JamesHardie™

jameshardie.co.nz

HomeRAB™ Pre-Cladding

RAB™ Board

Installation Manual
安装手册

July 2021 New Zealand

2021年7月 新西兰



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



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Ask James Hardie™
邮箱：**literaturefeedback@jameshardie.co.nz**

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

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

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1 Introduction 产品介绍

James Hardie manufactures two pre-cladding products called HomeRAB™ Pre-Cladding and RAB™ Board.
James Hardie制造了两款预置垫层产品，分别是**HomeRAB™** 预置垫层和**RAB™** 板。

1.1 HomeRAB™ Pre-Cladding HomeRAB™ 预置垫层

HomeRAB™ Pre-Cladding is a 4.5mm thick fibre cement sheet which is sealed on the face and edges and is used as a rigid air barrier for residential buildings within the scope of the NZS 3604. HomeRAB Pre-Cladding is manufactured by James Hardie and complies with the requirements of AS/NZS 2908.2.

HomeRAB™ 预置垫层是4.5mm厚、表面和边缘处一体式密封的纤维水泥板。这种刚性密封板广泛适用于NZS 3604规范内的住宅建筑。HomeRAB预置垫层由James Hardie制造且符合AS/NZS 2908.2的要求。

It acts as temporary weather protection during construction, ideal for renovations or new construction. It is suitable for use as rigid underlay in residential buildings as per section 9.1.4 of E2/AS1 and complies with the requirements of Table 23 of E2/AS1. HomeRAB Pre-Cladding is suitable to withstand wind pressures experienced in all wind zones up to and including Very High (VH) wind zone as specified in the NZS 3604. HomeRAB Pre-Cladding doesn't get fatigued or tear under the wind pressures exerted on it in the long term. HomeRAB Pre-Cladding has been tested to withstand wind pressures up to VH wind zone.

HomeRAB预置垫层可以在建筑施工期间起到临时防风雨保护的作用，是翻新或修建新建筑时的理想之选。根据E2/AS1第9.1.4节的规定，其可充当住宅建筑的刚性垫层并符合E2/AS1中表23的要求。 HomeRAB预置垫层可承受所有风区的风压，包括适用于NZS 3604中定义的风压极高的区域(Very High，VH风区)。即使长期承受风压，HomeRAB预置垫层也能保持牢固，不会撕裂。HomeRAB预置垫层经过测试可承受高达VH风区的风压。

1.2 RAB™ Board 6mm RAB™ 板 6mm

RAB™ Board 6mm is a 6mm thick fibre cement sheet which is sealed on the face and edges and is suitable for use as a rigid air barrier in Extra High (EH) wind zones or in wind pressures up to 4.5kPa.

RAB™ 板6mm是一种厚6mm、表面和边缘一体式密封的纤维水泥板。其适合在超高风区（Extra High，EH风区）或风压高达4.5kpa的区域作为刚性密封板使用。

It complies with the requirements of Table 23 of E2/AS1.

该产品符合E2/AS1表23的要求。

It is suitable for use as rigid underlay as per the requirement of section 9.1.4 of E2/AS1. RAB Board 6mm is also suitable to withstand high wind pressures experienced on building facades where it creates a wind barrier which equalises pressure within the cavity to the external pressures. Flexible underlays can deteriorate caused by positive/negative pumping actions created by gusting winds within the cavity and on building facade.

根据E2/AS1第9.1.4节的要求，该产品适合用作刚性垫层。RAB板6mm也可用于承受建筑外墙上遇到的高风压，它可以在建筑外墙制造一个风障，使空腔内的压力与外部压力相等从而抵消风压。而一般弹性垫层可能会因墙壁空腔内与建筑物外墙上的强风产生的正/负压而破损。

Due to these pressures a flexible underlay may not perform as desired in the long term. RAB Board 6mm has been tested to withstand wind pressures up to 4.5kPa (ULS).

由于这些压力，一般弹性垫层无法长期达到预期效果。RAB板6mm经过测试，可承受高达4.5kPa（ULS）的风压。

1.3 RAB™ Board 9mm
RAB™ 板 9mm

RAB™ Board 9mm is a 9mm thick fibre cement sheet which is sealed on the face and edges and is suitable for use as a rigid air barrier in Extra High (EH) wind zones or in wind pressures up to 4.5kPa.

RAB™ 板9mm是一种9mm厚，表面和边缘处一体式密封的纤维水泥板，该产品适合在EH风区或高达4.5kpa的风压下用作刚性密封板。

RAB Board 9mm is suitable for specific design shear wall for residential or commercial applications where the structural design require strong/stiffer shear walls.

RAB板9mm适用于结构设计要求用到加强或加固剪力墙的住宅或商业建筑。

RAB Board 9mm is an ideal rigid backing substrate for use behind the façade cavities to improve the acoustic performance of the wall assembly. The continuity of RAB Board 9mm on the exterior of framing with its heavier mass cuts down the environmental noise, blocks noise flanking paths and therefore enhances the overall acoustic performance of building facades.

RAB板9mm是理想的刚性背衬基板，可用于墙壁立面空腔后方，以改善墙体组件的隔音效果。在墙体框架外部大面积使用RAB板9mm，可利用其厚重的特性有效减少环境噪音，阻止噪音通过侧翼路径，从而大幅度增强建筑外墙的整体隔音性。

It complies with the requirements of Table 23 of E2/AS1.

该产品符合E2/AS1表23的要求。

It is suitable for use as rigid underlay as per the requirement of section 9.1.4 of E2/AS1. RAB Board is also suitable to withstand high wind pressures experienced on building facades where it creates a wind barrier which equalises pressure within the cavity to the external pressures. Flexible underlays can deteriorate caused by positive/negative pumping actions created by gusting winds within the cavity and on building facade.

根据E2/AS1第9.1.4节的要求，该产品适合用作刚性垫层。RAB板9mm也适用于承受建筑外墙上遇到的高风压，它可以在建筑外墙制造一个风障，使空腔内的压力与外部压力相等从而抵消风压。 而一般弹性垫层可能会因墙壁空腔内与建筑物外墙上的强风产生的正/负压而破损。

Due to these pressures a flexible underlay may not perform as desired in the long term. RAB Board 9mm is suitable for use for wind pressures up to 4.5kPa (ULS).

由于这些压力，一般弹性垫层无法长期达到预期效果。RAB板9mm经过测试，可承受高达4.5kPa（ULS）的风压。

1.4 HomeRAB™ Pre-Cladding and RAB™ Board
HomeRAB™ 预置垫层和RAB™ 板

The products provide the following benefits:
HomeRAB™ 预置垫层和RAB™ 板的优势包括：

- Resistant to moisture damage and rotting when installed correctly
  正确安装后耐腐蚀、耐得住潮湿带来的损害
- Integral sealer applied on the face and edges repels moisture rapidly and helps resist moisture penetration
  表面和边缘一体式密封可以迅速排散水分，并有助于抵抗水分渗透
- Provides temporary weathertightness to the building envelope until the final claddings are installed
  在外墙安装完成前，为建筑物的围护结构提供临时的防风防雨保护
- Provides general rigidity to the entire structure
  为整个建筑结构提供整体刚性
- An efficient way to achieve structural bracing
  一种高效实现结构支撑的方法

This manual covers the use of HomeRAB Pre-Cladding and RAB Board in external wall pre-cladding applications only. Further information relating to HomeRAB Pre-Cladding and RAB Board is also available in the following James Hardie design manuals:

本手册仅涵盖HomeRAB预置垫层和RAB板作为外墙预置垫层的使用说明。有关HomeRAB预置垫层和RAB板的更多信息，请参阅以下James Hardie设计手册:

- Fire and Acoustic Design Manual
  耐火隔音设计手册
- Bracing Design Manual
  支撑设计手册

The Specifier or other responsible party for the project must ensure that the information in this manual is appropriate for the intended application and that specific design and detailing is undertaken for areas which are not covered in this manual.

项目监管者或者项目其他责任方必须确保手册中的信息适合项目应用，并针对本手册中未涵盖的区域做出特殊设计及详图。

HomeRAB Pre-Cladding and RAB Board have a Codemark certificate that demonstrates the compliance with New Zealand Building Code (NZBC).

HomeRAB预置垫层和RAB板拥有CodeMark认证，符合新西兰建筑标准（NZBC）。

Refer to CodeMark Certificate GM-CM30130 for more information.

如需了解详情，请查看CodeMark证书GM-CM30130。

CODEMARK™
30130

HomeRAB Pre-Cladding and RAB Board have been BRANZ appraised. This should be read in conjunction with this installation manual. BRANZ Appraisal No. 611 can be viewed on www.jameshardie.co.nz or www.branz.co.nz. CodeMark certificate can be viewed under the Product Register on MBIE web site https://www.building.govt.nz/building-code-compliance/product-assurance-and-multiproof/codemark/product-certificate-register/

HomeRAB预置垫层和RAB板经过BRANZ评估，该评估应与本安装手册一起阅读。BRANZ认证编号611可以在www.jameshardie.co.nz或www.branz.co.nz查看。CodeMark认证可以在MBIE网站的"注册产品"下查看https://www.building.govt.nz/building-code-compliance/product-assurance-and-multiproof/codemark/product-certificate-register/

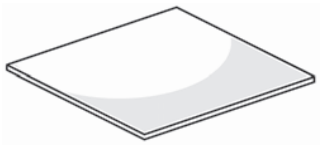
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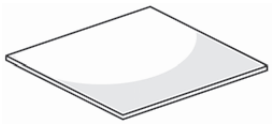
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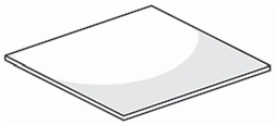
When specifying or installing James Hardie products, ensure you have the current manual. If you're not sure you do, or you need more information, visit www.jameshardie.co.nz or Ask James Hardie on 0800 808 868.

在选定或安装James Hardie产品时，请确保您拥有最新的手册。如果您不确定手册是否是最新版本，或者您需要了解更多信息，请访问www.jameshardie.co.nz 或致电Ask James Hardie 0800 808 868。

Table 1 表1

HomeRAB Pre-Cladding | HomeRAB预置垫层				
Product Information 产品信息	**Description 产品描述**	**Sheet Sizes 板材尺寸**		
	A fibre cement sheet with a green water repellent sealer applied on the face and edges. Installed with green side facing out. Approximate mass: 6.5 kg/m² 一种纤维水泥板，在表面和边缘涂有绿色防水密封剂。安装时，请将绿色的一面朝外。 大约质量：6.5kg/m²	**Thickness 厚度: 4.5mm**		
		Length 长度 (mm)	**Width 宽度(mm)**	**Code 产品编码**
		2450	1200	**404766**
		2750	1200	**404768**

RAB Board 6mm | RAB板6mm				
Product Information 产品信息	**Description 产品描述**	**Sheet Sizes 板材尺寸**		
	A fibre cement sheet with a green water repellent sealer applied on the face and edges. Installed with green side facing out. Approximate mass: 8.6 kg/m² 一种纤维水泥板，在表面和边缘涂有绿色防水密封剂。 安装时，请将绿色的一面朝外。 大约质量：8.6kg/m²	**Thickness 厚度: 6mm**		
		Length 长度(mm)	**Width 宽度(mm)**	**Code 产品编码**
		2450	1200	**402980**
		2750	1200	**405131**
		3000	1200	**402981**

RAB Board 9mm | RAB板9mm				
Product Information 产品信息	**Description 产品描述**	**Sheet Sizes 板材尺寸**		
	A fibre cement sheet with a green water repellent sealer applied on the face and edges. Installed with green side facing out. Approximate mass: 12.2 kg/m² 一种纤维水泥板，在表面和边缘涂有绿色防水密封剂。 安装时，请将绿色的一面朝外。 大约质量: 12.2 kg/m²	**Thickness 厚度: 9mm**		
		Length 长度(mm)	**Width 宽度(mm)**	**Code 产品编码**
		2450	1200	**405132**
		2750	1200	**404972**
		3000	1200	**404971**

Note: All dimensions and masses provided are approximate only and are subject to manufacturing tolerances. Masses are based on Equilibrium Moisture Content (EMC) of product.
注意：所有尺寸和质量仅为近似值，并受制造公差的限制。 质量基于产品的平衡水分含量（EMC）。

Table 2 表2

Accessories/tools supplied by James Hardie | James Hardie提供的附件/工具			
	**HomeRAB 4.5 Horizontal Flashing** **HomeRAB 4.5mm横向防水板** 3000mm long for horizontal joints 3000mm长，用于横向连接 **CODE编码:** 305798		**Hardie™ Blade Saw Blade** **Hardie™ Blade 锯片** 184mm diameter, Poly diamond blade for fast, clean cutting of James Hardie fibre cement. 直径184mm，聚晶金刚石锯片，用于快速、干净地切割James Hardie纤维水泥板。 **CODE编码: 300660**
	**RAB 6mm Horizontal Flashing** **RAB 6mm横向防水板** 3000mm long for horizontal joints 3000mm长，用于横向连接 **CODE编码:** 305152		**Hardie™ Knife** **Hardie™ Knife切刀** For easy cutting of fibre cement sheets. 用于切割纤维水泥板。 **CODE编码:** 305926
	**RAB 9mm Horizontal Flashing** **RAB 9mm横向防水板** 3000mm long for horizontal joints 3000mm长，用于横向连接 **CODE编码:** 305945		

Table 3 表3

Components not supplied by James Hardie | 非James Hardie提供的部件

James Hardie recommends the following products for use in conjunction with its HomeRAB Pre-Cladding and RAB Board products. James Hardie does not manufacture 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建议将以下产品与HomeRAB预置垫层和RAB板结合使用。James Hardie不生产这些产品，也不为其使用提供质保。 请联系组件制造商，以便了解其保修及其他相关信息。

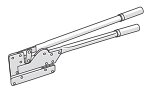
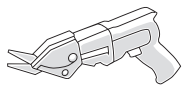
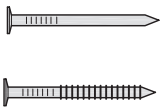
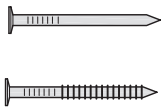
	**Hand guillotine** **手动闸刀** Guillotine for cutting fibre cement. 用来切割纤维水泥板的闸刀		**Sealing tape/window flashing tape** **密封胶带/封窗防水胶带** Tape used to seal vertical joints and flash around window, door and pipe penetrations. 胶带用于密封纵向连接处，对门窗做防水处理，修补管道穿口。 Thermakraft™ Premium Joining Tape, Thermaflash Self Adhesive Window Flashing tape - Thermakraft™ Ltd 0800 806 595 Thermakraft™ 高级连接胶带、Thermoflash自粘窗防水胶带-Thermakraft™ Ltd 出品，联系电话： 0800 806 595 SUPER-STICK Building Tape® - Marshall Innovations 0800 776 9727 SUPER-STICK建筑胶带 ® - Marshall Innovations出品，联系电话： 0800 776 9727 3M™ All Weather Flashing Tape 8067 - 3M™ 0800 474 787 3M™ 全天候防水胶带8067 - 3M™ 出品，联系电话：0800 474 787
	**Electric shear/fibreshear** **电力剪/纤维剪**		
	**Fibre cement nails** **纤维水泥钉** 40 x 2.8mm hot dipped galvanised Hardie™ Flex nails as per Table 5. 40 x 2.8mm Hardie™ Flex热浸镀锌钉 详见表5 40 x 2.8mm stainless steel Hardie™ Flex nails as per Table 5. 40 x 2.8mm Hardie™ Flex不锈钢钉 详见表5		**General installation - Nail gun and nails** **一般安装 - 钉枪和钉子** Galvanised/stainless steel round head gun nails minimum length required for specific application. 镀锌/不锈钢圆头枪钉，在特定情况下，需要注意钉子的最小长度。
	**Fibre cement nails** **纤维水泥钉** 50 x 2.8mm hot dipped galvanised Hardie™ Flex nails as per Table 5. 50 x 2.8mm Hardie™ Flex热浸镀锌钉 详见表5 50 x 2.8mm stainless steel Hardie™ Flex nails as per Table 5. 50 x 2.8mm Hardie™ Flex不锈钢钉 详见表5		**Bracing installation - Nail gun and nails** **支撑安装 - 钉枪和钉子** Galvanised/stainless steel round head gun nail minimum length required for specific application. Refer to Section 4.3. 镀锌/不锈钢圆头枪钉，在特定情况下，需要注意钉子的最小长度。 请参阅第4.3节
	**Tusk 160mm diameter blade** **Tusk** **直径160mm锯片** Blade for fast, clean cutting of Hardie™ fibre cement 用于快速、干净地切割Hardie™ 纤维水泥板。		**Penetration Seals** **穿口密封** OneSeal Multi-Fit by Thermakraft: 0800 806 595 OneSeal 多用途密封贴 - Thermakraft出品，联系电话:0800 806 595 Trade-Seal by Marshall Innovations: 0800 776 9727 Trade-Seal - Marshall Innovations出品，联系电话：0800 776 9727

Figure 1: HomeRAB Pre-Cladding™/RAB Board™ with Linea™ Weatherboard

图1：HomeRAB™ 预置垫层/RAB™ 板与Linea™ 护墙板

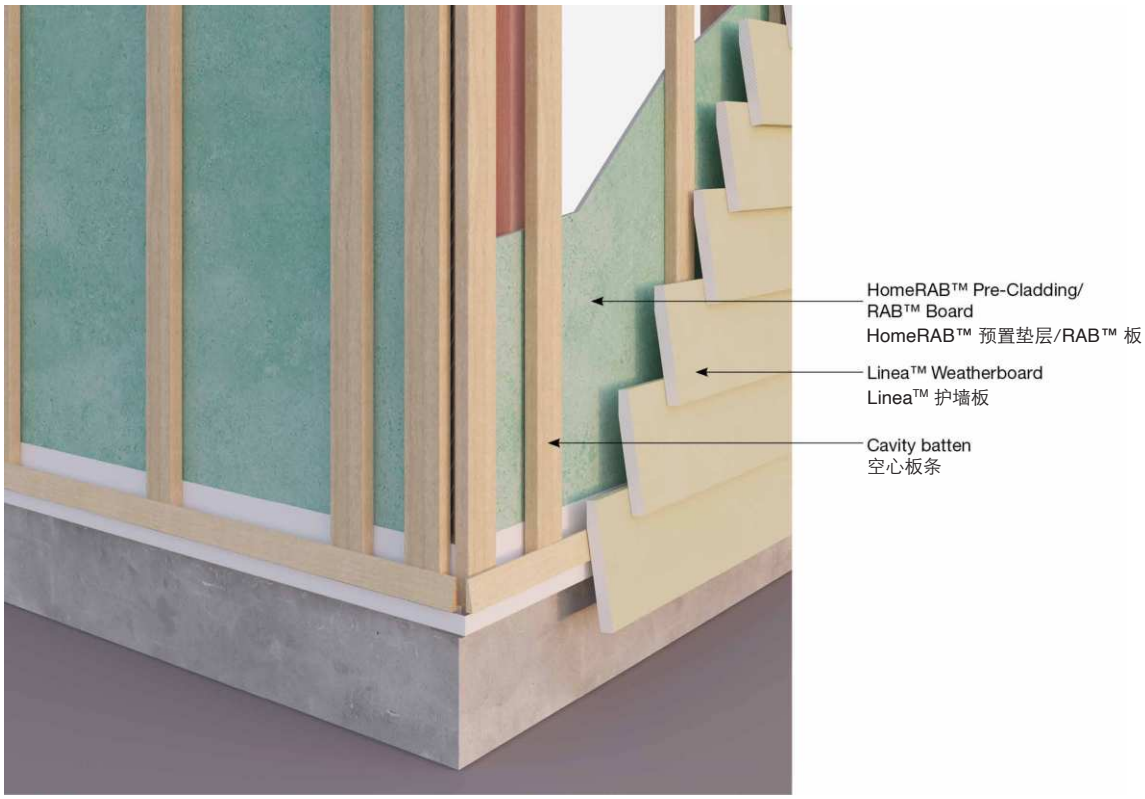
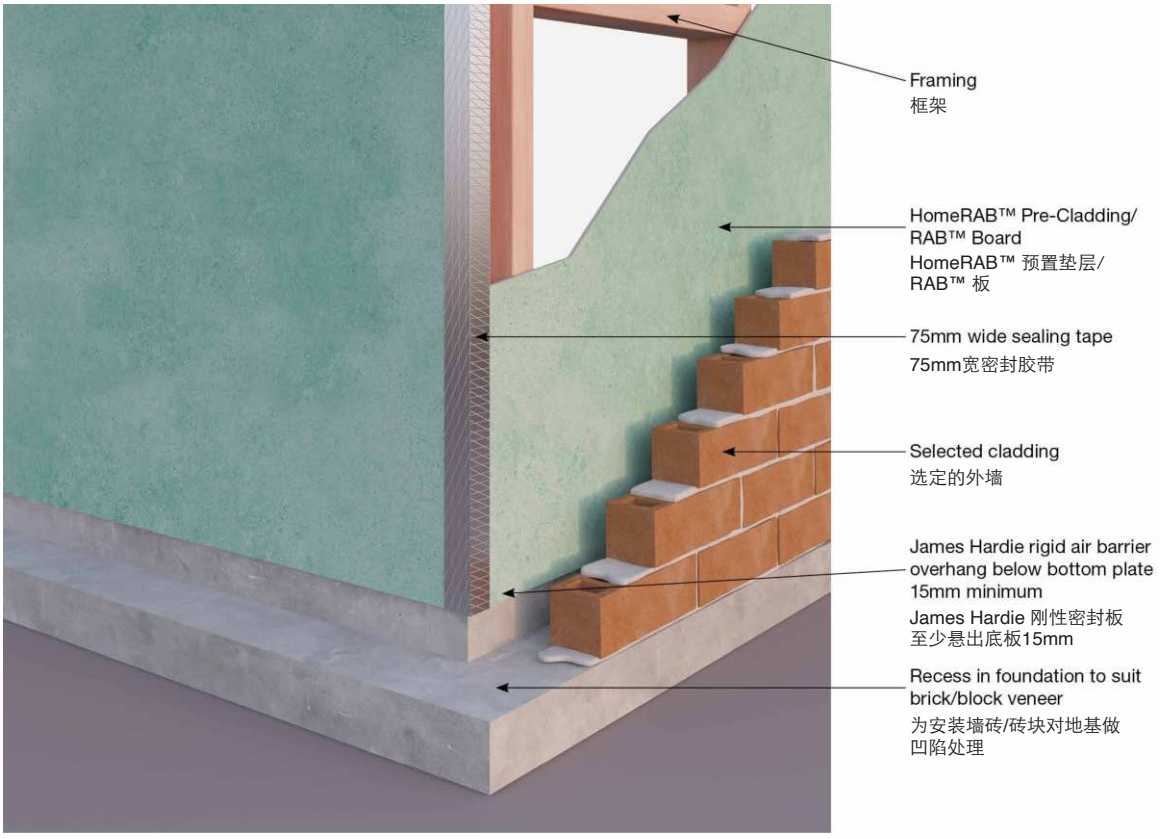


