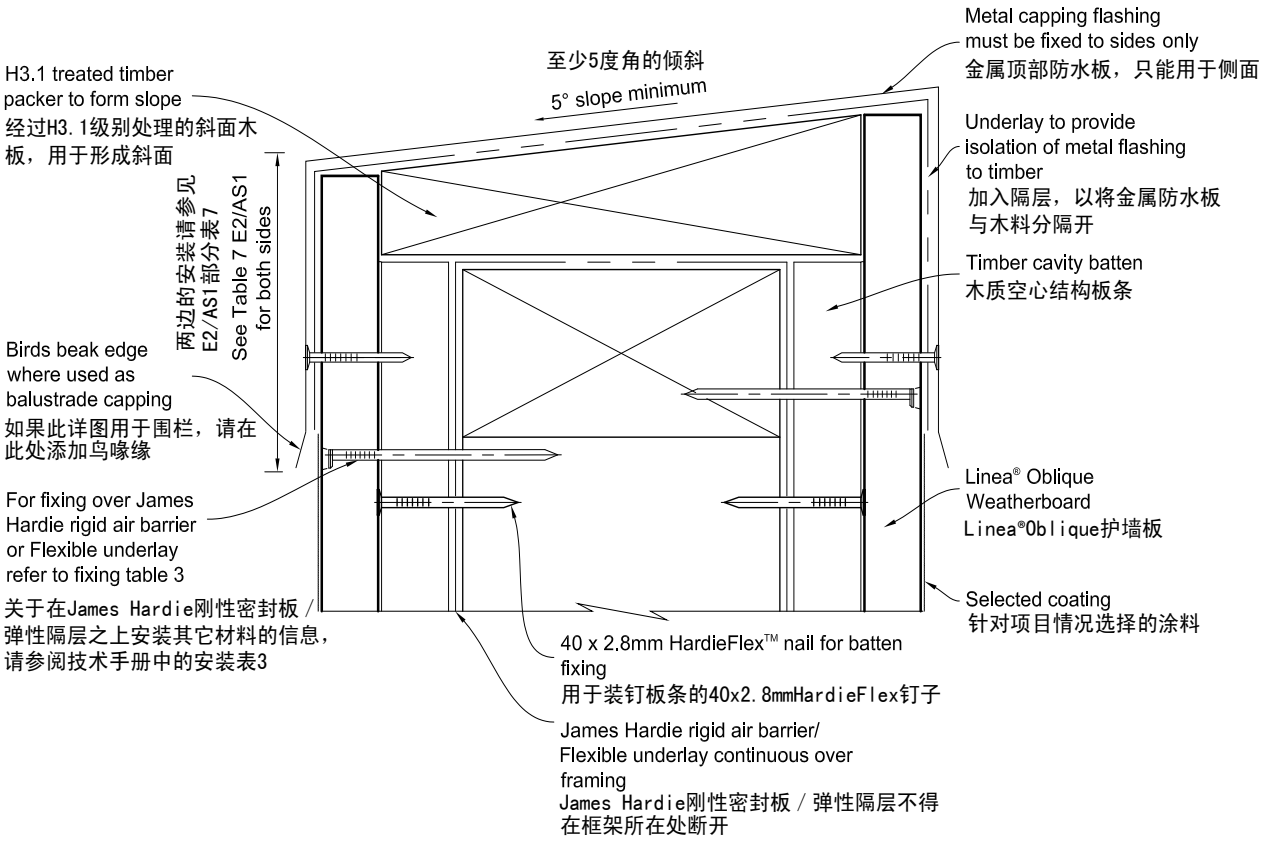


Figure 35: Roof to wall junction detail