Figure 2: HomeRAB Pre-Cladding™/RAB Board™ with brick/block cladding

图 2：HomeRAB™ 预置垫层/RAB™ 板与砖头/砖块外墙



2 Safe Working Practices
安全施工守则

WARNING - DO NOT BREATHE DUST AND CUT ONLY IN WELL VENTILATED AREA
警告 – 切勿吸入粉尘，请仅在通风良好的环境下进行切割。

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

Hardie™ 纤维水泥产品中含有沙子，是可吸入结晶二氧化硅的来源。如吸入产品中的粉尘，可能会导致癌症，长期反复吸入产品中的粉尘，会对肺及呼吸系统造成损害。

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

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

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

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

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

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

FAILURE TO ADHERE TO OUR WARNINGS, SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.
未能遵守我们的警告，安全数据表和安装说明可能会导致严重的人身伤害或死亡。

Crystalline Silica is
结晶二氧化硅是

- Commonly known as sand or quartz

  俗称沙子或石英。
- Found in many building products e.g. concrete, bricks, grout, wallboard, ceramic tiles, and all fibre cement materials

  存在于众多建筑产品中，例如混凝土，砖，水泥浆，墙板，瓷砖和所有纤维水泥材料。

Why is Crystalline Silica a health hazard?
为什么结晶二氧化硅会危害健康?

- Silica can be breathed deep into the lungs when present in the air as a very fine (respirable) dust
  二氧化硅以极细（可呼吸）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
  在切割，钻孔，打磨或清理含有结晶二氧化硅的产品时，如不遵守控制粉尘的安全守则，会危害健康
- Products containing silica are harmless if intact (e.g. an un-cut sheet of wall board)
  含硅的产品在完整的情况下是无害的（比如，未切割的墙板）

Avoid breathing in crystalline silica dust
避免吸入结晶二氧化硅粉尘

Safe working practices
安全施工守则

- ✕ NEVER use a power saw indoors or in a poorly ventilated area
  切勿在室内或通风不佳的区域使用电锯
- ✕ NEVER dry sweep
  切勿干扫
- ✓ ALWAYS use M Class or higher vacuum or damp down dust before sweeping up
  始终使用M级或更高级别的吸尘器，或在清扫之前沾湿粉尘
- ✕ NEVER use grinders
  切勿使用研磨机
- ✓ ALWAYS use a dust reducing circular saw equipped with a sawblade specifically designed to minimise dust creation when cutting fibre cement – preferably a sawblade that carries the Hardie™ Blade 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Hardie™ Blade商标的锯片或者至少具有同等功能 – 并与M级或更高级别的吸尘器相连接
- ✓ Before cutting warn others in the area to avoid dust
  在切割之前，警示他人离开周围区域
- ✓ 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

Use one of the following methods for cutting HomeRAB Pre-Cladding and RAB Board 6mm
请使用以下方法切割HomeRAB预置垫层和RAB板6mm

Best 最佳方法

- Hardie™ Knife
  Hardie™ Knife切刀
- Hand guillotine
  手动铡刀
- Fibreshear
  纤维水泥剪

Better 次优方法

Dust reducing circular saw equipped with Hardie™ Blade Saw Blade and connected to a M Class or higher vacuum.
带有Hardie™ Blade锯片的降尘圆锯，并与M级或更高级别的吸尘器相连接。

When cutting outdoors
在室外切割时

✓ Make sure you work in a well ventilated area
确保您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，便于风将粉尘吹离您和工作区域内的其他人

✓ Rotate employees across cutting task over duration of shift
安排工作人员轮换进行切割任务

✓ Cut products with a Hardie™ Blade Saw Blade (or equivalent) and a dust reducing circular saw connected to a M Class or higher vacuum
使用Hardie™ Blade锯片（或具有同等功能的锯片）切割产品，采用降尘圆锯连接M级或更高级别的吸尘器

✓ When sawing, sanding, rebating, drilling or machining fibre cement products, always:
在锯切，砂磨，打磨，钻孔或加工纤维水泥产品时，请始终：
- Wear your P1 or higher (correctly fitted in accordance with manufacturers' instructions), ask others to do the same.
  佩戴P1或更高级别的防护面罩（根据制造商指导正确佩戴），并要求他人也这样做
- Keep persons on site at least 2 metres and as far as practicable away from the cutting station while the saw is in operation
  让施工现场的人在锯切过程中尽可能远离切割工作台或至少保持2米距离
- If you are not clean shaven, then use a powered air respirator with a loose fitting head top
  如果您留有胡子，请佩戴带有宽松头戴式面罩的电动送风呼吸器
- Wear safety glasses
  佩戴安全镜
- Wear hearing protection
  佩戴护耳器

✓ Make sure you clean up BUT never dry sweep. Always hose down with water/wet wipe or use an M Class or higher vacuum
确保清洁，但切勿干扫。始终用水管冲洗或用湿抹布清洁，又或使用M级或更高级别的吸尘器

When cutting indoors
在室外切割时

✗ Never cut using a circular saw indoors
切勿在室内使用圆锯

✓ Position cutting station in a well ventilated area
将切割工作台放置在通风良好的位置

✓ Cut ONLY using a Hardie™ Knife, hand guillotine or fibreshears (manual, electric or pneumatic)
仅使用Hardie™ Knife切刀、手动铡刀或（手动、电动或气动的）纤维水泥剪进行切割

✓ 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

Use the following method for cutting RAB Board 9mm
在切割RAB板9mm时，应选用如下切割工具

Dust reducing circular saw equipped with Hardie™ Blade Saw Blade and M Class or higher vacuum.
带有Hardie™ Blade锯片的降尘圆锯，并与M级或更高级别的吸尘器相连接。

When cutting 切割时

✓ Work outdoors only
仅在室外作业

✓ 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 Hardie™ Blade Saw Blade (or equivalent) and a dust reducing circular saw connected to a M Class or higher vacuum
使用Hardie™ Blade锯片（或具有同等功能的锯片）切割产品，采用降尘圆锯连接M级或更高级别的吸尘器

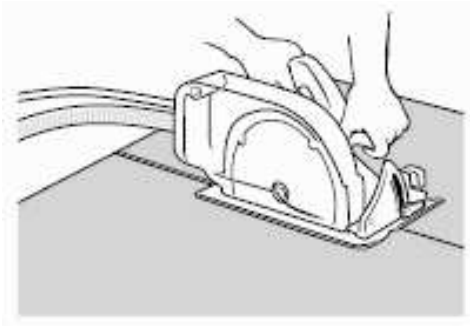
✓ When sawing, sanding, rebating, drilling or machining fibre cement products, always:
在锯切，砂磨，打磨，钻孔或加工纤维水泥产品时，请始终：

- Wear your P1 or higher (correctly fitted in accordance with manufacturers' instructions), ask others to do the same.
  佩戴P1或更高级别的防护面罩（根据制造商指导正确佩戴），并要求他人也这样做
- Keep persons on site at least 2 metres and as far as practicable away from the cutting station while the saw is in operation.
  让施工现场的人在锯切过程中尽可能远离切割工作台或至少保持2米距离
- If you are not clean shaven, then use a powered air respirator with a loose fitting head top
  如果您留有胡子，请佩戴带有宽松头戴式面罩的电动送风呼吸器
- Wear safety glasses
  佩戴安全镜
- Wear hearing protection
  佩戴护耳器
- When others are close by, ask them to do the same
  如有他人在旁，要求他们也这样做

✓ 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



Hardie™ Blade Saw Blade
Hardie™ Blade锯片

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

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

Hole forming 成孔



For smooth clean cut circular holes:
形成平滑整齐的圆孔：

- Mark the centre of the hole on the sheet
  在板上标记孔的中心
- Pre-drill a 'pilot' hole
  预钻一个孔
- Using the pilot hole as a guide, cut the hole to the appropriate diameter with a hole saw fitted to a heavy duty electric drill
  在该预钻孔的基础上，使用配在重型电钻上的孔钻，钻出所需直径的孔

For irregular holes:
不规则孔:

- 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

2.1 Storage and Delivery 储存和运输

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

Off loading 卸货

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

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

Storage 储存

Hardie™ fibre cement products should be stored:
Hardie™ 纤维水泥产品的储存一定要：

✓ In their original packaging
储存至原包装

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

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

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

Hardie™ fibre cement products must not be stored:
Hardie™ 纤维水泥产品储存一定不要：

✗ Directly on the ground
直接放置在地上

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

James Hardie is not responsible for damage due to improper storage and handling.
因储存和搬运不当导致的产品损坏不在James Hardie的责任范围内。

2.2 Tips For Safe and Easy Handling of HomeRAB Pre-Cladding and RAB Board 轻松安全搬运HomeRAB预置垫层和RAB板的小贴士

✓ Carry with two people
两个人一起搬运

✓ Hold near each end and on edge
抬举靠近两端的位置以及边缘处

✓ Exercise care when handling sheet products to avoid damaging the edges/corners
小心谨慎搬运板材产品，避免损坏边缘和边角

3 Applications 产品应用

HomeRAB Pre-Cladding is suitable for use as a rigid air barrier for residential buildings up to and including VH wind zone within the scope of the NZS 3604 and E2/AS1. HomeRAB Pre-Cladding is fixed directly to the framing. The vertical joints are sealed over the face of the HomeRAB Pre-Cladding. HomeRAB Pre-Cladding is suitable for use behind all Hardie™ claddings or alternative claddings such as brick, timber weatherboard, EIFS etc.

HomeRAB预置垫层 适合作为NZS3604和E2/AS1范围内的住宅建筑刚性密封板，抗风性能可高达VH区。HomeRAB预置垫层可直接固定在框架上。纵向连接处密封在HomeRAB预置垫层的表面。HomeRAB预置垫层适用于所有Hardie™ 外墙或可替外墙材料，如砖、木制护墙板、EIFS等。

RAB Board is suitable for use as a rigid air barrier in EH wind zone in residential or SED project applications to withstand high wind pressures in conjunction with cladding/commercial facades. In these applications, RAB Board is fixed directly to the framing. The vertical joints are sealed over the face of the RAB Board using joint flashing tape.

RAB板是可用于住宅建筑或SED项目中的刚性密封板，抗风级别高达EH风区；常与外墙/商用外墙材料结合使用。在使用中，RAB板可直接固定在框架上， 纵向连接处用防水胶带密封在RAB板表面。

3.1 Pre-Cladding Products by James Hardie
James Hardie的预置垫层产品

HomeRAB Pre-Cladding and RAB Board can remain exposed to the external elements for maximum 180 days prior to the external cladding being installed.

在安装外墙之前，HomeRAB预置垫层和RAB板可以暴露在外面的时间长达180天。

The RAB Board can be used as a backing board behind other proprietary claddings i.e. stack stone which comply with the NZBC requirements. Proprietary cladding must be installed as per their manufacturing specifications. In these applications, a flexible underlay must be used as a slip layer to cover RAB Board and ensure a separation between mortars and RAB Board. The RAB Board is fixed over a minimum 18mm thick cavity batten for these applications. The RAB Board may also be required over the framing to withstand high wind pressures within the cavity.

RAB板可以用作其他一些符合NZBC条款要求的特定外墙材料的背衬板，即符合NZBC要求的堆石。特定外墙材料必须按照生产商的建议安装。 在应用中，必须使用弹性垫层作为隔层来覆盖RAB板，并确保分隔砂浆和RAB板。 RAB板需要固定在厚度至少18mm的空心板条上。 RAB板也可用于框架上，以承受空腔内的高风压。

The claddings/facades used over HomeRAB Pre-Cladding or RAB Board must satisfy the various performance requirements of the NZBC.

安装在HomeRAB预置垫层或RAB板上的覆层/外墙材料必须符合NZBC的各种性能要求。

Horizontal profiled metal and uPVC claddings must not be direct fixed over HomeRAB Pre-Cladding or RAB Board. These must be fixed over an underlay or overlay the HomeRAB Pre-Cladding or RAB Board using the cavity construction method.

横向异形金属和uPVC外墙材料不可以直接固定在HomeRAB预置垫层或RAB板上，必须使用空腔构造方法将其固定在HomeRAB预置垫层或RAB板的上层或底层。

Vertical profiled metal cladding can be direct fixed over HomeRAB Pre-Cladding or RAB Board with a flexible underlay separator to comply with manufacturers recommendations.

纵向异形金属外墙材料可以直接固定在带有弹性垫层的HomeRAB预置垫层或RAB板上，以符合制造商建议。

The cladding fastener length must be increased by 5mm minimum to maintain the required nail pull out strength.

外墙紧固件长度必须至少增加5mm，以保证钉子顺利拔出。

In case of gable end trusses sitting on top plates of external wall frame, the frame size must comply with the minimum timber sizes stipulated for wall frames in Section 8 of the NZS 3604.

如果山墙端桁架固定在外墙框架的顶板上，则框架尺寸必须符合NZS 3604第8节规定的最小木材尺寸要求。

3.1.1 Temporary weather protection 临时防风雨保护

Installation of internal lining can be started after HomeRAB Pre-Cladding or RAB Board have been installed on the exterior of the building envelope. In order to achieve this, all sheet joints and penetrations must be sealed and the roof, soffit lining, windows/doors (including head flashings and airseals) must have been installed to ensure the building is weathertight before starting the installation of internal linings. The insulation, electrical cables, plumbing and any other services required in external walls must be installed and inspected by the building consent authority before starting the installation of internal linings. The internal lining and services must be installed in accordance with their manufacturer's product literature and comply with the NZBC requirements.

在将HomeRAB预置垫层或RAB板安装在建筑围护结构的外部之后，即可开始安装内衬层。为此，必须对所有的板材连接处和穿口处进行密封处理，并且必须先安装屋顶、拱腹内衬、窗户/门（包括窗楣防水板和气密密封）等，以确保在开始安装内衬层之前建筑物具备防风雨性能。 在开始安装内衬层之前，必须安装外墙所需的绝缘、电缆、管道和任何其他安装工作，并由建筑许可管理局检查合格。内衬层和安装必须按照其制造商的产品说明进行，并符合NZBC的要求。

The claddings must be installed within 180 days after the installation of HomeRAB-Pre-Cladding or RAB Board.
外墙必须在安装HomeRAB预置垫层或RAB板后的180天内安装完成。

3.1.2 Bracing 支撑

For bracing application the HomeRAB Pre-Cladding and RAB Board must be installed as per HomeRAB Pre-Cladding/RAB Board bracing details in the James Hardie Bracing Design Manual. Bracing with rigid air barriers can only be achieved when fixed direct to frame. The board must be fixed in accordance with the bracing details to all framing. For further information on bracing refer to Section 6 and the James Hardie Bracing Design Manual or Ask James Hardie on 0800 808 868.

在用于支撑时，HomeRAB预置垫层和RAB板的安装必须遵从《James Hardie支撑设计手册》中的HomeRAB预置垫层/RAB板支撑细节。只有被直接固定在框架上，刚性密封板才能实现其支撑作用。预置垫层/RAB板必须按照框架支撑细节进行安装及固定。有关支撑的更多信息，请参阅第6节和《James Hardie支撑设计手册》，或致电Ask James Hardie 0800 808 868。

3.1.3 Fire rated wall construction 耐火墙施工

RAB Board is classified as 'Non-Combustible Material'. For fire rated wall applications RAB Board must be installed as per the current James Hardie Fire and Acoustic Design Manual. RAB Board is suitable to achieve fire ratings up to 60 minutes when installed in accordance with fire systems specifications published in the James Hardie Fire and Acoustic Design Manual. The board must be fixed with Hardie™ Flex nails at 150mm centres to all framing.

RAB板被归类为“不可燃材料”。在用于耐火墙时，RAB板的安装必须遵从现行的《James Hardie耐火隔音设计手册》的要求。按照《James Hardie耐火隔音设计手册》中耐火系统的规格安装，RAB板耐火等级可达60分钟。RAB板必须用Hardie™ Flex钉固定在离中心150mm的框架周边。

3.2 Stud To Top Plate Fixing 墙筋到顶板的固定

Refer to Section 5.2, Figures 16 and 17 for alternative stud to top plate connection.

请参见第5.2节 图16和图17了解墙筋与顶板的连接方式。

3.3 Seismic Deflections 地震偏转

RAB Board is suitable for use as rigid backing in buildings where the structure is designed to expect the lateral inter-storey seismic deflections. The seismic deflections can have a significant effect on the performance of the façade system and its components, therefore it is crucial to first understand the amount of inter-storey deflections and then to choose a suitable rigid air barrier and façade system that has been tested to meet the performance appraised.

RAB板适合用作建筑物的刚性背衬，其横向层间结构设计适用于地震偏转。地震偏转会对外墙系统及其组件的性能产生显著影响，因此首先了解层间偏转的知识至关重要，然后选择经测试满足性能要求的刚性密封板和外墙系统。

James Hardie has a range of tested cladding/façade systems with RAB Board that are suitable for a range of seismic deflection. For further design and installation guidance, refer to clause 5.3.3 of this manual and Figure 26.

James Hardie拥有一系列经过测试的包括RAB板在内的覆层/外墙系统适用于不同程度的地震偏转。 有关进一步的设计和安装指导，请参阅本手册第5.3.3条和图26。

4 Framing and fixings 框架与固定

4.1 Framing 框架

The timber framing shall be in accordance with the NZS 3604 or comply with the specific engineering design requirements. The timber treatment must comply with the NZBC Acceptable Solution B2/AS1 requirements.

木框架必须满足NZS 3604的要求，或符合特定的工程设计要求。木材处理必须符合NZBC可接受解决方案B2/AS1的要求。

The minimum framing size required for fixing HomeRAB Pre-Cladding or RAB Board is 90 x 45mm. Ensure that the framing is suitable for installing the selected cladding. Refer to cladding installation manual for further information about the framing requirements.

固定HomeRAB预置垫层或RAB板所需的最小框架尺寸为90x45mm。请确保框架适用于所选外墙的安装。有关框架要求的更多信息，请参阅外墙安装手册。

For specific engineering design projects where the timber framing differs from whats been provided in this manual, Ask James Hardie on 0800 808 868.

对于木框架与本手册中提供的不同的特定工程设计项目，请致电0800 808 868 Ask James Hardie。

Table 4 表4

Product 产品	Wind zone 风区	Framing centres (max) 框架间距
HomeRAB Pre-Cladding HomeRAB预置垫层	Up to and including H (High) 小于等于H（高）	600mm
HomeRAB Pre-Cladding HomeRAB预置垫层	Very High 极高	400mm
RAB Board RAB板	Up to and including VH (Very High) 小于等于VH (极高)	600mm
RAB Board RAB板	EH (Extra High) & SED (above 1.5kPa to 4.5kPa) EH（超高）和 SED(1.5kPa至4.5kPa)	400mm

Note: HomeRAB Pre-Cladding must not be used in EH, SED wind zones and on fire rated wall application. Use RAB Board instead

注意：不得在EH，SED风区和耐火墙应用中使用HomeRAB预置垫层。请使用RAB板

4.2 Fixings 固定

HomeRAB Pre-Cladding and RAB Board must be installed with its sealed face towards the external cladding and unsealed face towards the framing. The sealer applied on the face helps the board to drain the moisture freely over the face and keeps it dry.

安装时，HomeRAB预置垫层和RAB板的密封面必须朝向外墙材料，未密封面朝向框架。表面和边缘处的一体式密封能快速排散水分并抵挡水分渗透，以保持干燥。

- Nails must finish flush with board surface
  钉子必须完全与板表面齐平

The HomeRAB Pre-Cladding and RAB Board are fixed as described below.

HomeRAB预置垫层和RAB板的固定如下所述。

HomeRAB Pre-Cladding and RAB Board can either be gun nailed or hand nailed. It is recommended to use gun nails to cut down installation time. When gun nailing use round head nails and follow nail gun manufacturer's instructions for correct operation of tool and site safety requirements.

HomeRAB预置垫层和RAB板之间的固定可以采用枪钉或手钉。建议使用枪钉来缩短安装时间。当使用圆头钉枪钉时，请按照钉枪制造商的说明，正确操作工具并保证现场的安全要求。

- Nails must have a minimum clearance of 12mm from the sheet edges and a minimum of 50mm horizontally and 75mm vertically from the sheet corners

  钉子与板材边缘的最小间隙为12mm，横向距离为50mm，纵向距离为75mm
- When using a nail gun the gun nails must have a full round head to provide the required holding power, and minimum length of the hand nail

  使用射钉枪时，枪钉必须有一个完整的圆头，以提供所需的夹持力，并保证手钉的最小长度。

Note: Refer to Table 5 regarding nail sizes and fixing centres for various applications
注意：有关各种应用的钉子尺寸和固定间距，请参阅表5

Table 5 表5

HomeRAB Pre-Cladding/RAB Board 6mm | HomeRAB预置垫层/RAB板6mm			
Application 应用	**Type of nail 钉子种类**	**Nailing centres to all framing 所有框架钉子中心间距**	**Nailing option 打钉方式**
General 通用	40 x 2.8mm Hardie™ Flex 钉	200mm	Gun nail or hand nail 手打或钉枪
Fire rating 耐火	40 x 2.8mm Hardie™ Flex 钉	150mm	Gun nail or hand nail 手打或钉枪
Bracing 支撑	40 x 2.8mm Hardie™ Flex 钉	100mm 150mm	Gun nail or hand nail 手打或钉枪

RAB Board 9mm | RAB板9mm			
Application 应用	**Type of nail 钉子种类**	**Nailing centres to all framing 所有框架钉子中心间距**	**Nailing option 打钉方式**
General 通用	50 x 2.8mm Hardie™ Flex 钉	200mm	Gun nail or hand nail 手打或钉枪
Fire rating 耐火	50 x 2.8mm Hardie™ Flex 钉	150mm	Gun nail or hand nail 手打或钉枪
Bracing 支撑	50 x 2.8mm Hardie™ Flex 钉	100mm 150mm	Gun nail or hand nail 手打或钉枪

Note: 注意：

- Nails must finish flush with board surface
  钉子必须与板表面齐平
- Nails must have minimum clearance of 12mm from the sheet edges and a minimum of 50mm horizontally and 75mm vertically from the sheet corners
  钉子与板边缘的最小间隙为12mm，横向与板角之间的最小间隙应为50mm，纵向与板角的最小间隙应为75mm
- **Do not use D-head nails**
  请勿使用D头钉

4.3 Fastener Durability 紧固件耐久性

Fasteners must have the appropriate level of durability required for the intended project to comply with the NZBC. This is of particular importance in coastal areas, areas subject to salt spray and other corrosive environments. Refer to Table 6 for information regarding the types of nails to use to comply with the durability requirements of the NZBC.

紧固件必须具有项目所需的耐久性以符合NZBC的要求。耐久性在沿海地区、受盐雾和其他腐蚀性环境影响的地区尤其重要。 请参阅表6，了解不同类型钉子的适用范围，以符合NZBC的耐用性要求。

Table 6 表6

Exposure conditions and nail selection prescribed by NZS 3604 NZS 3604规定的外露条件和钉子选择		
Zone 区域	**Application 应用**	**Nail material 钉子材质**
D (Sea Spray) * and Geothermal hot spots D区（海雾）和地热区	General 通用	Stainless steel 304/316 不锈钢 304/316
	Fire 耐火	
	Bracing 支撑	
C and B	General 通用	Hot dip galvanised** 热浸镀锌**
	Fire 耐火	
	Bracing 支撑	

*Where local knowledge dictates that increased durability is required use stainless steel nails

*如果当地情况证明需要提高耐用性，请使用不锈钢钉子

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

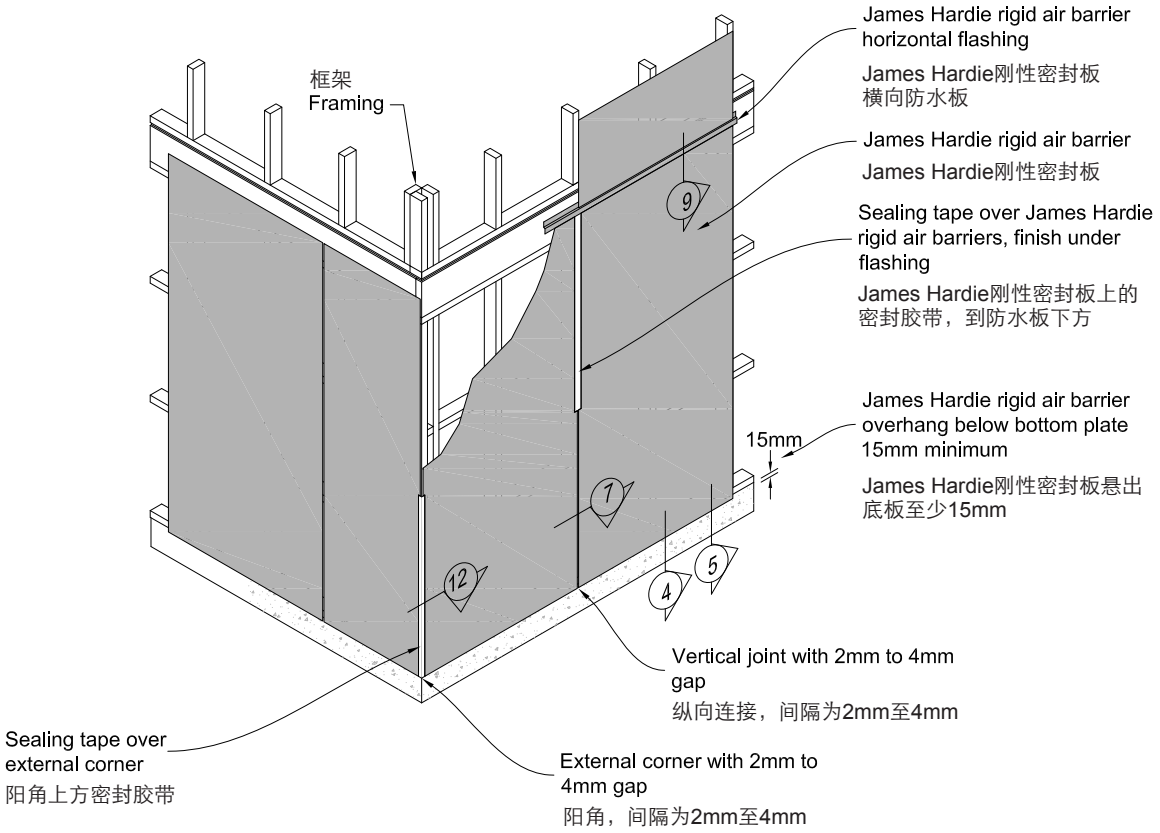
**热浸镀锌必须符合AS / NZS 4680的规定

Fasteners must be fully compatible with all other materials that they are in contact with to ensure the durability and integrity of the assembly. Contact fastener manufacturers for more information. Also refer to Table 20 and 21 of E2/AS1 for further information about the suitable fastening materials and their compatibility with other materials.

紧固件必须与其接触的所有其他材料完全兼容，以确保组装后的耐用性和完整性。 请与紧固件制造商联系以获取更多信息。 另请参阅E2 / AS1的表20和表21，以获取有关合适的紧固材料及与其他材料兼容性的更多信息。

Figure 3: HomeRAB Pre-Cladding and RAB Board layout

图3: HomeRAB预置垫层和RAB板布局



4.4 Clearances 间隙

HomeRAB Pre-Cladding and RAB Board must extend below the bottom plate by 15mm minimum over concrete foundation and 15mm past floor joist of timber foundation. HomeRAB Pre-Cladding and RAB Board must maintain a 100mm minimum clearance between the bottom edge of the sheet and the finished ground.

HomeRAB预置垫层和RAB板必须延伸出底板下方至少15mm，超过混凝土基础，并超出木材基础地板托梁15mm。HomeRAB预置垫层和RAB板必须在板材的底部边缘和完成的地面之间保持至少100mm的间隙。

Check cladding manufacturer for minimum clearances required for the selected cladding.

请向外墙制造商查询，以了解所选外墙所需的最小间隙。

Figure 4: Foundation detail — direct fix cladding
图4：地基细节-直接固定外墙

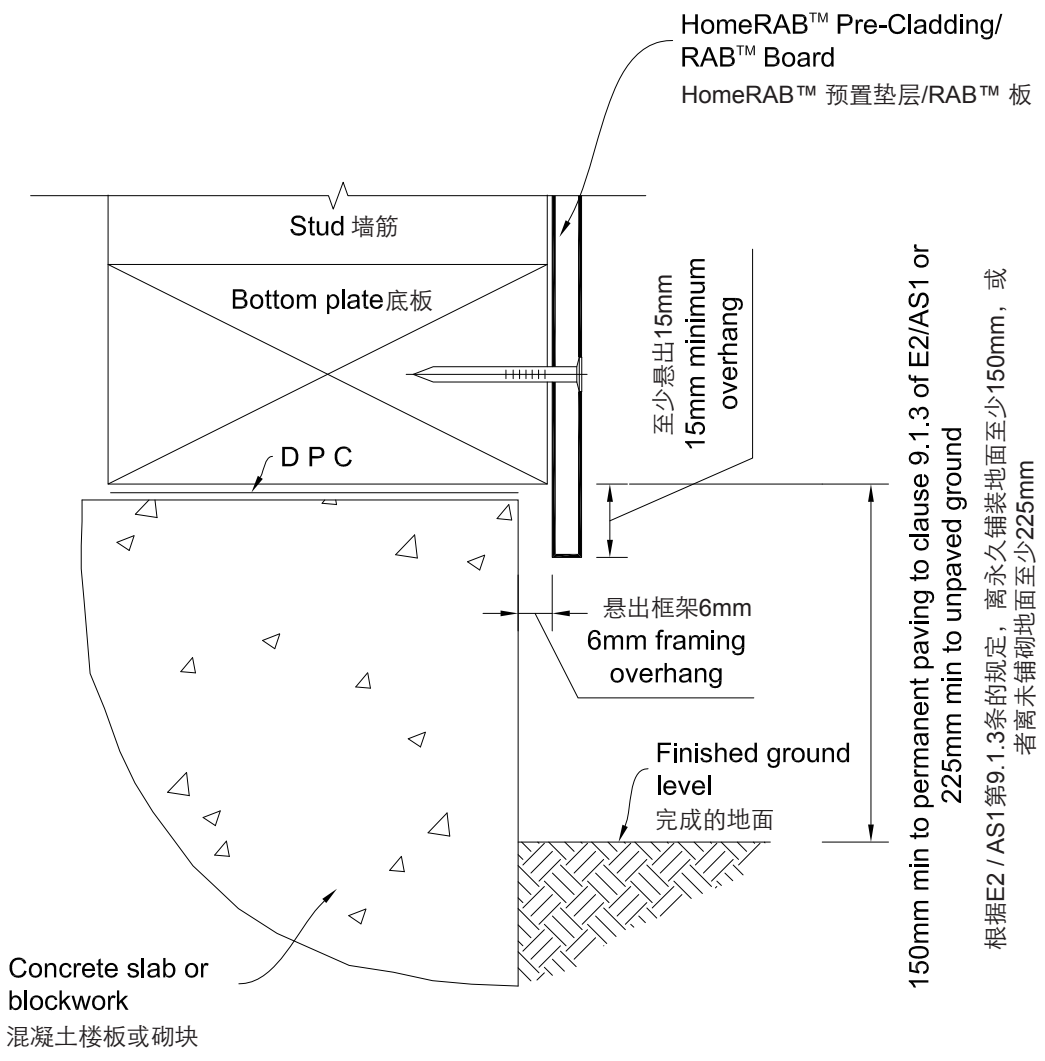
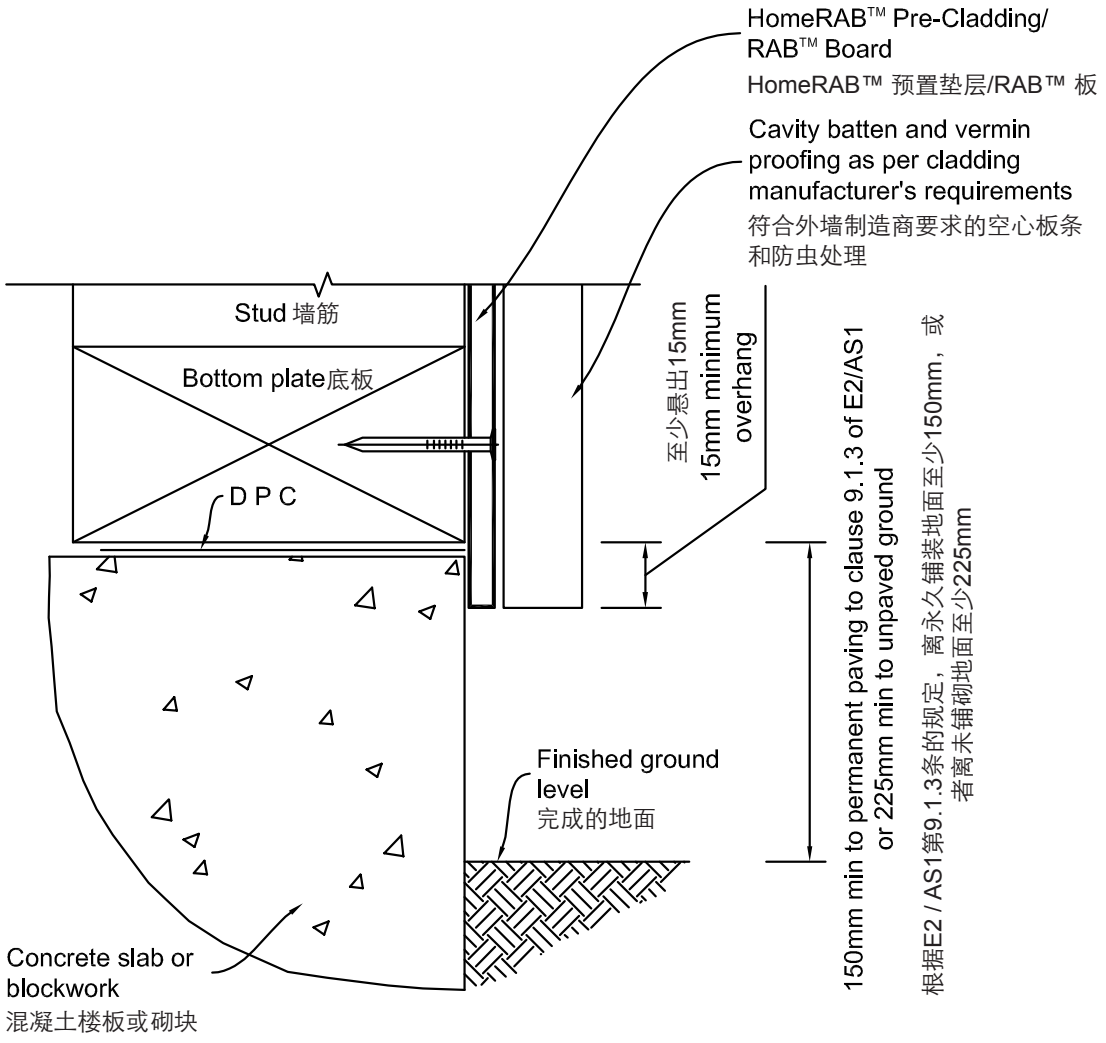


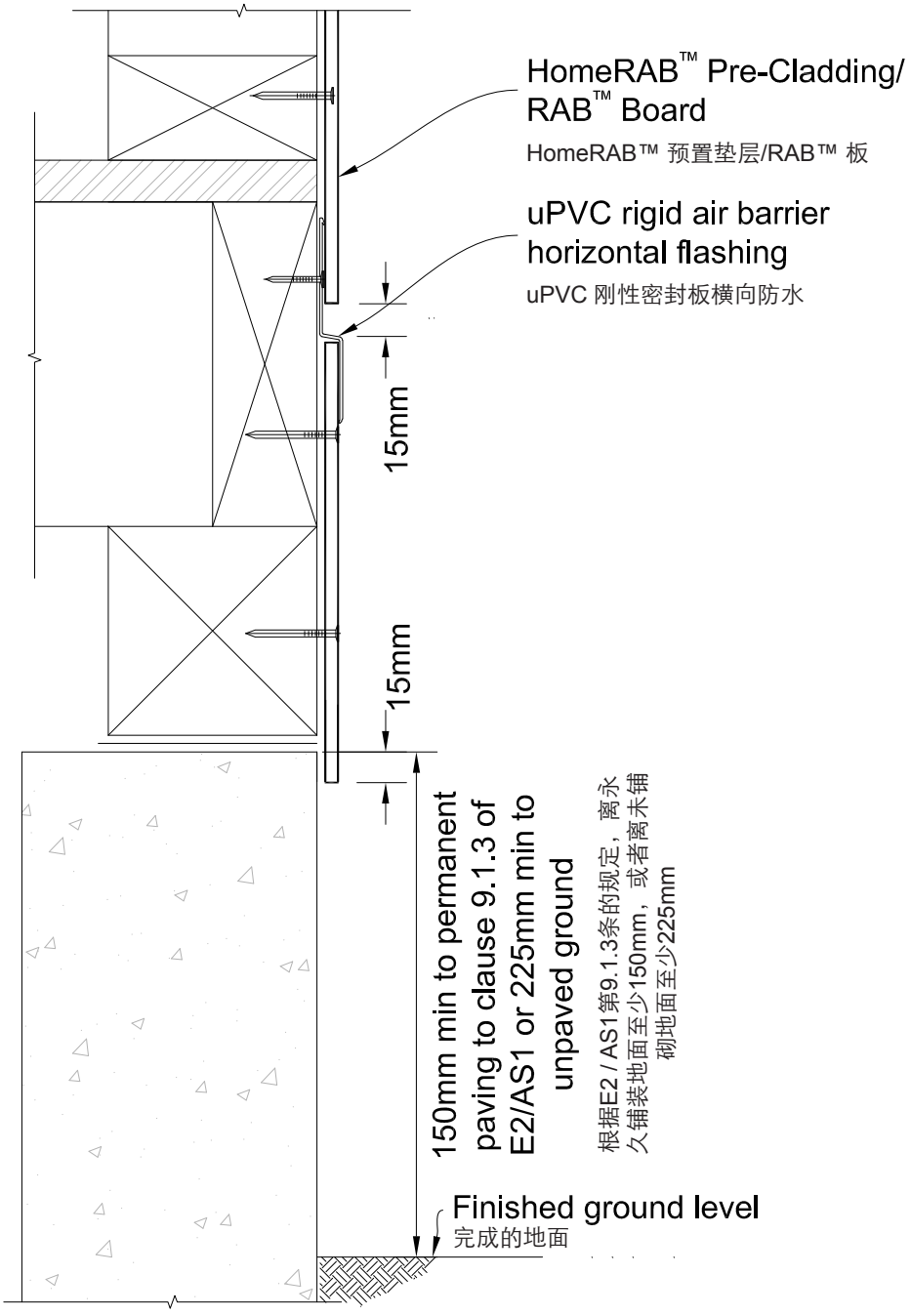
Figure 5: Foundation detail — cavity fix cladding
图5：地基细节-空腔安装外墙



Maintain the required clearances between the bottom plate and top of ground to comply with the NZBC and NZ standards. The adjacent finished ground must slope away from the building in accordance with the NZBC requirements. Do not install HomeRAB Pre-Cladding or RAB Board in such a way that it may remain in contact with standing water.