图35: 屋顶与墙连接的详图

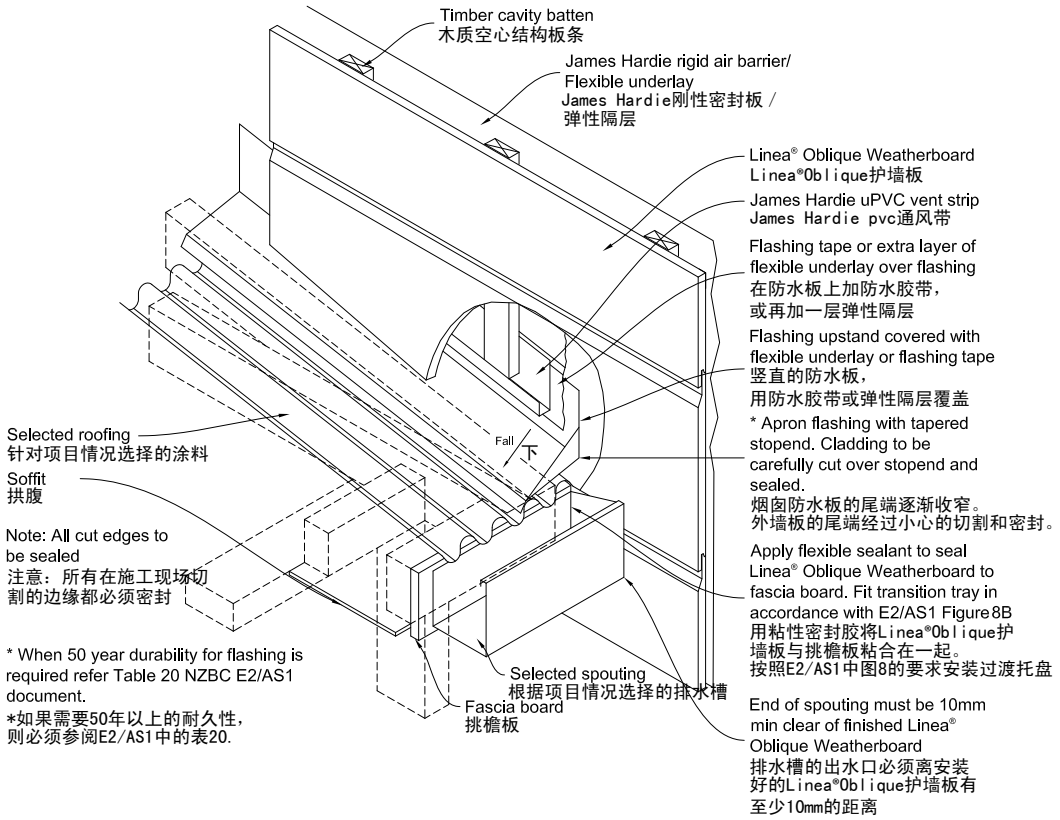


Figure 36 Meter box at sill
图36: 位于窗台的仪表箱