根据NZBC和新西兰标准，在底板和地面之间需要保持必要的间隙。根据NZBC的要求，与建筑物墙体相邻的地面完工时须要呈斜坡状。请保证安装的HomeRAB预置垫层或RAB板不要与积水接触。

Figure 6: Foundation detail – timber foundation
图6：地基细节-木制地基



5 Installation 安装

5.1 Board Layout 板材布局

When using HomeRAB Pre-Cladding or RAB Board, flexible underlays are not required over the framing. HomeRAB Pre-Cladding/RAB Board have been tested and comply with the performance requirements of Table 23 of Clause E2 of the NZBC. The sheets are jointed keeping a gap of 2-4mm maximum between the sheet edges. The board must be cleaned of any dust before fixing the jointing tape over the joint.

当使用HomeRAB预置垫层或RAB板时，框架上无需再使用弹性垫层。HomeRAB预置垫层/RAB板已通过测试，符合NZBC E2条款表23的性能要求。连接板材时，板边缘间的最大间隙应为2-4mm。在将连接胶带固定在连接处上之前，必须清除板上的灰尘。

Cut edges where exposed must be primed prior to installation with Dulux® 1 Step, Resene Quick Dry or similar.

安装之前，必须使用Dulux® 1 Step，Resene快干漆或类似产品对裸露的切割面进行底漆处理。

The bottom edge of HomeRAB Pre-Cladding and RAB Board must overhang below the bottom plate by 15mm minimum, refer to Figures 4 and 5.

HomeRAB预置垫层和RAB板的底边必须悬出底板下方至少15mm，请参见图4和图5。

5.1.1 Vertical joints 纵向连接

Vertical joints must be sealed to stop the moisture ingress into the framing behind James Hardie rigid air barrier. The vertical joints are sealed over by running a 75mm wide sealing tape e.g. Thermakraft Premium Joining Tape, SUPER-STICK Building Tape/3M All Weather Flashing Tape 8067.

纵向连接处必须密封，以防止水分进入James Hardie刚性密封板后面的框架。纵向连接处需使用75mm宽的密封胶带密封，如 Thermakraft高级连接胶带、SUPER-STICK建筑胶带/ 3M全天候防水胶带8067等。

The sealing tapes must be pressed hard over the HomeRAB Pre-Cladding or RAB Board surface while fixing so that they achieve the required bond. The sealing tapes must not be exposed to elements for more than 180 days. This achieves the required protection when the cladding is installed. The claddings must be installed within 180 days.

固定时，必须用力将密封胶带压在HomeRAB预置垫层或RAB板的表面上，以实现安装所需的粘合度。密封胶带不得暴露超过180天。这样做的目的是确保胶带在安装外墙时有足够的保护性。外墙必须在180天内安装。

Note: Refer to sealing tape manufacturers recommendations regarding the installation of their sealing tapes in cold climate conditions. It is recommended to warm up the sealing tapes eg when the air and substrate temperatures are below 10˚C. Check with tape manufacturer for their recommendations

注意：请参阅密封胶带制造商的建议，关于在寒冷气候条件下安装密封胶带的问题。建议在空气和基材温度低于10°C时，提前预热密封胶带。请向密封胶带制造商咨询详情。

5.1.2 Horizontal joints 横向连接

The horizontal joint of HomeRAB Pre-Cladding or RAB Board must be flashed using a uPVC horizontal flashing or alternatively aluminium or colour steel Z flashings can also be used. Refer to Figures 8, 9 and 10. Leave a gap of 15mm minimum at the solid timber floor joist or as specified by the project engineer. The flashing must be lapped by a 35mm minimum on both sides of the joint.

HomeRAB预置垫层或RAB板的横向连接处必须使用uPVC横向防水板或使用铝或彩钢Z防水板进行防水处理。请参阅图8、图9和图10。在木地板托梁上，至少留出15mm的间隙或遵从项目工程师的规定。防水板必须在连接处两侧搭接至少 35 毫米。

For walls longer than 3m, horizontal uPVC flashing must be lapped by 50mm minimum and silicone sealed.

长于3m的墙壁，uPVC横向防水板之间必须有至少50mm的搭接处，并用硅酮密封。

HomeRAB Pre-Cladding and RAB Board must not be fixed into floor joists.

HomeRAB预置垫层和RAB板不得固定在地板托梁中。

5.1.3 Internal/external corners 阴角/阳角

All corner joints of HomeRAB Pre-Cladding and RAB Board must be sealed using a 75mm minimum wide sealing tape.

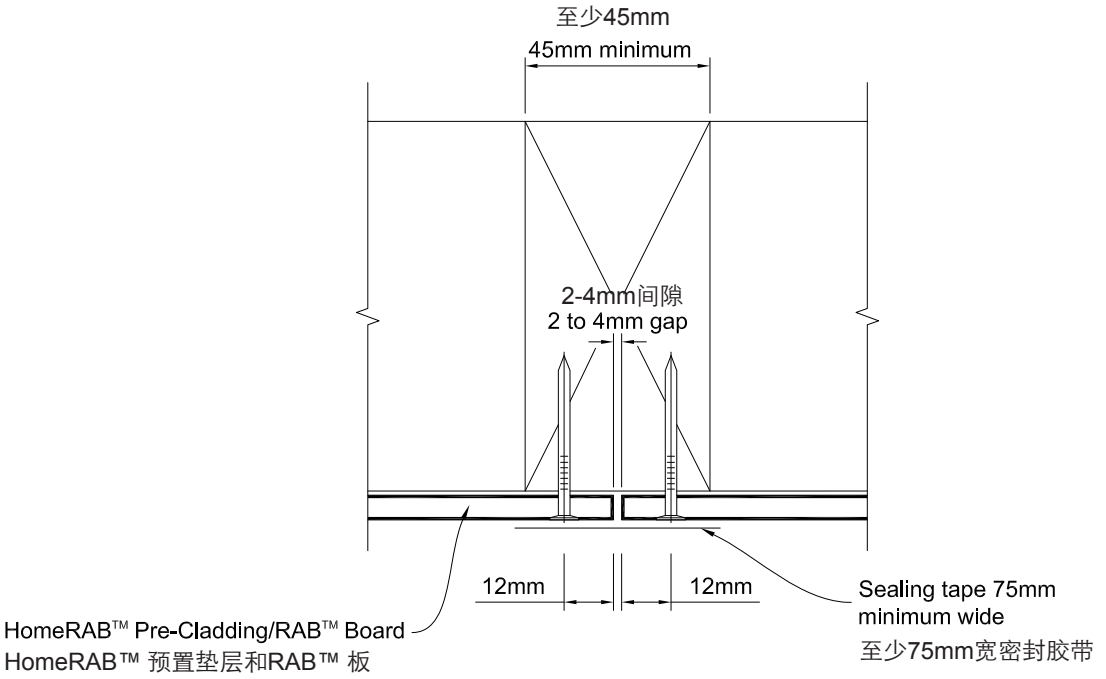
必须使用最小75mm宽的密封胶带对HomeRAB预置垫层和RAB板的角连接处进行密封。

When using a uPVC horizontal flashing in horizontal joints, the internal and external corner flashing joints must be sealed using a 75mm minimum wide joint sealing tape. Refer to Figures 13a, 13b and 13c.

在横向连接处使用uPVC横向防水板时，必须使用不窄于75mm宽的连接密封胶带，对阴角和阳角的防水连接进行密封。参见图13a，13b和13c。

Figure 7: Vertical joint
图7：纵向连接

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5.1.4 Flexible underlay 弹性垫层

HomeRAB Pre-Cladding and RAB Board can also be used in conjunction with flexible underlay in accordance with Section 9.1.7.2 of E2/AS1. When installing rigid underlay as per E2/AS1 requirements, its vertical joint does not require to be sealed with flashing tapes, but instead, a flexible underlay is applied over the entire rigid air barrier in accordance with Section 9.1.7.1. The flexible underlay must comply with Table 23 of E2/AS1. The wall openings must be flashed in accordance with E2/AS1 and this installation manual.

根据E2 / AS1的第9.1.7.2节的规定，HomeRAB预置垫层和RAB板可以与弹性垫层一起使用。当按照E2 / AS1的要求安装弹性垫层时，其纵向连接处不需要用防水胶带密封，而是按照第9.1.7.1节的要求，在整个刚性密封板上用一层弹性垫层。弹性垫层必须符合E2 / AS1的表23的要求。墙壁开口必须依照E2 / AS1和本安装手册进行防水处理。

Figure 8: Horizontal joint flashing - tall wall
图8：横向连接防水-高墙

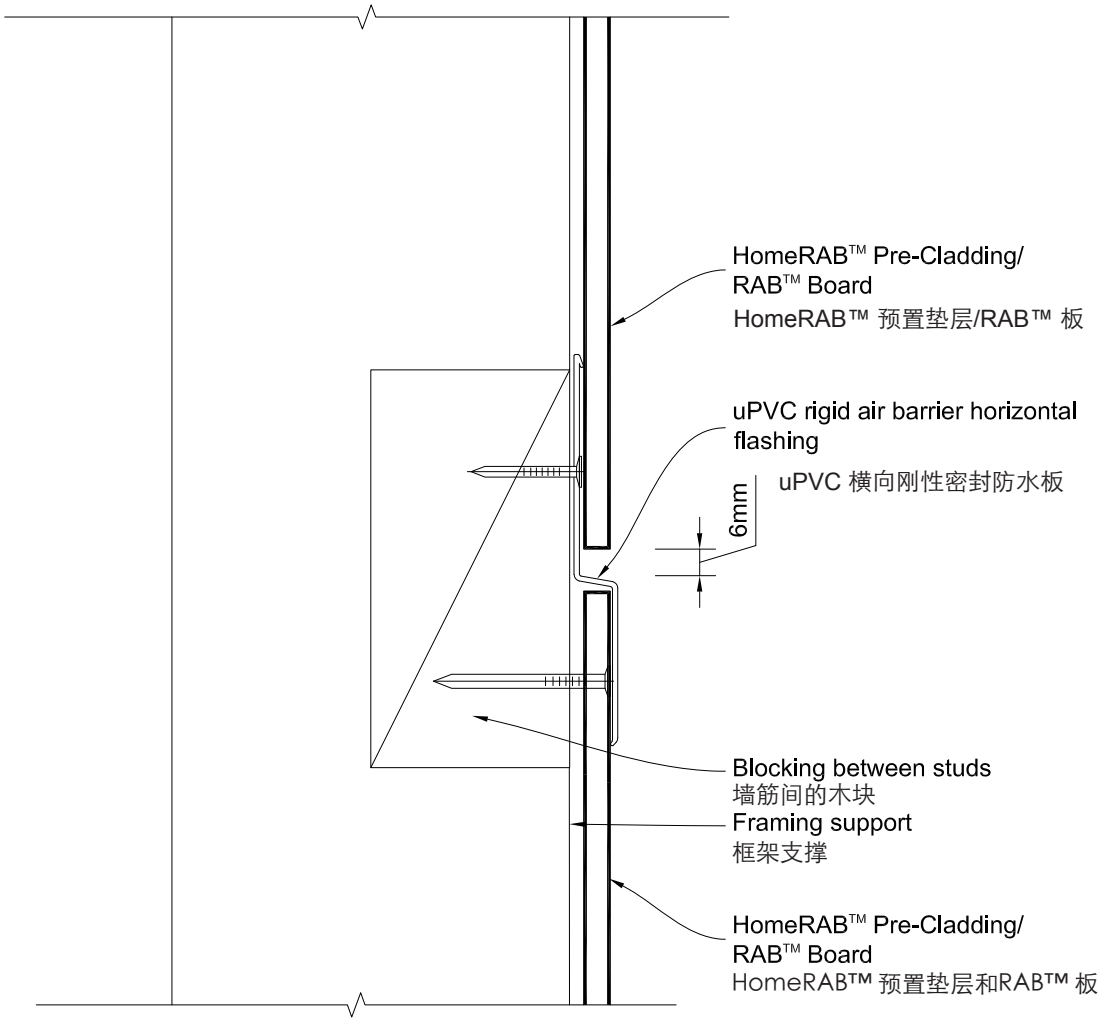


Figure 9: Horizontal joint/flashing - floor joist
图9：横向连接/防水-地板托梁

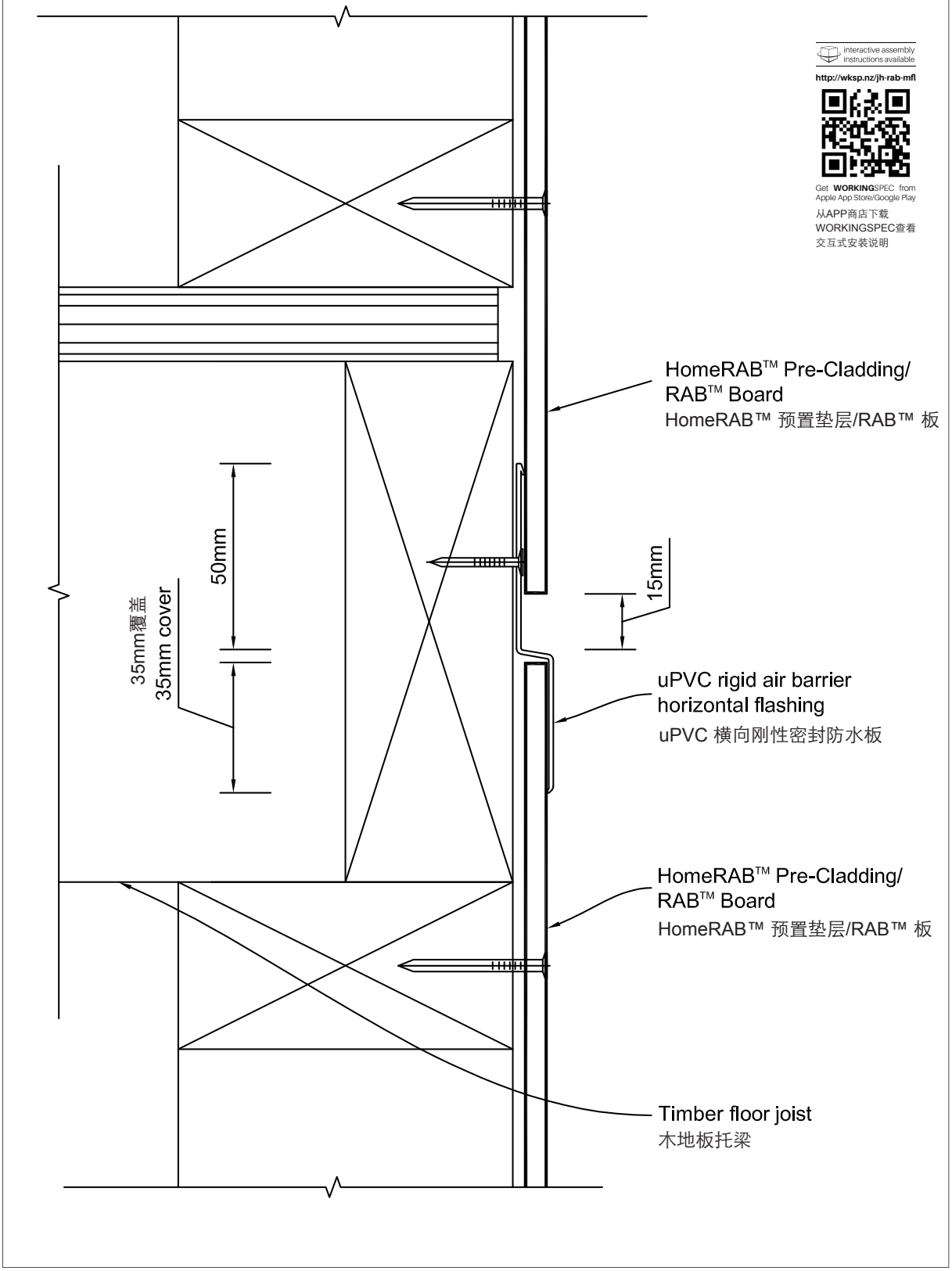


Figure 10: Horizontal joint flashing - concrete beam

图10：横向连接防水 – 混凝土梁

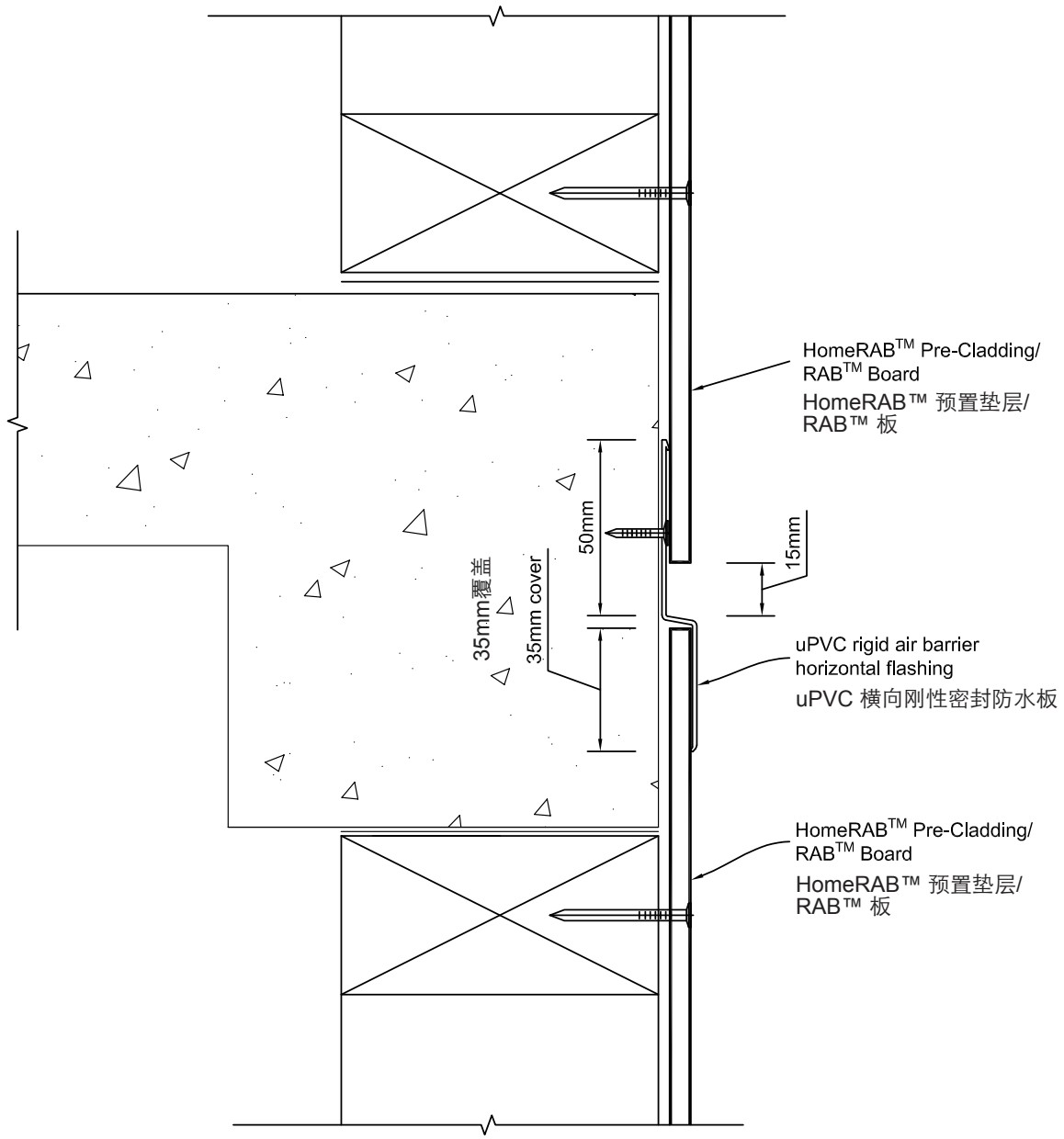


Figure 11: Internal corner joint
图11：阴角连接

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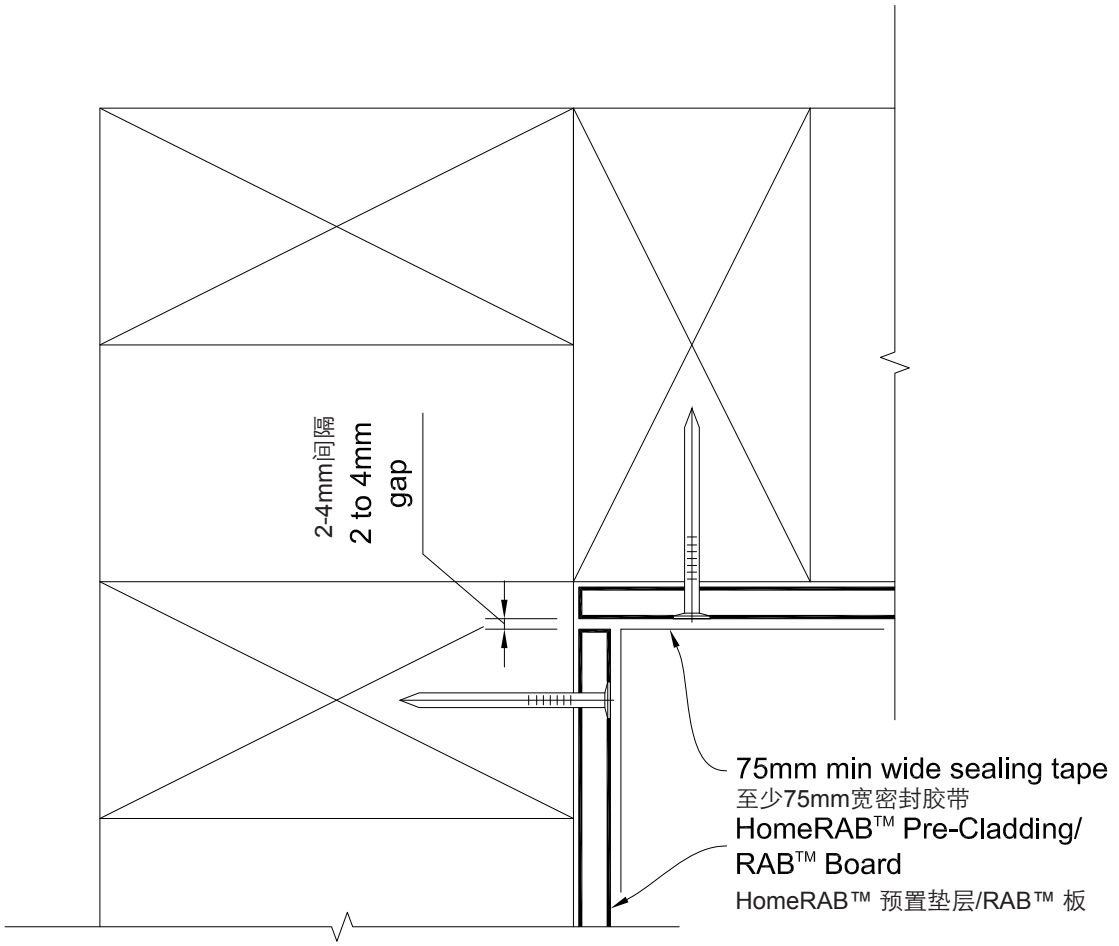


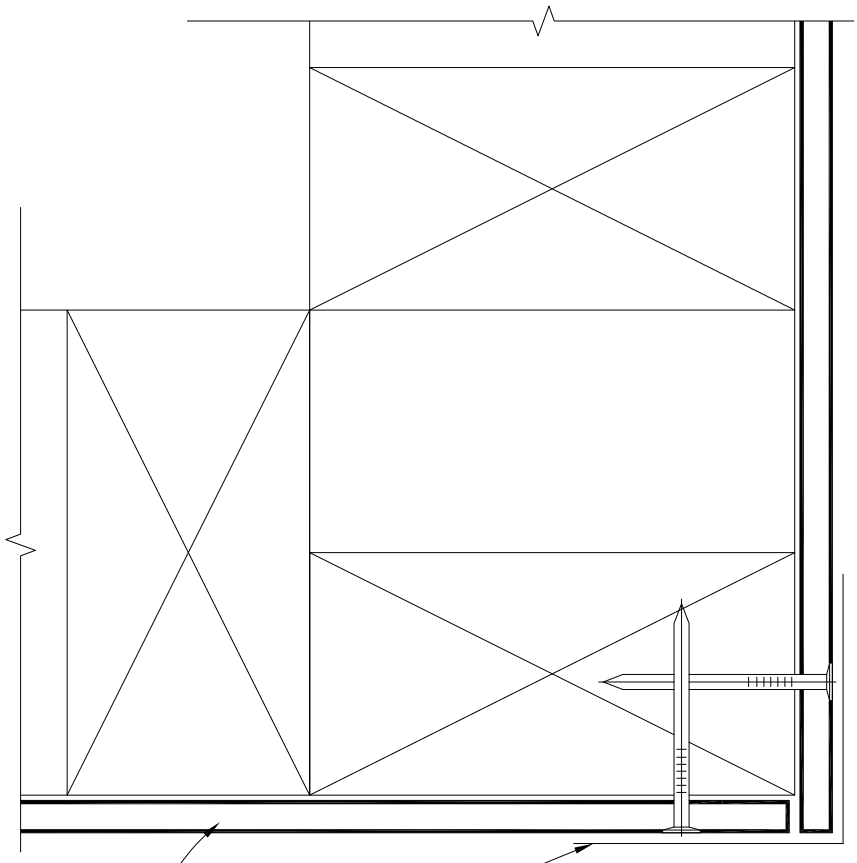
Figure 12: External corner joint
图12: 阳角连接

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HomeRAB™Pre-Cladding/ RAB™ Board

HomeRAB™ 预置垫层/RAB™ 板

75mm min wide sealing tape

至少75mm宽密封胶带

2 to 4mm gap

2-4mm间隔

Figure 13a: Corner junction to horizontal joint
图13a：转角与横向连接处

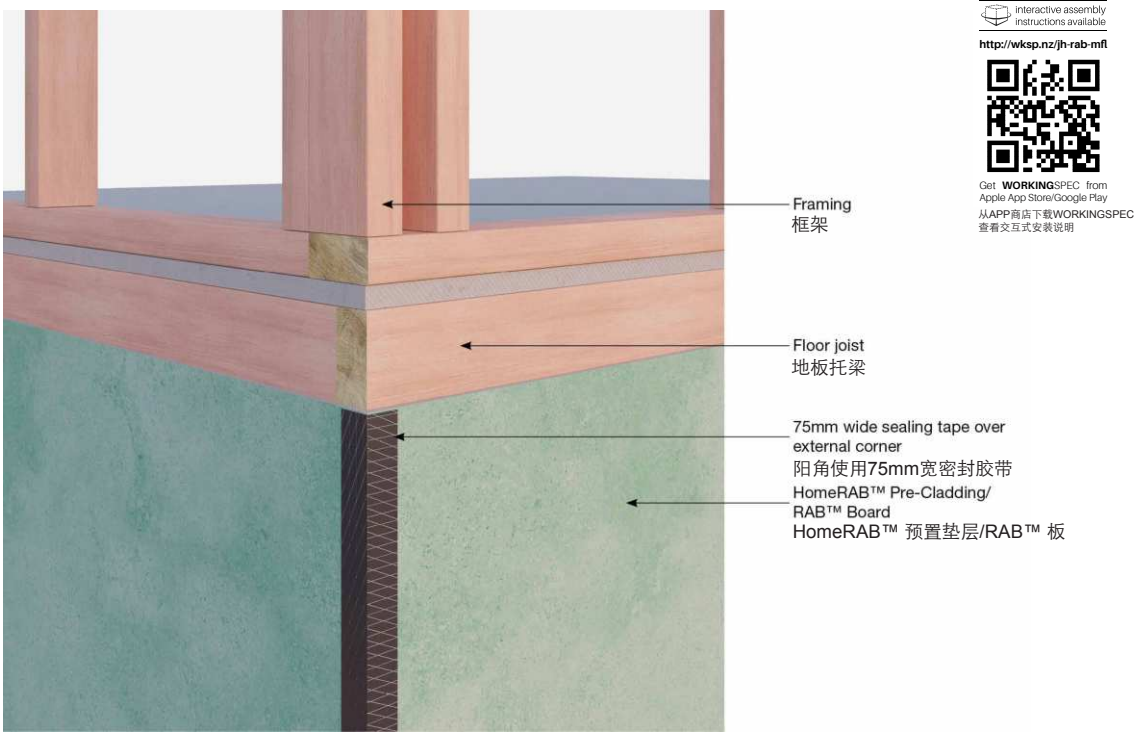


Figure 13b: Corner junction to horizontal joint
图13b：转角与横向连接处

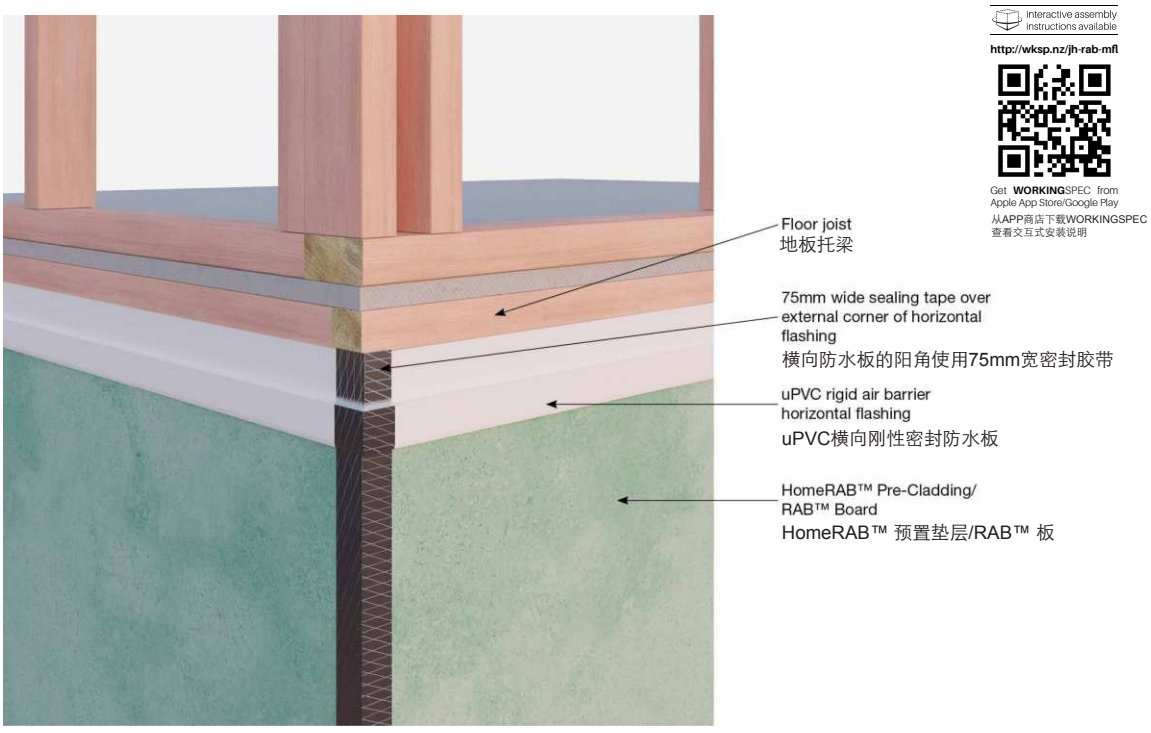
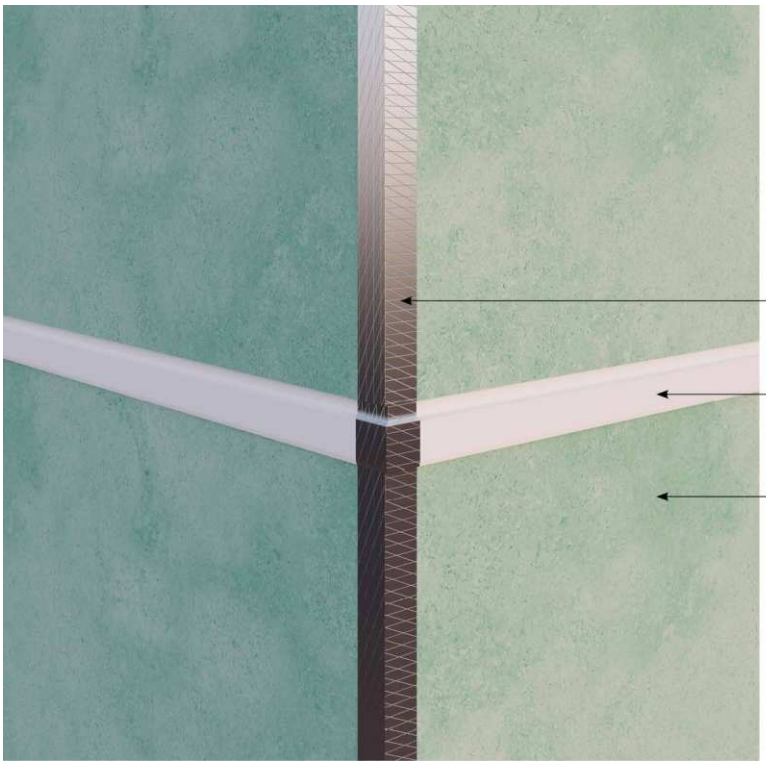


Figure 13c: Corner junction to horizontal joint
图13c: 转角与横向连接处



interactive assembly instructions available

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

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

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75mm wide sealing tape over external corner
阳角使用75mm宽密封胶带

uPVC rigid air barrier horizontal flashing
uPVC横向刚性密封防水板

HomeRAB™ Pre-Cladding/ RAB™ Board
HomeRAB™ 预置垫层/RAB™ 板

Figure 14: RAB Board used as backing board for stucco plaster/proprietary cladding systems

图14: RAB板用作灰泥石膏/专用外墙系统支撑板

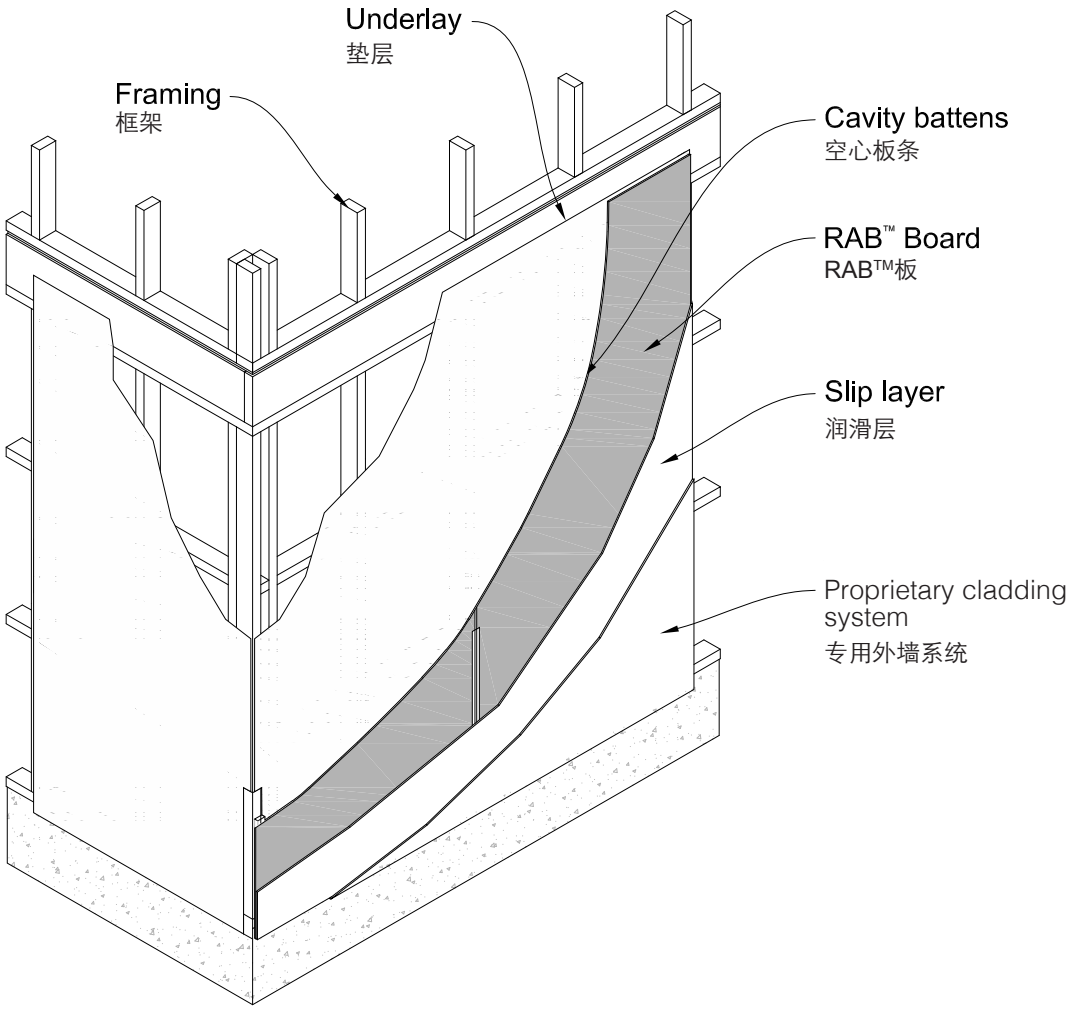
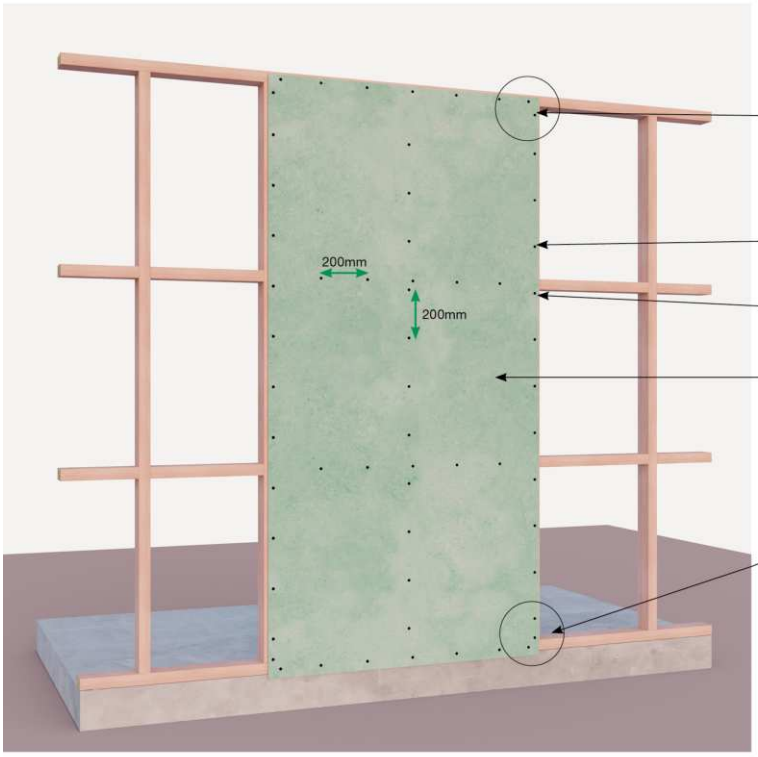
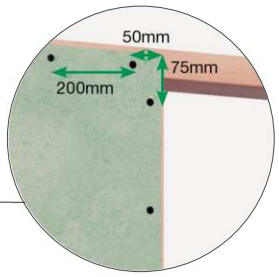
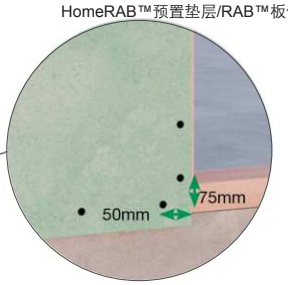


Figure 15: Sheet Fixing - General Application
图15：板材固定-一般应用





40x2.8mm hot dipped galvanised or stainless steel HardieFlex™ nail
40 x 2.8mm Hardie™ Flex 热浸镀锌钉或不锈钢钉
12mm minimum edge distance
距离板边至少12mm
HomeRAB™ Pre-Cladding/ RAB™ Board must be 15mm minimum below bottom plate
HomeRAB™预置垫层/RAB™板低出底板至少15mm



NOTE:
- For bracing and fire rated wall application the board must be fixed at 150mm centres to entire framing
- Where a double top plate is used, the truss fixing should be continuous through the double plates

备注：
- 对于支撑和耐火墙应用，必须将板固定在整个框架上，钉子间距150mm
- 如果使用双顶板，桁架应同时固定在双顶板上

5.2 Stud To Top Plate Fixing 墙筋到顶板的固定

Table 8.18 of the NZS 3604 specifies two types of fixings i.e. Type-A with a fixing capacity of 0.7kN and Type-B with a fixing capacity 4.7kN. HomeRAB Pre-Cladding and RAB Board have been tested and are verified as suitable alternatives to achieve the required stud top plate connectivity as mentioned above and no special use of straps/plates or wire dogs etc. is required.

NZS 3604的表8.18指定了两种固定类型，即固定容量为0.7kN的A型和固定容量为4.7kN的B型。HomeRAB预置垫层和RAB板已通过测试，并经过验证适合用作替代方案，实现如上所述的墙筋与顶板的固定，并且无需特殊使用绑带/板或铁线夹等。

For a 0.7kN connectivity, the standard fixing of HomeRAB Pre-Cladding and RAB Board using 40 x 2.8mm Hardie™ Flex nails at 200mm centres maximum will achieve this.

对于0.7kN连接，按标准固定方式安装HomeRAB预置垫层和RAB板，使用40 x 2.8mm的Hardie™ Flex钉，最大中心间距200mm，即可实现。

For a 4.7kN connectivity, fix HomeRAB Pre-Cladding or RAB Board using 40 x 2.8mm Hardie™ Flex nails or gun nail at 75mm centres maximum to top plate with a minimum edge distance of 20mm. Refer to Figure 16.