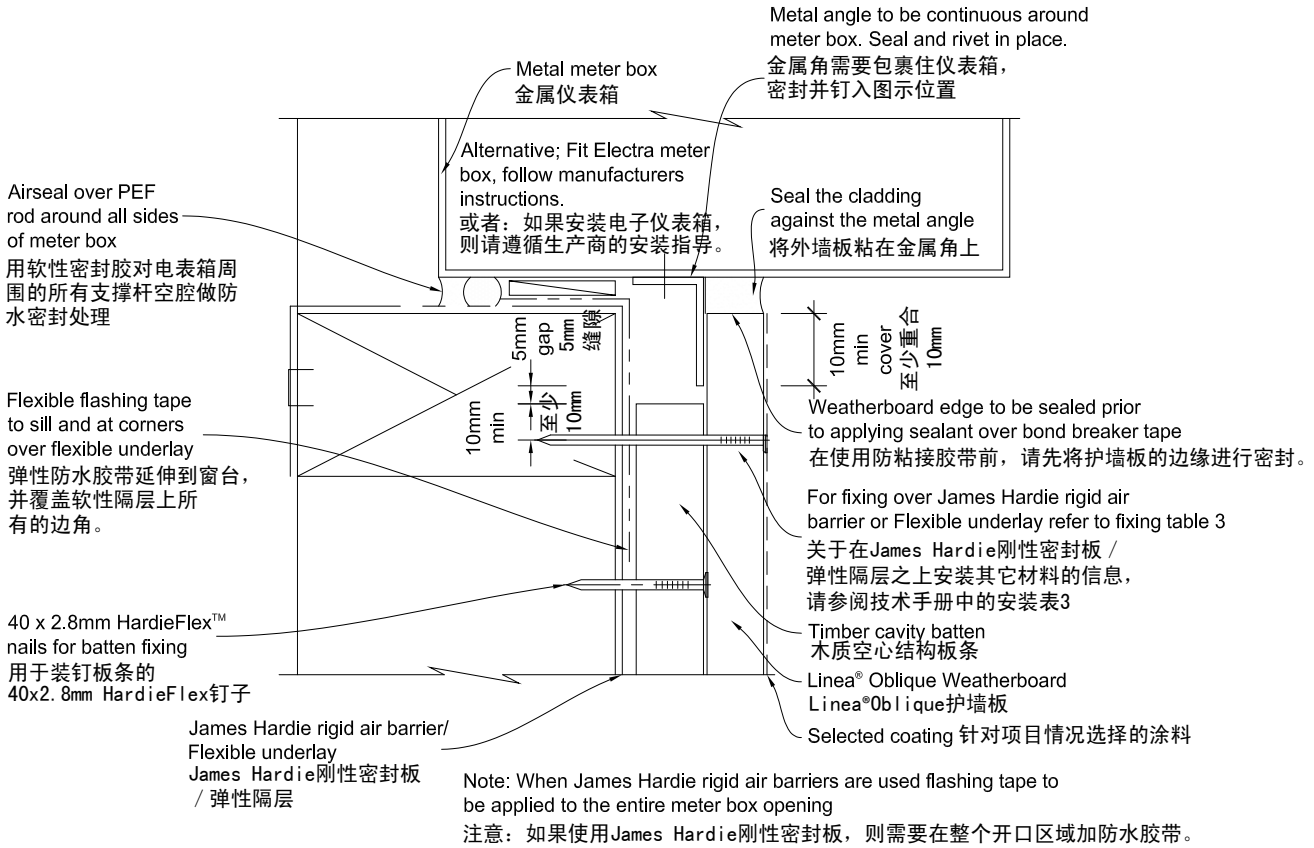


Figure 37: Meter box at jamb
图37: 位于窗框的仪表箱