对于4.7kN连接，使用40 x 2.8mm的Hardie™ Flex钉或枪钉将HomeRAB预置垫层和RAB板固定到顶板上，入钉最大中心间距75mm，与板边最小距离20mm。参见图16。

Figure 16: Stud to top plate connection
图16：墙筋与顶板的连接

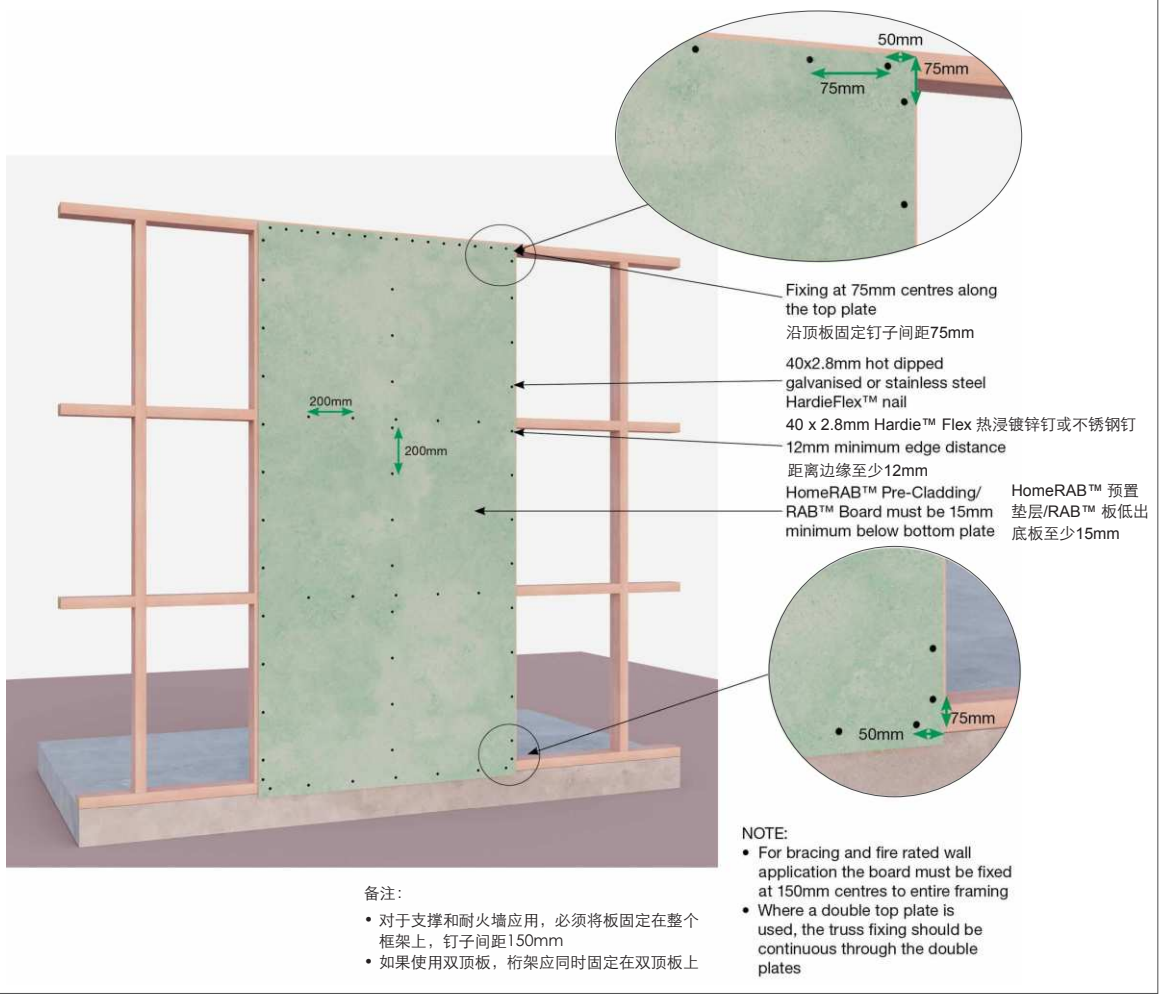
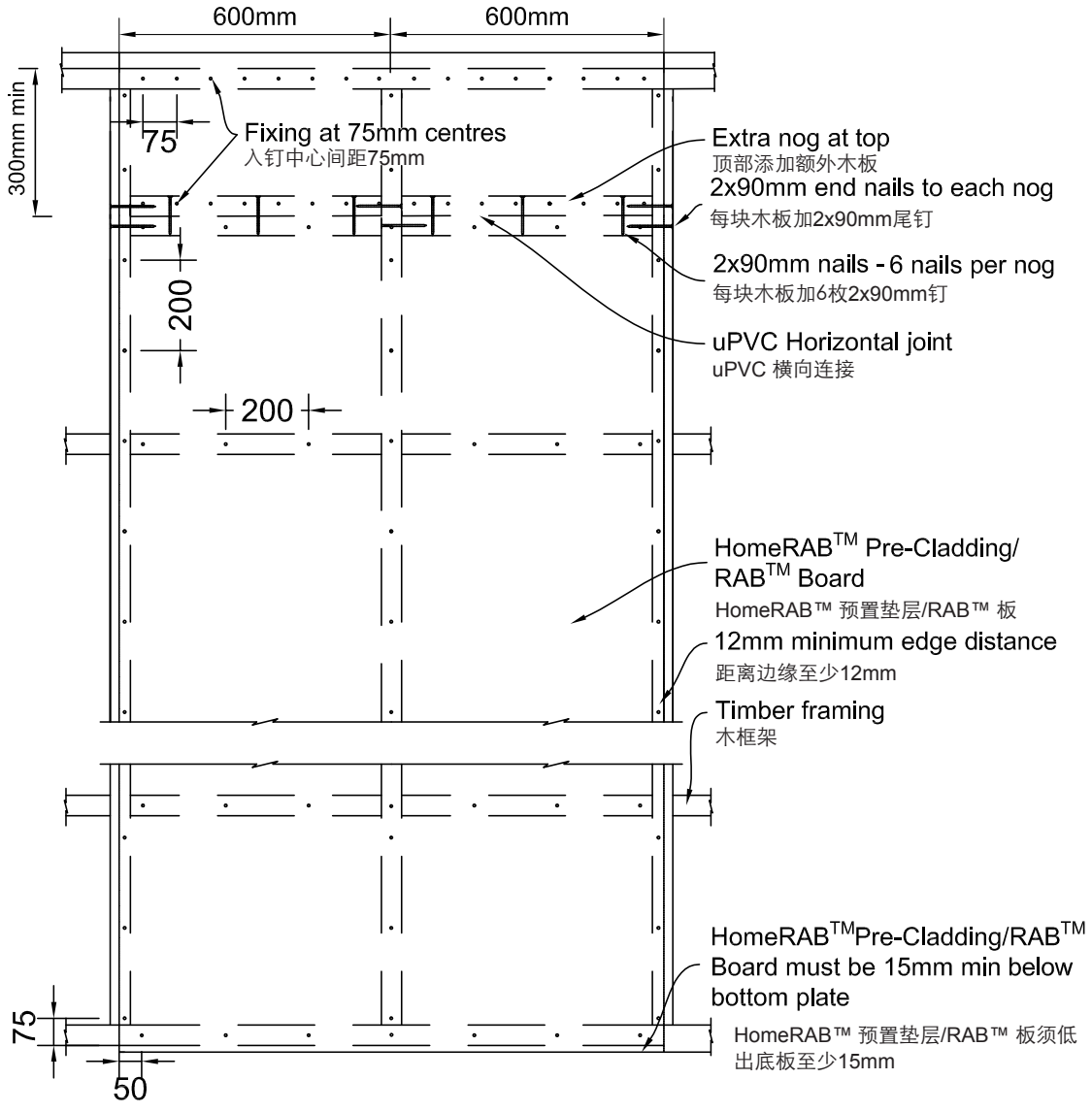


Figure 17: Stud to top plate connection - tall wall
图17：墙筋与顶板的连接 – 高墙



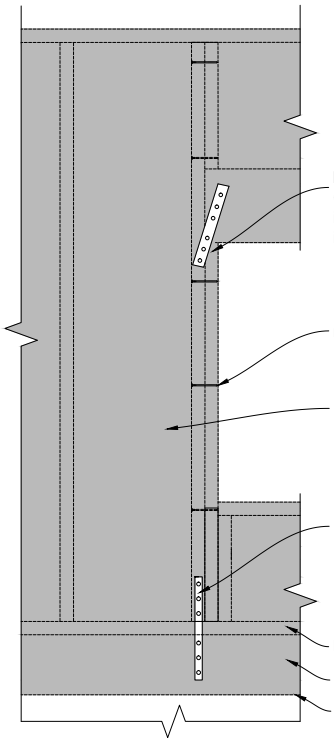
Note:

1. Where a double top plate is used, the truss fixing should be continuous through the double plates.
2. For bracing and fire rated wall application, the board must be fixed at 150mm c/c to entire framing.

备注：

1. 如果使用双顶板，桁架应同时固定在双顶板上
2. 对于支撑和耐火墙应用，必须将板固定在整个框架上，钉子间距150mm c/c

Figure 18: Lintel connection
图18：门梁连接



25 x 1mm strap fixed over HomeRAB™ Pre-Cladding/RAB™ Board with 6/40 x 2.8mm HardieFlex™ nail into lintel and stud. For further information refer to NZS 3604

使用6/40 x 2.8mm Hardie™ Flex钉将25 x 1mm的铁片固定在HomeRAB™ 预置垫层/RAB™ 板上方，钉入门梁和墙筋中。 有关更多信息，请参阅NZS 3604

Fix studs together with 2/90mm nails at 400mm cenres

使用2/90mm钉间隔400mm固定墙筋

HomeRAB™ Pre-Cladding/RAB™ Board

HomeRAB™ 预置垫层/RAB™ 板

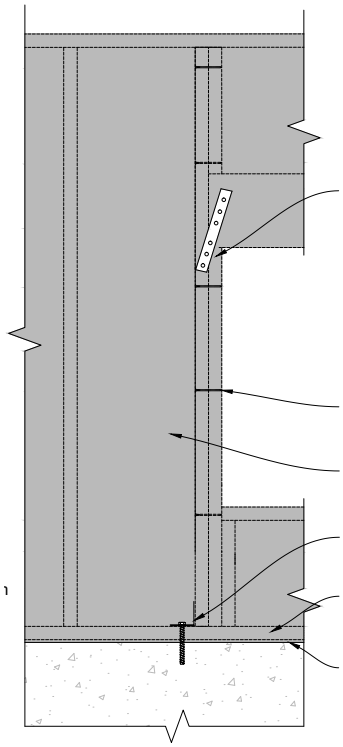
25 x 1mm strap fixed over HomeRAB™ Pre-Cladding/RAB™ Board with 6/40 x 2.8mm HardieFlex™ nail into floor joist and stud. For further information refer to NZS 3604. Alternatively use proprietary 7.5kN stud to bottom plate connection

使用6/40 x 2.8mm Hardie™ Flex钉将25 x 1mm的固定铁片固定在HomeRAB™ 预置垫层/RAB™ 板上方，钉入地板托梁和墙筋中。有关更多信息，请参阅NZS3604。或者使用专有的7.5kN墙筋与底板连接

Bottom plate 底板

Floor joist 地板托梁

Horizontal joint 横向连接



25 x 1mm strap fixed over HomeRAB™ Pre-Cladding/RAB™ Board with 6/40 x 2.8mm HardieFlex™ nail into lintel and stud. For further information refer to NZS 3604

使用6/40 x 2.8mm Hardie™ Flex钉将25 x 1mm的铁片固定在HomeRAB™ 预置垫层/RAB™ 板上方，钉入门梁和墙筋中。有关更多信息，请参阅NZS 3604

Fix studs together with 2/90mm nails at 400mm cenres

使用2/90mm钉间隔400mm固定墙筋

HomeRAB™ Pre-Cladding/RAB™ Board

HomeRAB™ 预置垫层/RAB™ 板

Proprietary 7.5kN stud to bottom plate connection. Alternatively use strap under plate as per figure 8.12 of NZS3604

专有的7.5kN墙筋到底板的连接。或者根据NZS3604的图8.12在板下使用铁片固定

Bottom plate 底板

HomeRAB™ Pre-Cladding/RAB™ Board must be 15mm minimum below bottom plate

HomeRAB™ 预置垫层/RAB™ 板须低出底板至少15mm

5.3 Flashings 防水

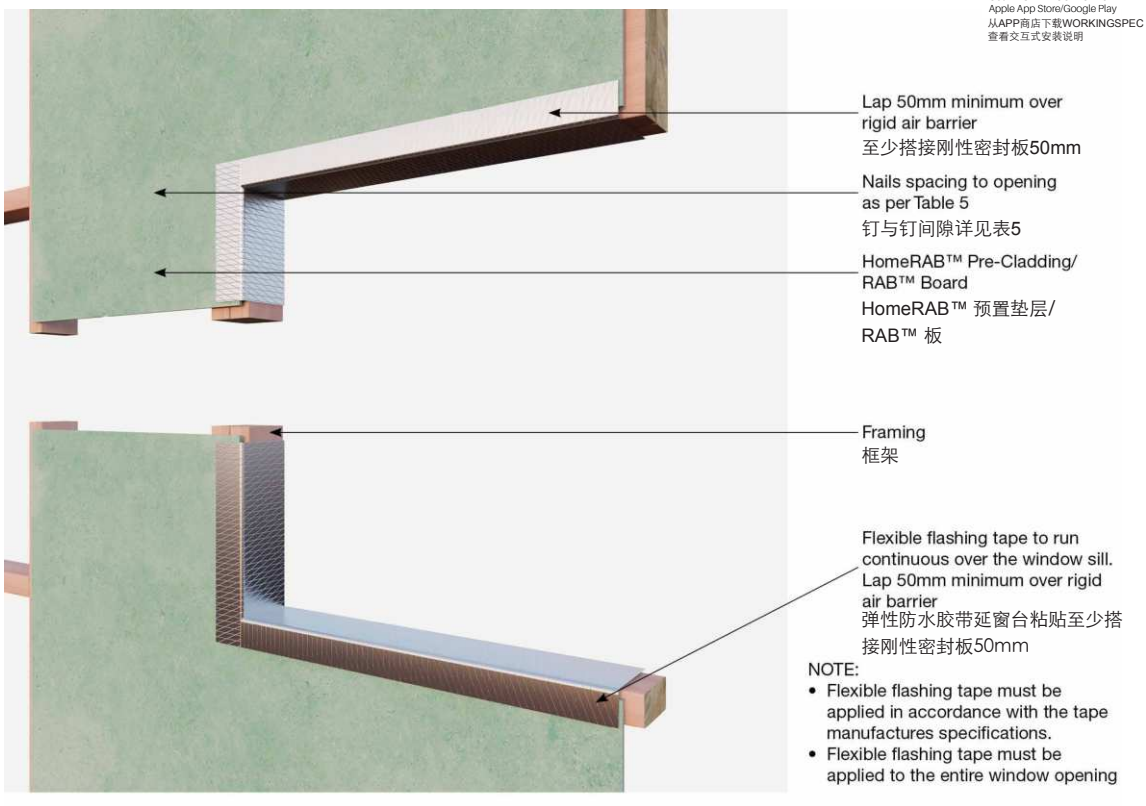
The exposed timber framing around the window jamb can be covered with a 150mm minimum wide flashing tape or a sealing tape refer to Figures 19 and 20. The window sill must be dressed with a 150mm minimum wide flashing tape. The tape is sealed over the face of the HomeRAB Pre-Cladding or RAB Board.

窗框周围裸露的木框可以用最窄150mm的防水胶带或密封胶带做防水处理，请参见图19和图20。窗台必须用最窄150mm的防水胶带包裹。 胶带需要密封在HomeRAB预置垫层和RAB板的表面上。

The HomeRAB Pre-Cladding or RAB Board surface must be clean, free of grime and dry before the tapes are applied. Some tape manufacturers require a primer tak spray be applied before fixing the tapes to the board surface to achieve a better tape adhesion. Check with the tape manufacturers for further information regarding minimum requirements etc.

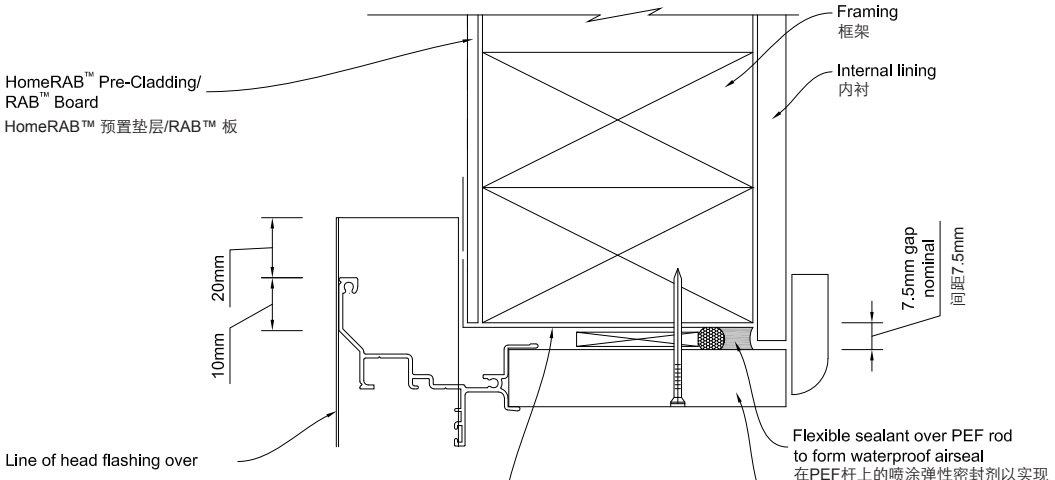
粘贴胶带之前，HomeRAB预置垫层和RAB板的表面须保持清洁、无尘干燥。一些胶带制造商要求在将胶带固定到密封板表面之前先喷涂底漆，以实现更好的胶带附着力。请与胶带制造商联系，以获取相关最低要求等更多信息。

Figure 19: Window sealing with flashing tapes
图19：防水胶带密封窗



备注：
- 弹性防水胶带必须遵循制造商的要求
- 必须在窗户的所有开口处粘贴弹性防水胶带

Figure 20: Window jamb with flashing tape
图20：防水胶带密封窗框



Note:

- For wind zones above VH and up to 2.5kPa wind pressure use RAB Board only.
- For higher wind pressures refer to cladding and window manufacturer.