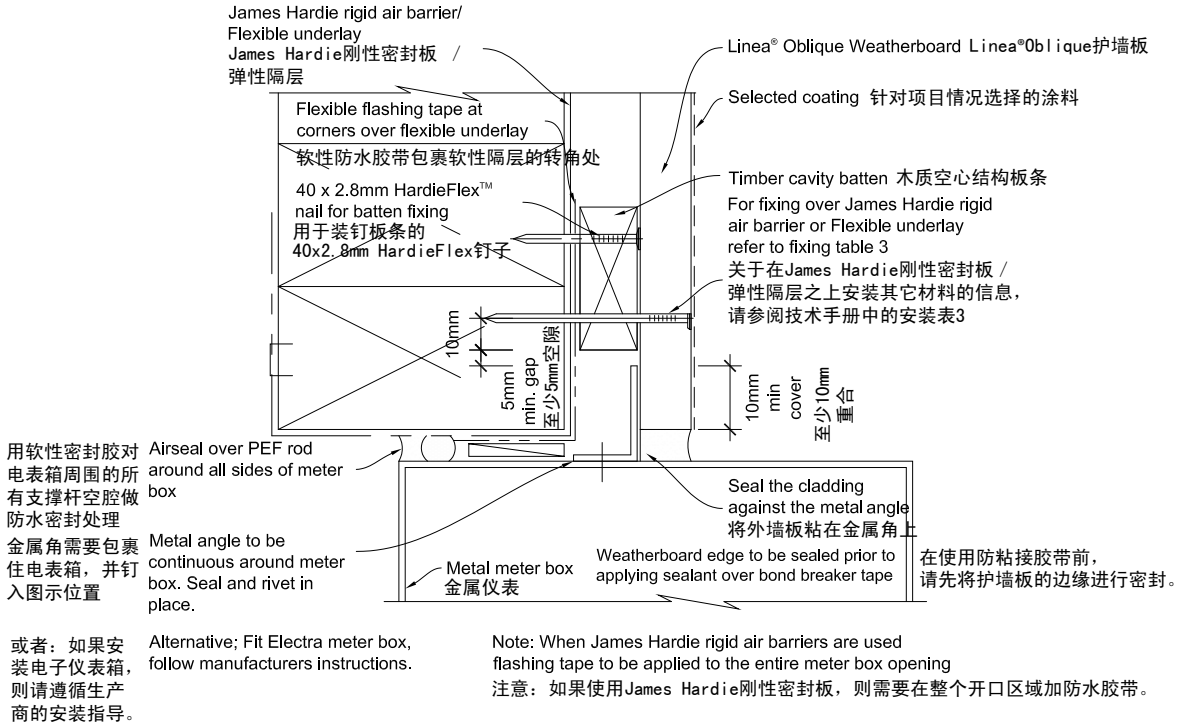
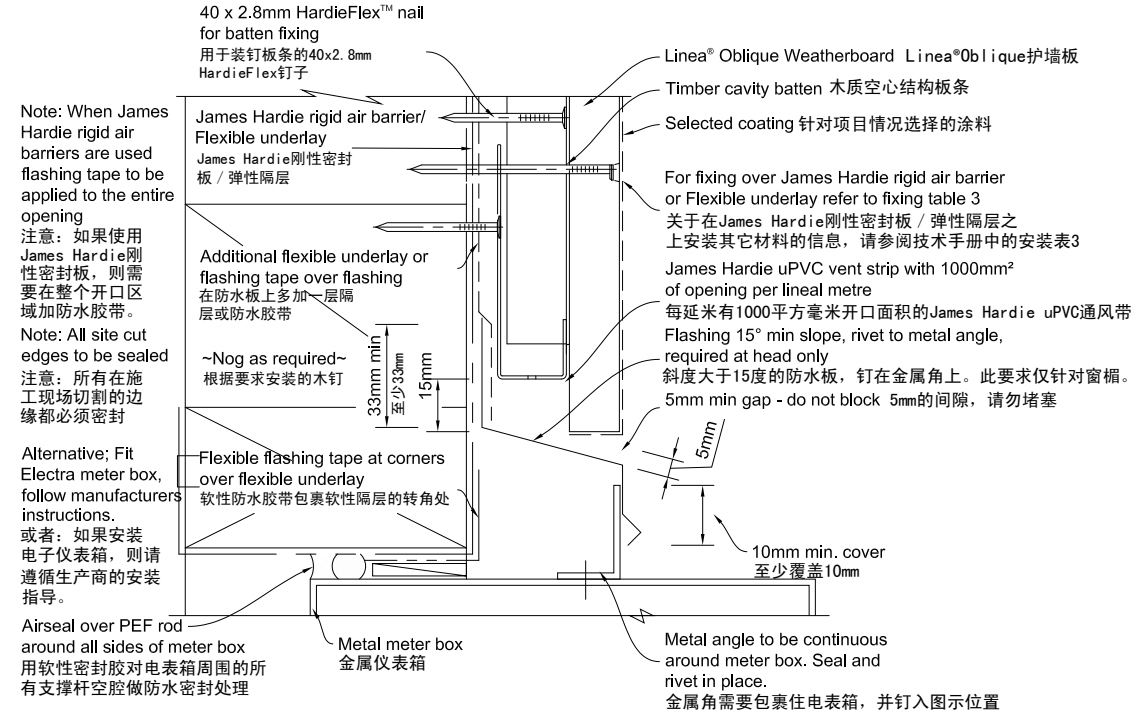


Figure 38: Meter box at head
图38: 位于窗楣的仪表箱



Note: 注意：

- When James Hardie rigid air barriers are used flashing tape to be applied to the entire opening.
  如果使用James Hardie刚性密封板，则需要在整个开口区域加防水胶带。
- Sealant must be installed between head flashing and flange in VH and EH wind zones and SED projects.
  在VH风区、EH风区及特殊设计项目中，窗楣防水板必须用密封胶与凸缘黏合在一起。
- Alternatively, the head flashings can be formed with stop ends as per E2/AS1
  或者，可按照E2AS4的规定处理窗楣防水板的末端。

Figure 39: Enclosed deck
图39: 封闭式露台

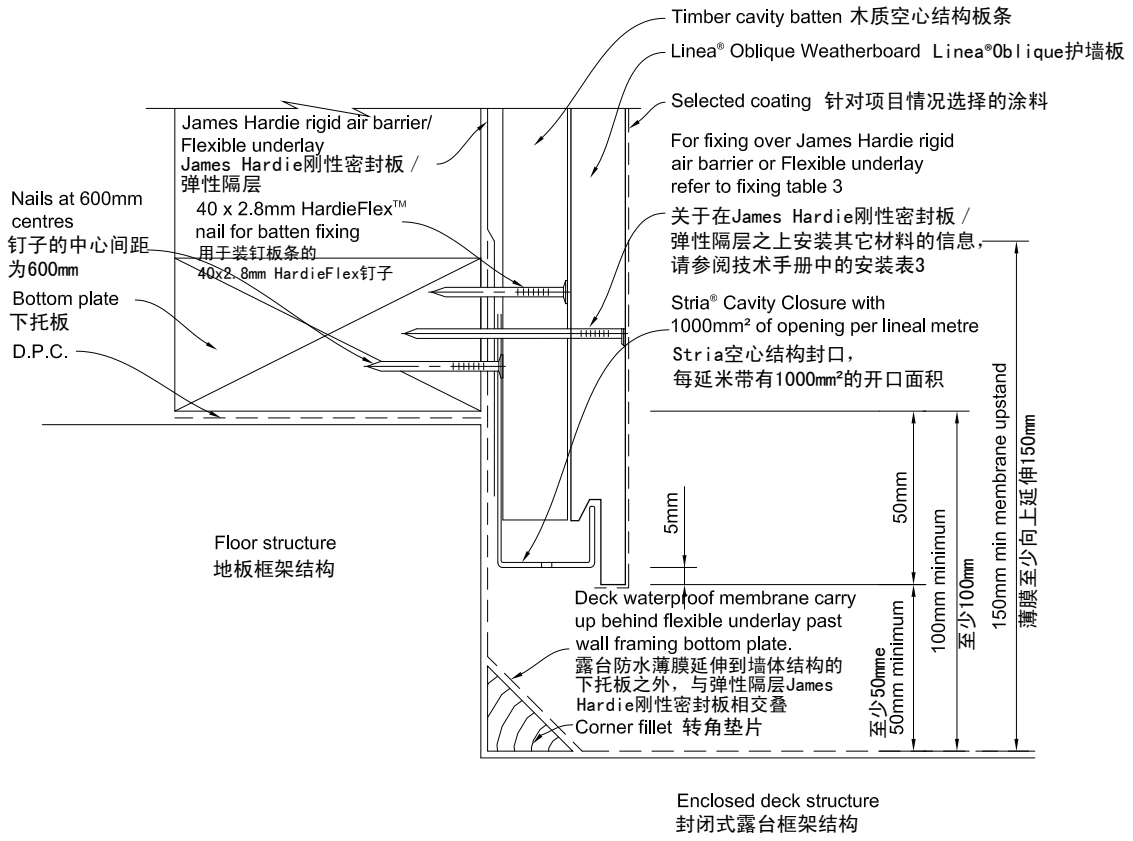


Figure 40: Pipe penetration
图40: 管道穿透墙体

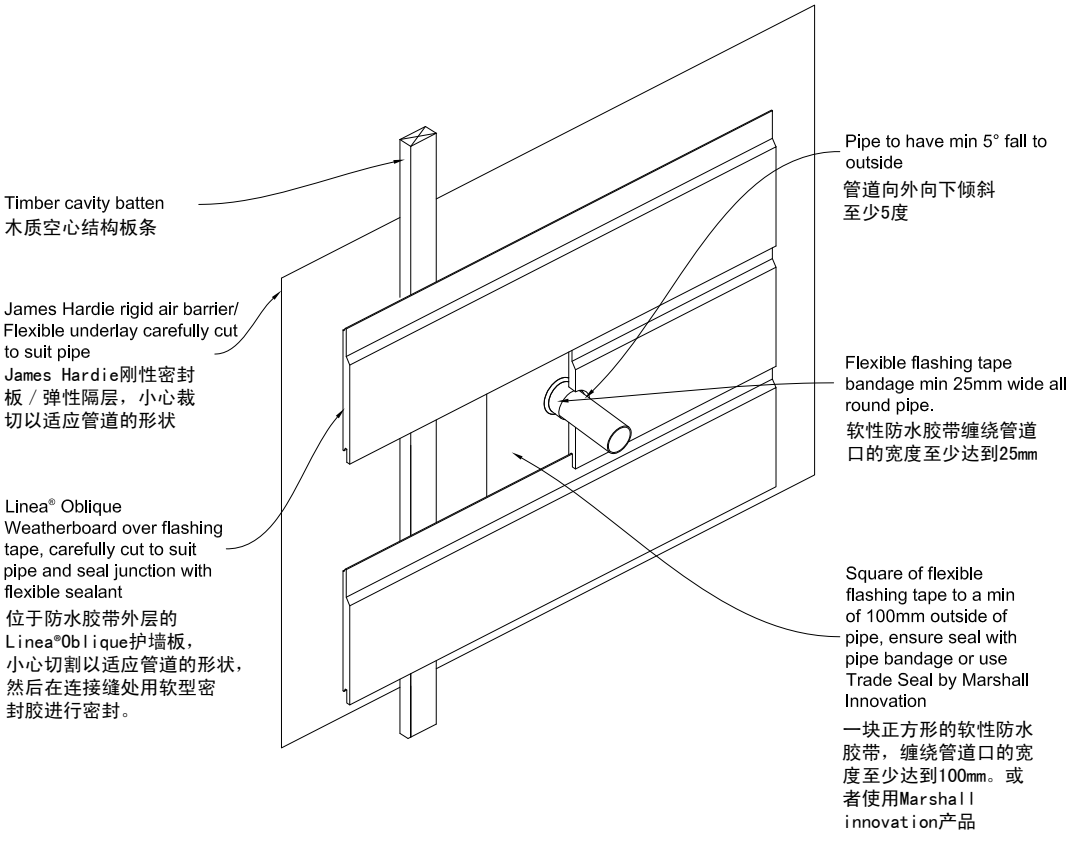


Figure 41: Garage head
图41: 车库头

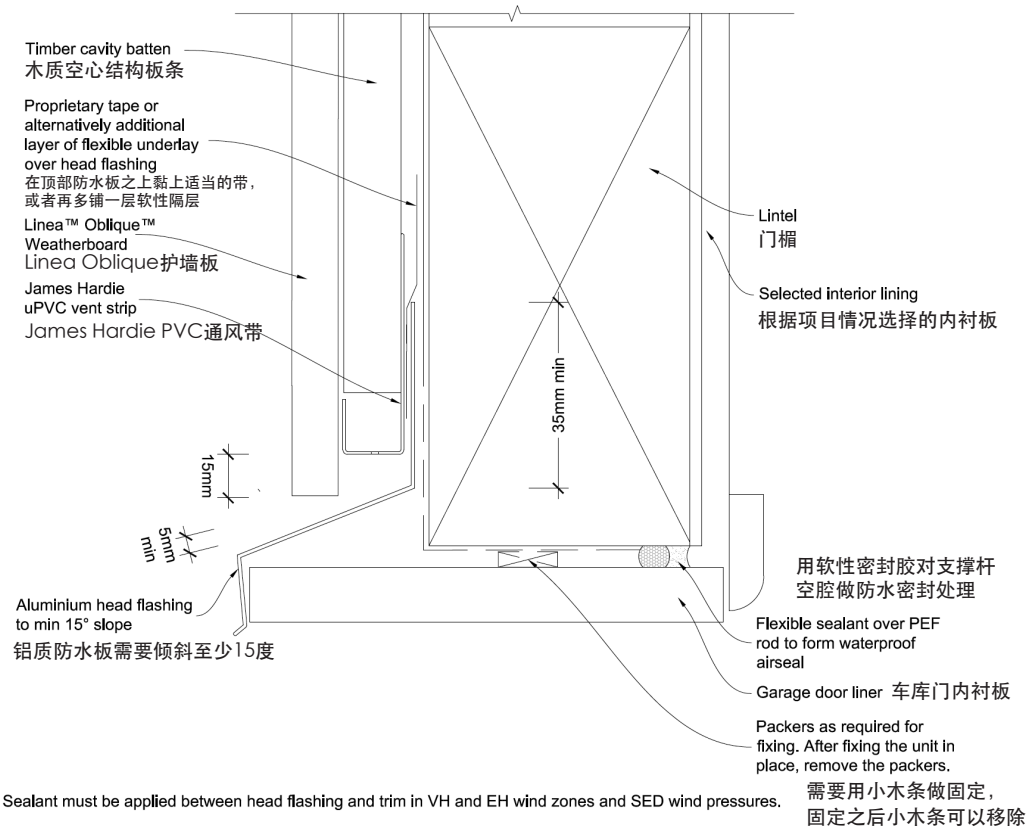
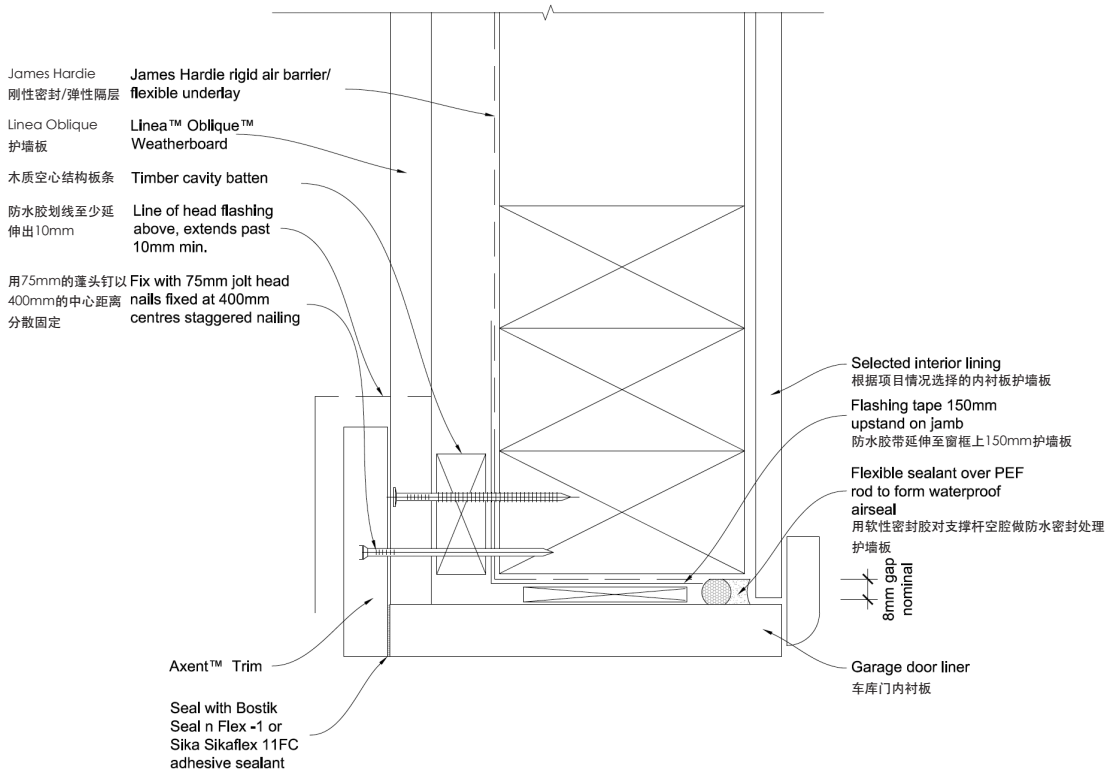