备注：

- 对于高于VH且风压高达2.5kPa的风区，仅可使用RAB板。
- 有关更高的风压，请参考外墙和窗户制造商要求。

Figure 21: HomeRAB Pre-Cladding or RAB Board to standard soffit
图21：HomeRAB预置垫层/RAB板与标准拱腹

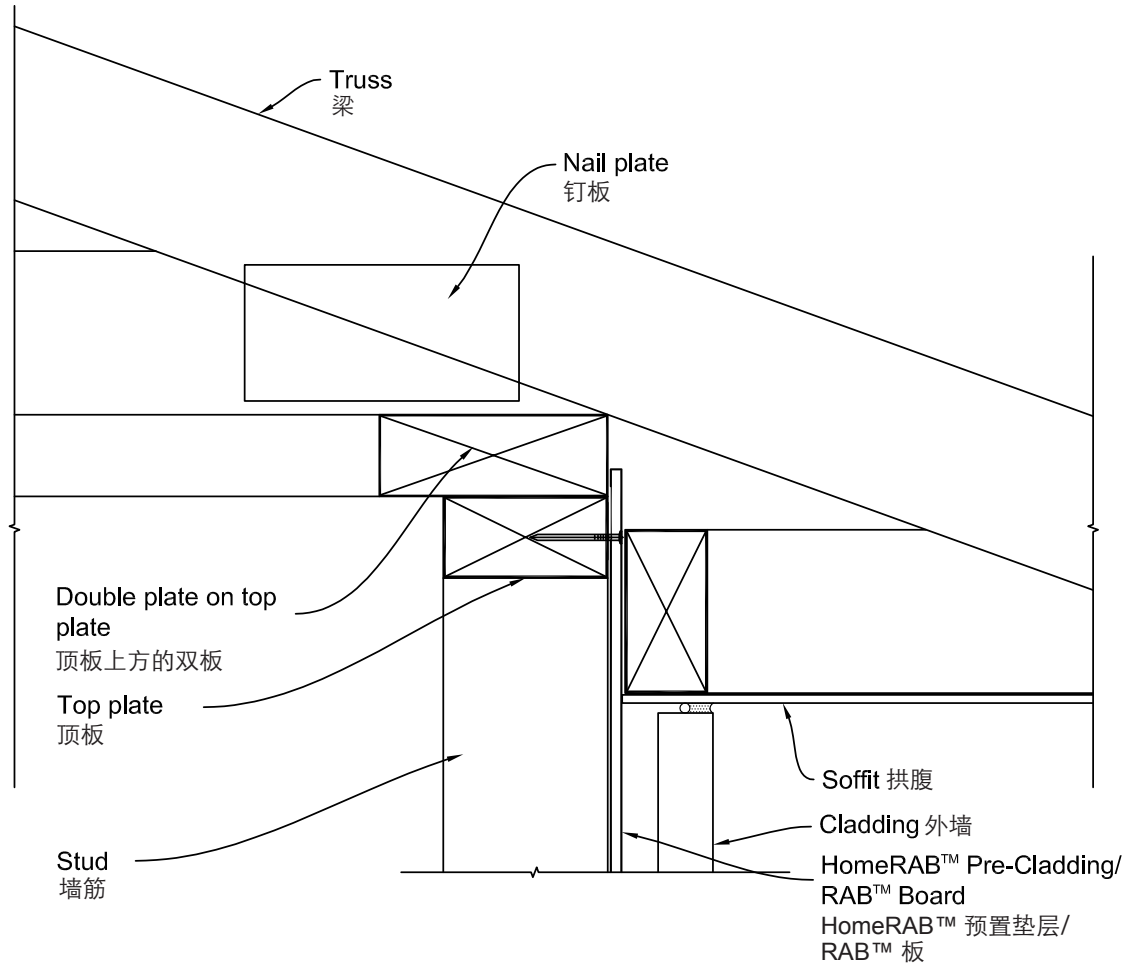
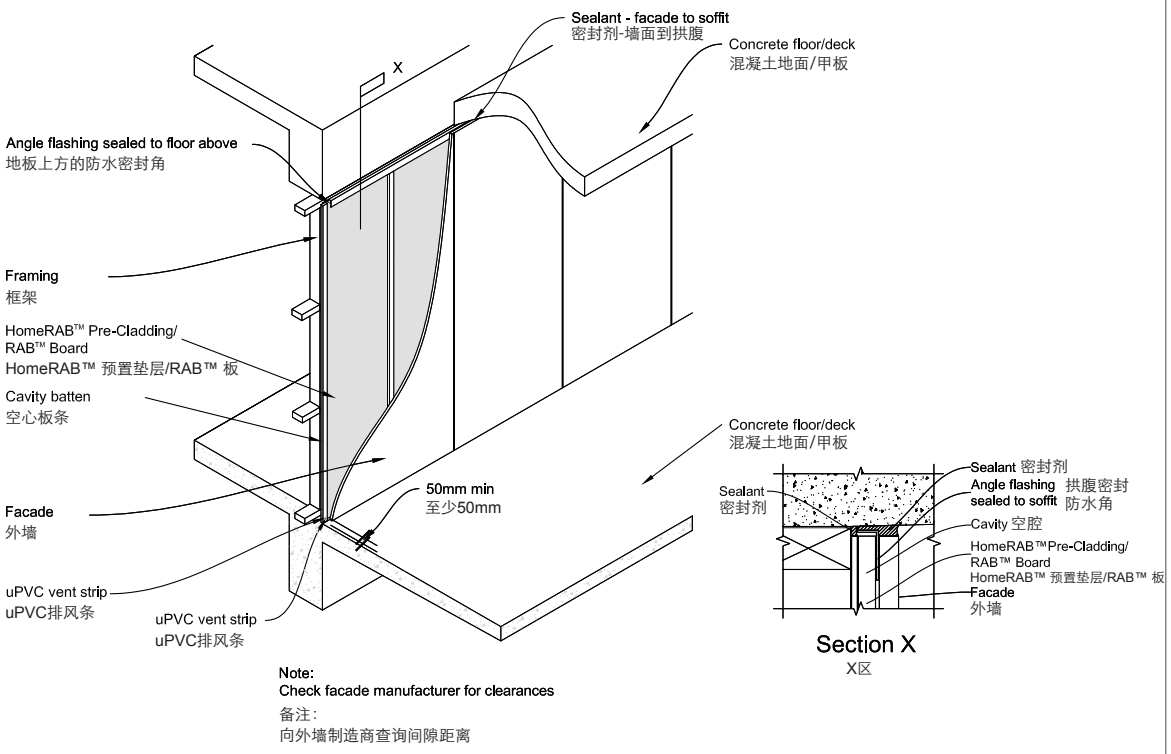


Figure 22: RAB Board to concrete slab junction
图22：RAB板与混凝土板连接



Note:
Check facade manufacturer for clearances
备注：
向外墙制造商查询间隙距离

5.3.1 Penetrations 穿板

The pipe penetrations through HomeRAB Pre-Cladding and RAB Board must be sealed securely using a flexible flashing tape. Maintain a 100mm minimum cover of flashing over the board around the penetration.

穿过HomeRAB预置垫层和RAB板的管道必须使用弹性防水胶带进行完全密封。在管道穿孔周围使用至少100mm的防水胶带进行密封。

5.3.2 Balustrade to wall junctions 栏杆与墙的连接

The junctions between balustrades to wall should be appropriately flashed. Refer to E2/AS1 of the NZBC for information and flashing details.

栏杆与墙之间的连接处需要做防水处理。有关信息和防水细节要求，请参阅NZBC的E2 / AS1的规定。

Figure 23: Pipe penetration through HomeRAB Pre-Cladding and RAB Board
图23：穿过HomeRAB预置垫层和RAB板的管道

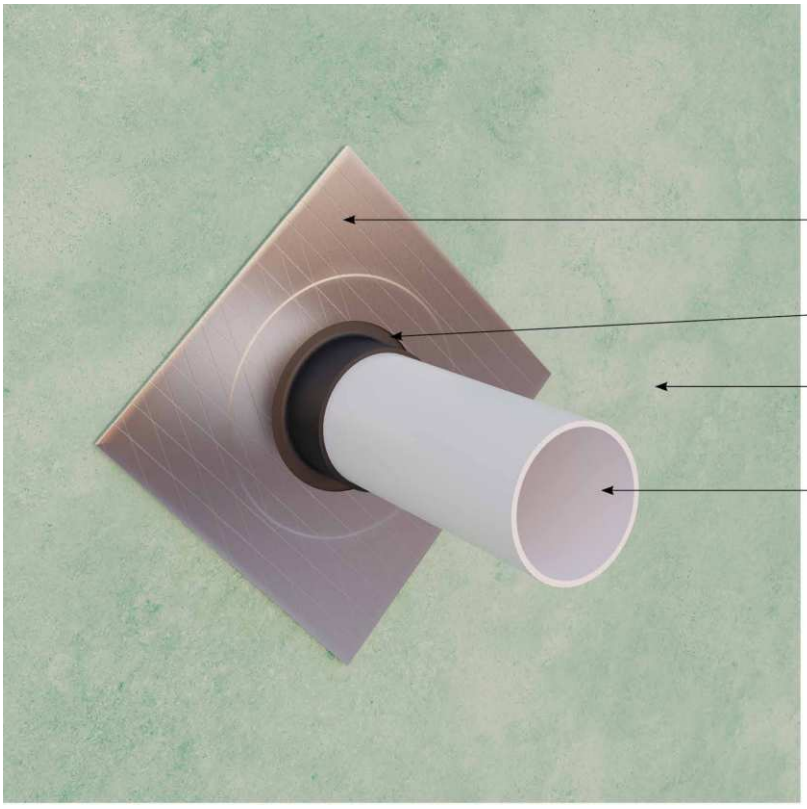


Figure 24: Flashing at balustrade
图24：栏杆防水

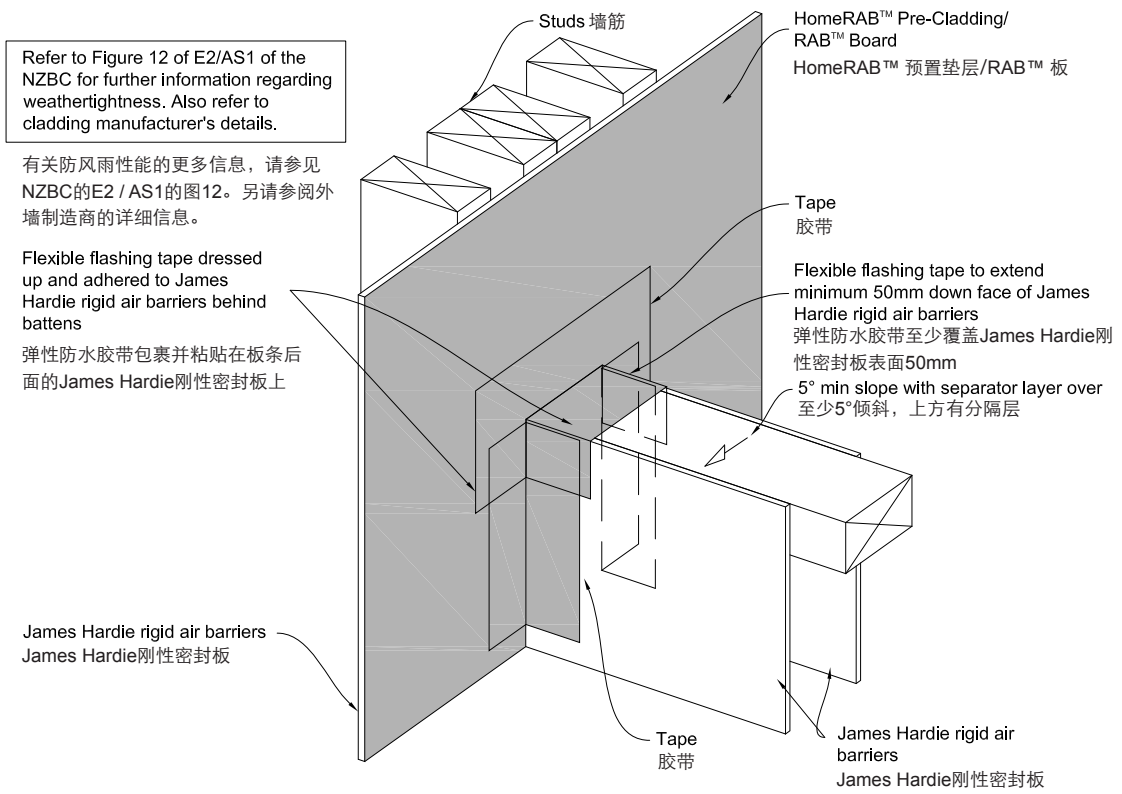
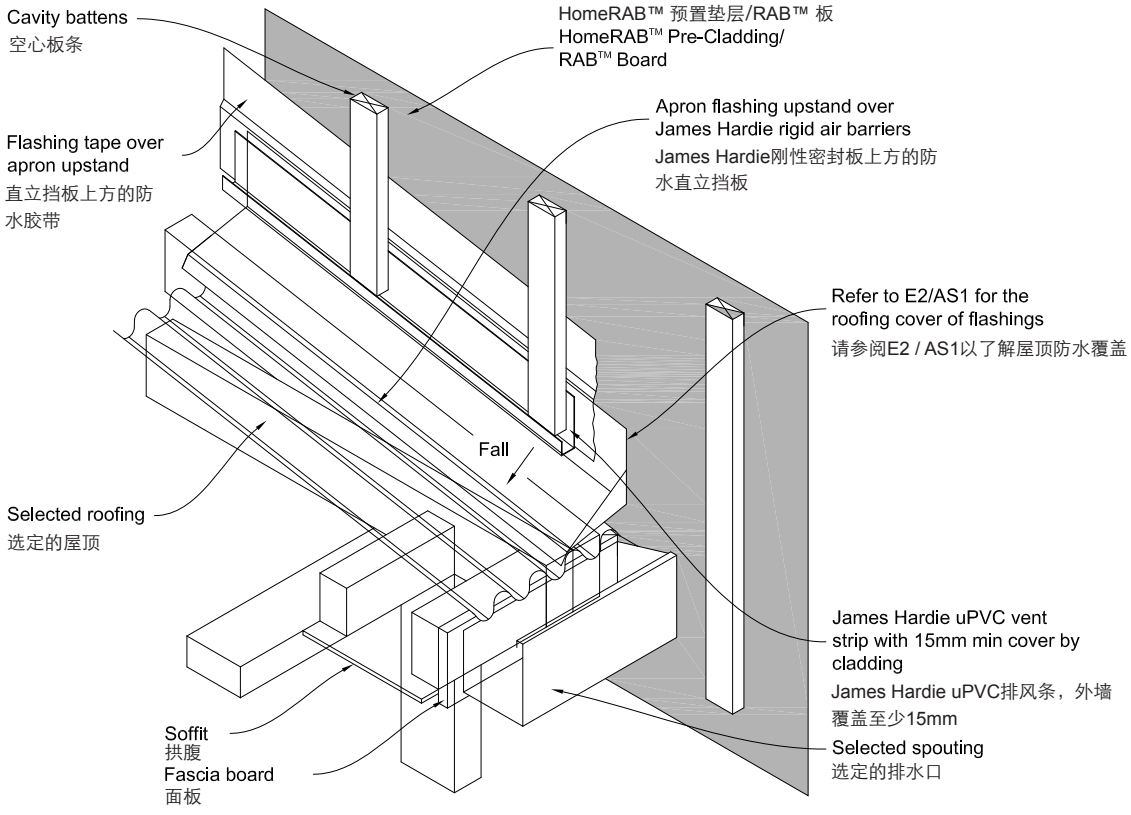


Figure 25: Apron flashing
图25：挡板防水



5.3.3 Inter-storey deflections 层间偏转

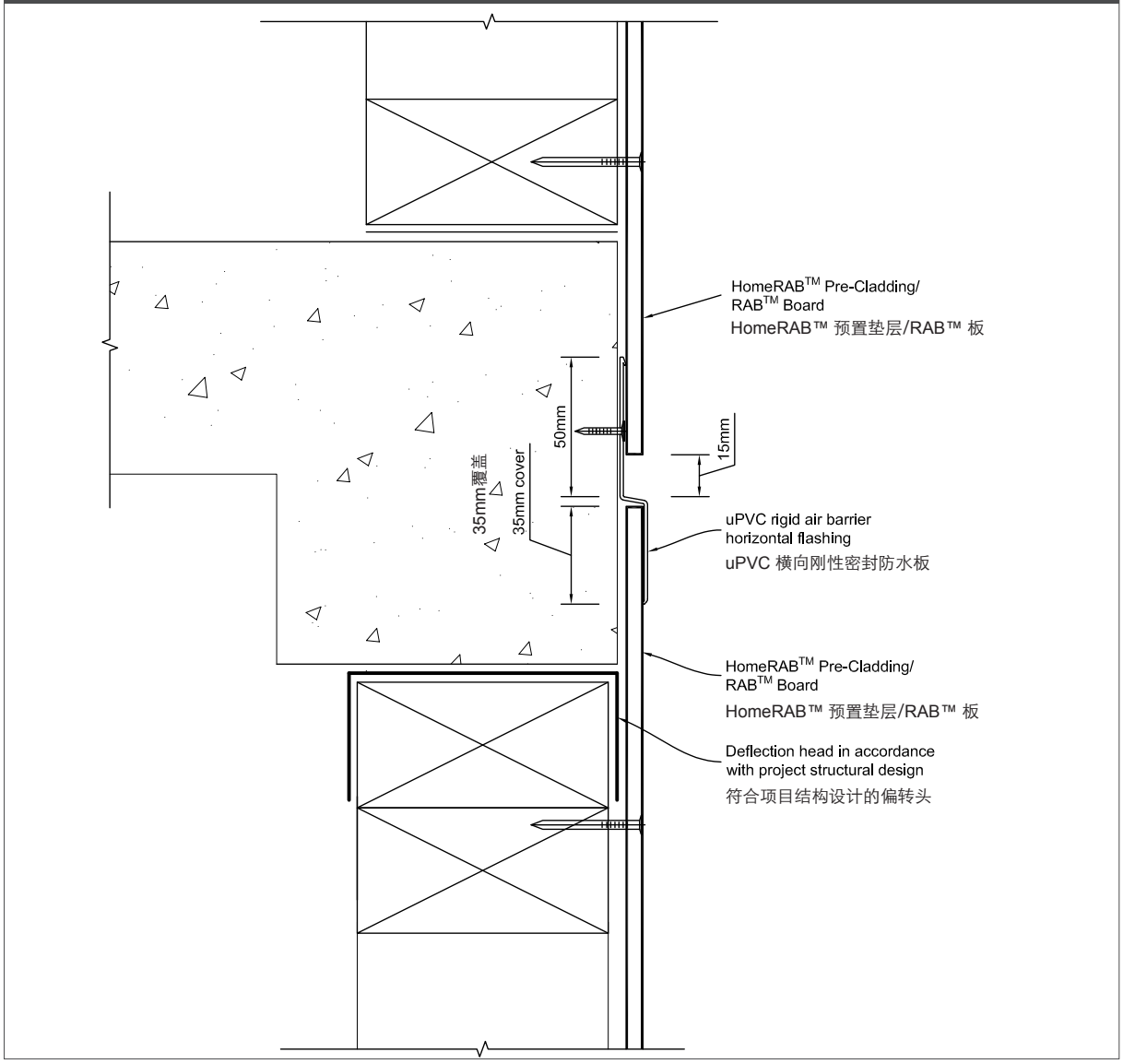
When installing HomeRAB Pre-Cladding or RAB Board, a horizontal joint must be incorporated between sheets at each floor level to accommodate for the inter-storey deflections. Refer to Figures 9 and 10.

在安装HomeRAB预置垫层和RAB板时，每个楼层的板材之间必须采用横向连接，以适应层间偏转。请参阅图9和图10。

For the specific engineering design (SED), where structures are subject to high wind pressures and designed with inter-storey seismic deflections, the use of 6mm or 9mm RAB Board is recommended. RAB Board, when fixed as per this installation manual, is readily capable of withstanding Serviceability Limit State (SLS) deflections up to span/180. For structures where greater inter-storey seismic deflections are expected, a deflection head should be used, as per the project structural engineer's design and detailing. Refer to Figure 26.

对于特定的工程设计（SED），在结构承受高风压并且设计需要考虑层间地震挠曲的情况下，建议使用6mm或9mm的RAB板。 按照本安装手册进行固定的RAB板，能够承受最大span / 180的可维修性极限状态（SLS）挠曲。对于预期层间地震挠度会更大的建筑，应根据项目结构工程师的设计和详细说明使用偏转头。 请参阅图26。

Figure 26: Deflection head
图26：偏转头



6 Bracing 支撑

HomeRAB Pre-Cladding and RAB Board are suitable for bracing applications. Given below are various bracing systems that have been tested and the bracing values published. Refer to bracing system details for bracing installation or refer to James Hardie Bracing Design Manual for further information.

HomeRAB预置垫层和RAB板可以用于支撑。不同支撑系统经过测试的支撑值/指数请见下文。有关支撑安装的信息，请参阅支撑系统详细信息；还需更多信息，请参阅《James Hardie支撑设计手册》。

6.1 Bottom Plate Fixing/Hold Down Restraints 底板固定/压力固定

The timber framing must be fixed in accordance to table 8.19 of the NZS 3604. Additional hold down restraints must be provided as per each bracing system's requirements. Refer to bracing systems details.

木框架必须按照NZS 3604的表8.19进行固定。必须根据每个支撑系统的要求提供额外的压力固定。请参阅支撑系统详细信息。

6.1.1 Concrete foundation 混凝土基础

Pydra brace anchor kits or GIB Handibrac® with a 15kN minimum uplift capacity holding down bolt can be used as end restraints.

具有最小15kN起重能力的Pydra支撑锚套件或GIB Handibrac®可以用作末端的固定。

6.1.2 Timber foundation 木制基础

Pydra brace anchor kits or GIB Handibrac® with a M12 x 150mm holding down bolt can be used as end restraints. Alternatively, holding down straps as per the NZS 3604 can also be used.

带有M12 x 150mm压紧螺栓的Pydra支撑锚套件或GIB Handibrac®可用作末端固定。 另外，也可以使用符合NZS 3604规定的固定条。

6.2 Fastener Durability and Size 紧固件耐久性及尺寸

Coach screws and holding down (HD) bolts, where used, must be M12 hot-dipped galvanised steel fitted with 50 x 50 x 3mm galvanised washers. The holding down bolts and washers must have a protective coating as per Table 4.2 of the NZS 3604.

如果使用方头螺钉和底角螺栓，必须使用M12热浸镀锌钢材料，并配有50 x 50 x 3mm镀锌垫圈。底角螺栓和垫圈必须符合NZS 3604的表4.2规定，有保护涂层。

Pre-Claddings 预置垫层:

All nails for fixing the pre-cladding bracing panels in Zone D must be Grade 304/316 stainless steel in accordance with the NZS 3604.

在D区中，用于固定预置垫层支撑面板的所有钉子必须是符合NZS 3604的304/316级别的不锈钢钉。

All nails for fixing the pre-cladding bracing panels for Zone B and Zone C can be Grade 304/316 stainless steel or hot dipped galvanised steel nail.