Figure 42: Garage jamb
图42: 车库门框



Notes **备忘录**

Notes **备忘录**

Product Warranty
产品质保

Linea™ Oblique™ WEATHERBOARD

James Hardie New Zealand Limited ("James Hardie") warrants for a period of 25 years from the date of purchase that the Linea Oblique™ Weatherboard on (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 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™ Oblique™ 护墙板（简称"产品"）在售出之日起的25年内，不会出现由于不合格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所售卖的配件在购买之日起的15年内不会出现由于不合格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;

a) 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;

b) 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;

c) 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 ("NZBC"), regulations and standards;

d) 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;

e) 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);

f) 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;

g) 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.

h) 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. Linea™ Oblique™ Weatherboard has been appraised by BRANZ as an alternative solution and found to meet the required provisions of the NZBC when installed in accordance with the Linea™ Oblique™ Weatherboard Horizontal Installation technical specification. 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.

免责声明：James Hardie 文件中的建议是基于良好的施工操作的前提下提出的，但并不能穷尽所有相关的信息，且受到上述 (C), (D), (F) 和 (G) 条款的限制。经过BRANZ的测试，按照 《Linea™ Oblique™ 护墙板纵向安装法技术规范》 安装的Linea Oblique护墙板， 符合NZBC制定的性能指标规定。然而，整个施工系统的成功有赖于很多 JAMES HARDIE无法控制的因素(如施工工艺和设计质量)。JAMES HARDIE将不对其文件中的建议及其在实际运用中的性能负责，包括产品是否适用于特定的使用目的，是否符合NZBC及其他相关规定和标准等。因为建筑设计师有责任判断James Hardie安装手册中提供的详图和建议是否适合该项目的需求，并确保在需要时提供特殊设计。

Copyright April 2019. © James Hardie New Zealand Limited. TM and ® denotes a Trademark or Registered Mark owned by James Hardie Technology Limited.

2019年4月 新西兰©James Hardie有限公司版权所有。™和®表示归James Hardie技术有限公司所有的商标 ／ 注册商标。

James Hardie

Ask James Hardie™ | Call 0800 808 868 | jameshardie.co.nz | cn.jameshardie.co.nz

问 James Hardie™ | 电话 0800 808 868 | 网站 jameshardie.co.nz | cn.jameshardie.co.nz

Copyright April 2019. © James Hardie New Zealand Limited. TM and ® denotes a Trademark or Registered Mark owned by James Hardie Technology Limited.

2019年4月 新西兰 © James Hardie 有限公司版权所有。TM /® 代表归James Hardie技术有限公司所有的商标 / 注册商标。