用于固定B区和C区预置垫层支撑面板的所有钉子，可以用304/316级不锈钢或热浸镀锌钢钉。

Note: Fastener sizes are given in the respective details section for each product or system.

备注：每个产品或系统的详细信息部分均提供了所需的螺母尺寸。

6.3 Sheet Nailing 板钉

Nails can be hand driven or gun nailed at a minimum edge distance as shown in the bracing details within this specification. This also applies to dimensions from corners, vertically and horizontally. The sheets must be held hard against the framing during nailing to minimise sheet break-out at the back of sheet. Always drive all nails flush with the sheet surface. For sheet/panel systems do not punch the nail below the surface as it reduces the nail's holding power.

可以手打或用钉枪，将钉子打到如本手册中的支撑详细信息所示的最小边缘距离。最小边缘距离也适用纵向和横向的夹角。在打钉时，必须用力将板顶在框架上，以最大程度地减少板背面的破裂。始终保证所有钉子与板的表面齐平。对于板材/面板系统，不要将钉子钉到低于板面，因为这会降低钉子的抓着力。

Fix all sheets from the centre working towards outer edges to avoid drumminess. Fixings at 150mm maximum centres when hand nailing.

将所有板从中心朝外边缘固定，以避免敲击产生鼓声效应。 用手打钉时，需保持钉子间距最大150mm。

Gun nails can be used on some bracing systems with fixings at 100mm maximum centres. Must use a 6.85mm∅ round head coil nail with a pneumatic nail gun. **Refer to bracing tables for hand or gun nail options available.**

某些支撑系统，在使用钉枪时允许钉子最大间距100mm。必须使用气动钉枪和6.85mm ∅型圆头线圈钉。**有关可用的手钉或枪钉选项，请参阅支撑表。**

6.4 Sheet Orientation 板材方向

For the bracing systems specified in this manual, all flat sheets must be fixed vertically with the exception of Villaboard™ Lining, which can either be fixed vertically or horizontally as per the bracing systems details.

对于本手册中指定的支撑系统，必须将所有平板纵向固定，但Villaboard™ 衬板除外，根据支撑系统的详细说明，该衬板可以纵向或横向固定。

Full-height sheets must be used for walls up to 3000mm in height. When bracing walls height exceed 3000mm, sheet jointing is acceptable. Only one horizontal sheet joint is permitted within the element height. The maximum height of bracing wall is limited to 4800mm.

高度不超过3000mm的墙壁必须使用整块板材。当支撑壁高度超过3000mm时，可以使用板材拼接。元件高度内仅允许一个横向板材拼接。支撑壁的最大高度限制为4800mm。

A site cut bracing sheet must be minimum 300mm wide when used in a bracing element. Refer to Figure 16.

当在支撑元件中使用时，现场切割的支撑板最小为300mm宽。参见图16。

Always ensure that the sheet joint is on the centre line of the stud or nog to achieve sufficient cover of fixings.

始终确保板材拼接处在墙筋或木块的中心线上，以实现足够的固定覆盖面积。

In internal walls the lining sheet used for bracing must stop 6mm above the finished floor.

在内墙中，用于支撑的衬板必须截止在完成的地板上方6mm处。

6.5 Service Penetrations 维护孔

Holes/penetrations up to 100 x 100mm positioned no closer than 200mm of the edge or another penetration, are allowed for services. Maximum of two service penetrations are recommended per sheet.

钻孔时，孔洞最大面积100 x 100mm且位置不得距离其他钻孔或边缘小于200mm。每张板建议最多钻两个维护孔。

No window/door penetrations are allowed within the bracing elements.

支撑元件内不允许通窗户/门。

Table 7 表7

HomeRAB™ Pre-Cladding vertically fixed ｜纵向固定的HomeRAB™ 预置垫层

System number 系统编号	Length 长度	Hold down 固定	Refer figures 参考图表	BU/M		kN/m		Fixing method 固定方式	
				Wind 风	Earthquake 地震	Wind 风	Earthquake 地震	Hand nail 手打	Gun nail 钉枪
Hpn	1200	N	27	67	71	3.3	3.5	√	✕
HP	400	Y	28,32,33,34	85	91	4.2	4.5	√	E
	600	Y	28,32,33,34	99	103	4.9	5.1	√	E
	1200 to 2400	Y	29,32,33,34	133*	104	6.6	5.2	√	E
	2400 to 4800	Y	29,32,33,34	141*	67	7.0	3.3	√	E

*A limit of 120BUs/m maximum applies to timber floors and 150BUs/m maximum to concrete floors built as per the NZS 3604: 2011 unless a specific engineering design is carried out to ensure the uplift force generated by bracing elements does not exceed the maximum limit for each floor type.

*根据NZS 3604：2011的规定，木地板的最大极限值为120BUs/m，混凝土地板的最大极限为150BUs/m，除非进行了特殊的工程设计，需确保支撑元件产生的上拉力不超过每种楼层类型的最大极限。

Table 8

HomeRAB™ Pre-Cladding vertically fixed with 10mm GIB® Standard plasterboard
HomeRAB™ 预置垫层与10mm GIB®标准石膏板纵向固定

System number 系统编号	Length 长度	Hold down 固定	Refer figures 参考图表	BU/M		kN/m		Fixing method 固定方式	
				Wind 风	Earthquake 地震	Wind 风	Earthquake 地震	Hand nail 手打	Gun nail 钉枪
HPg	400	Y	28,30,32,33,34	90	98	4.5	4.9	√	E
	600	Y	28,30,32,33,34	127*	136*	6.3	6.8	√	E
	1200 to 2400	Y	29,31,32,33,34	164*	138*	8.2	6.9	√	E

*A limit of 120BUs/m maximum applies to timber floors and 150BUs/m maximum to concrete floors built as per the NZS 3604: 2011 unless a specific engineering design is carried out to ensure the uplift force generated by bracing elements does not exceed the maximum limit for each floor type.

*根据NZS 3604：2011的规定，木地板的最大极限值为120BUs/m，混凝土地板的最大极限为150BUs/m，除非进行了特殊的工程设计，需确保支撑元件产生的上拉力不超过每种楼层类型的最大极限。

Table 9

RAB™ Board 6mm or 9mm | RAB™ 板6mm或9mm									
System number 系统编号	Length 长度	Hold down 固定	Refer figures 参考图表	BU/M		kN/m		Fixing method 固定方式	
				Wind 风	Earthquake 地震	Wind 风	Earthquake 地震	Hand nail 手打	Gun nail 钉枪
JHDn	1200	N	27	118	102	5.9	5.1	√	×
JHD	400	Y	28,32,33,34	83	107	4.1	5.3	√	E & P
	600	Y	28,32,33,34	99	107	4.9	5.3	√	E & P
	1200 to 2400	Y	29,32,33,34	154*	140*	7.7	7.0	√	E & P
	2400 to 4800	Y	29,32,33,34	133*	150*	6.6	7.4	√	E & P
JHDg	600	Y	6,8,13,14,15	106	121	5.3	6.0	√	E & P

*A limit of 120BUs/m maximum applies to timber floors and 150BUs/m maximum to concrete floors built as per the NZS 3604: 2011 unless a specific engineering design is carried out to ensure the uplift force generated by bracing elements does not exceed the maximum limit for each floor type.

*根据NZS 3604：2011的规定，木地板的最大极限值为120BUs/m，混凝土地板的最大极限为150BUs/m，除非进行了特殊的工程设计，需确保支撑元件产生的上拉力不超过对于每种楼层类型的最大极限。

E = Ecko Pneumatic wireless coil nail

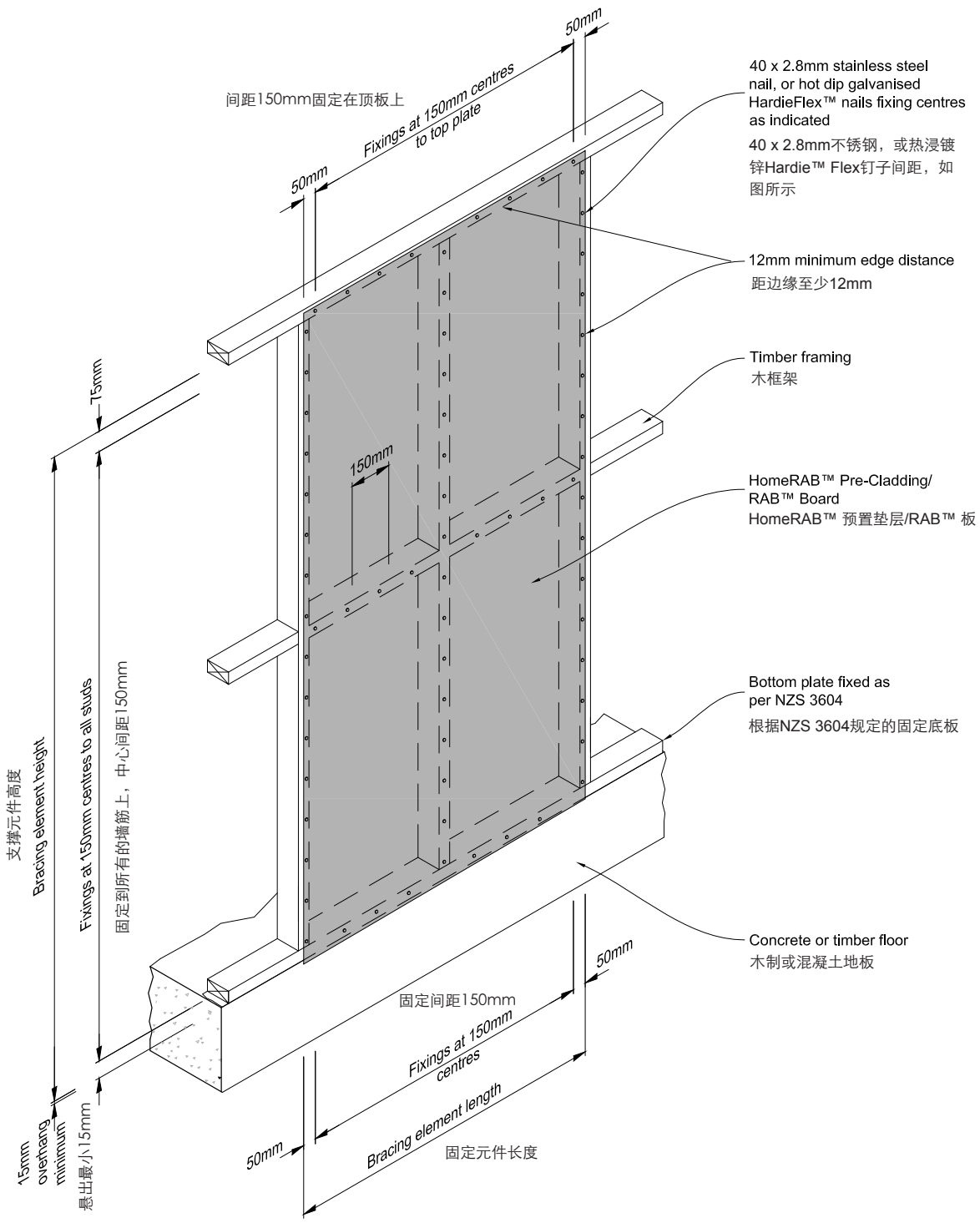
E = Ecko气动无线线圈钉

P = Paslode RounDrive ring shank nail

P = Paslode RounDrive环柄钉

Figure 27: 1200mm HomeRAB™ Pre-Cladding or RAB™ Board to concrete or timber floor - no hold down brackets

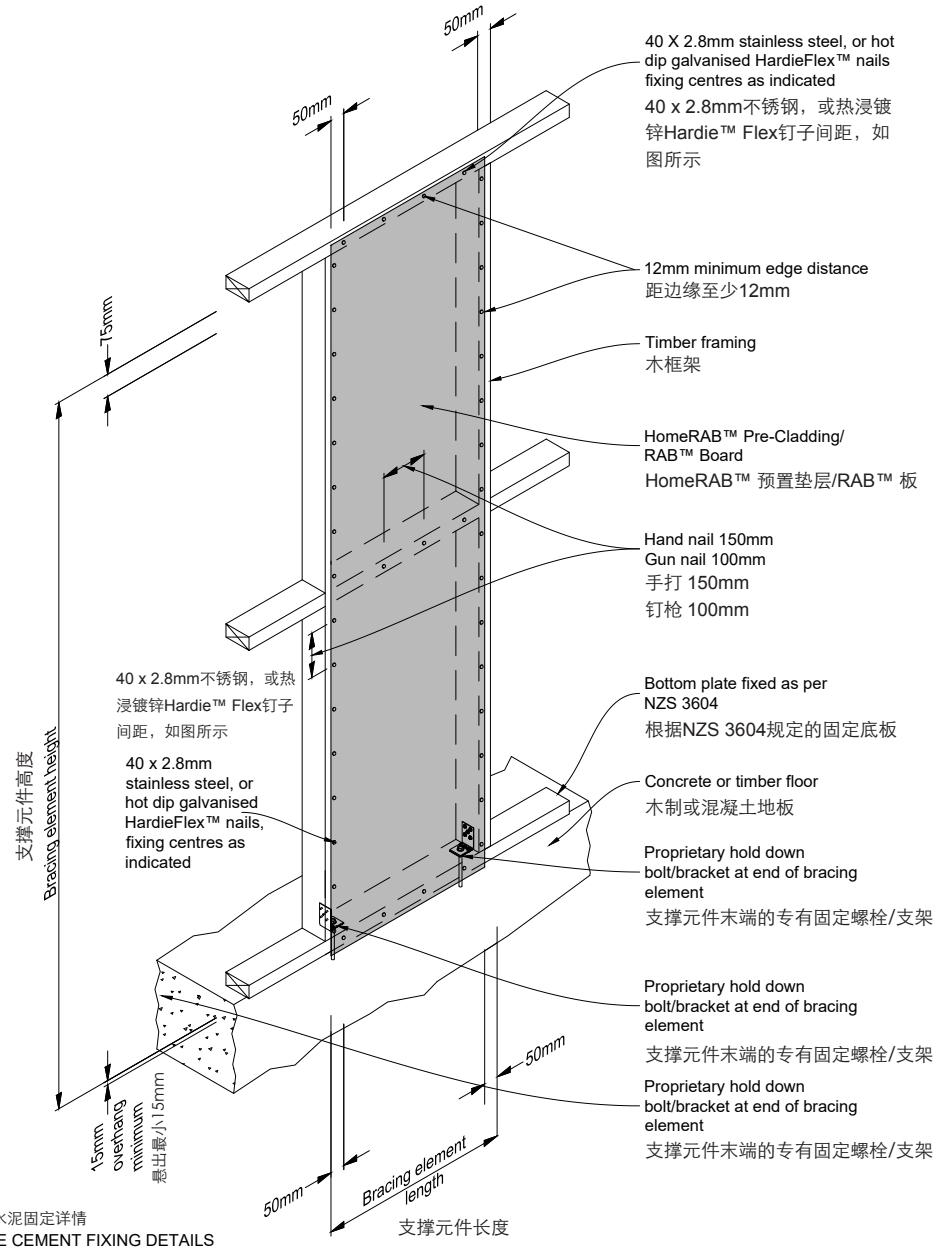
图27：1200mm HomeRAB™ 预置垫层/RAB™ 板与混凝土或木地板-不使用固定支架



Product 产品	System 系统	Minimum length 最小长度
HomeRAB™ Pre-Cladding | HomeRAB™ 预置垫层	HPn	1200mm
RAB™ Board | RAB™ 板	JHDn	1200mm

Figure 28: 400/600mm HomeRAB™ Pre-Cladding or RAB™ Board to concrete or timber floor

图28：400/600mm HomeRAB™ 预置垫层/RAB™ 板与混凝土或木地板



纤维水泥固定详情
FIBRE CEMENT FIXING DETAILS

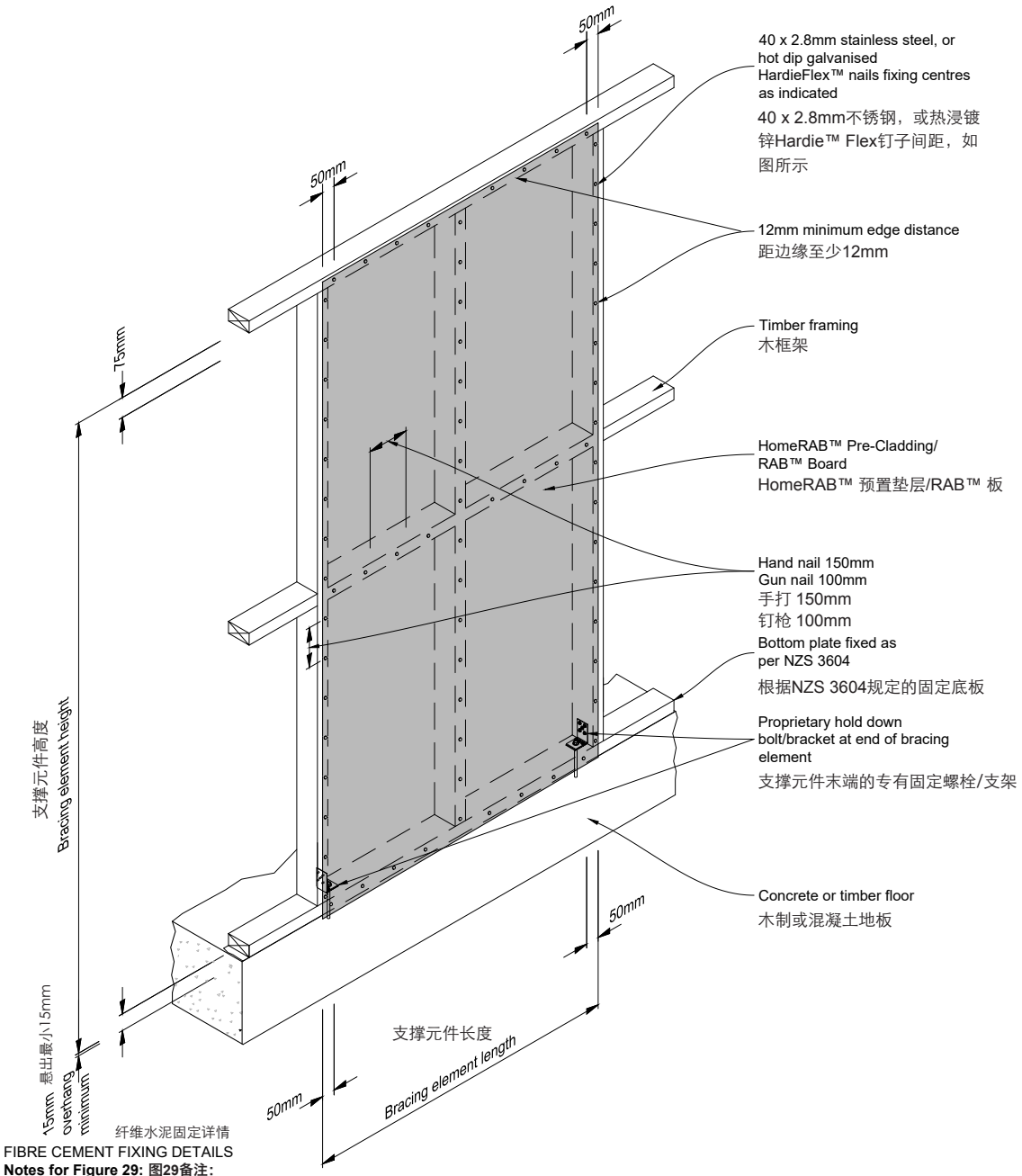
Notes for Figure 28: 图28备注：

- **Concrete floor** bottom plate fixing:- Ramset bracing anchor kit Concrete or GIB Handibrac® with 15kN anchor at each end of bracing element **混凝土地板底板固定**：-在支撑元件两端各带有15kN锚的Ramset支撑固定套件Concrete或GIB Handibrac®
- **Timber floor** bottom plate fixing:- Ramset bracing anchor kit Wood or GIB Handibrac® with a 12x150mm galvanised coach screw at each end of bracing element **木地板底板固定：**-在支撑元件两端各带有12x150mm镀锌螺丝的Ramset支撑固定套件Wood或GIBHandibrac®

Product 产品	System 系统	Minimum length 最小长度
HomeRAB™ Pre-Cladding | HomeRAB™ 预置垫层	HP	400 or 600mm
HomeRAB™ Pre-Cladding with 10mm GIB® Standard plasterboard HomeRAB™ 预置垫层和10mm GIB® 标准石膏板	HPg	400 or 600mm
RAB™ Board | RAB™ 板	JHD	400 or 600mm
RAB™ Board | RAB™ 板	JHDg	600mm

Figure 29: 1200mm HomeRAB™ Pre-Cladding or RAB™ Board to concrete or timber floor

图29：1200mm HomeRAB™ 预置垫层/RAB™ 板与混凝土或木地板



纤维水泥固定详情

FIBRE CEMENT FIXING DETAILS

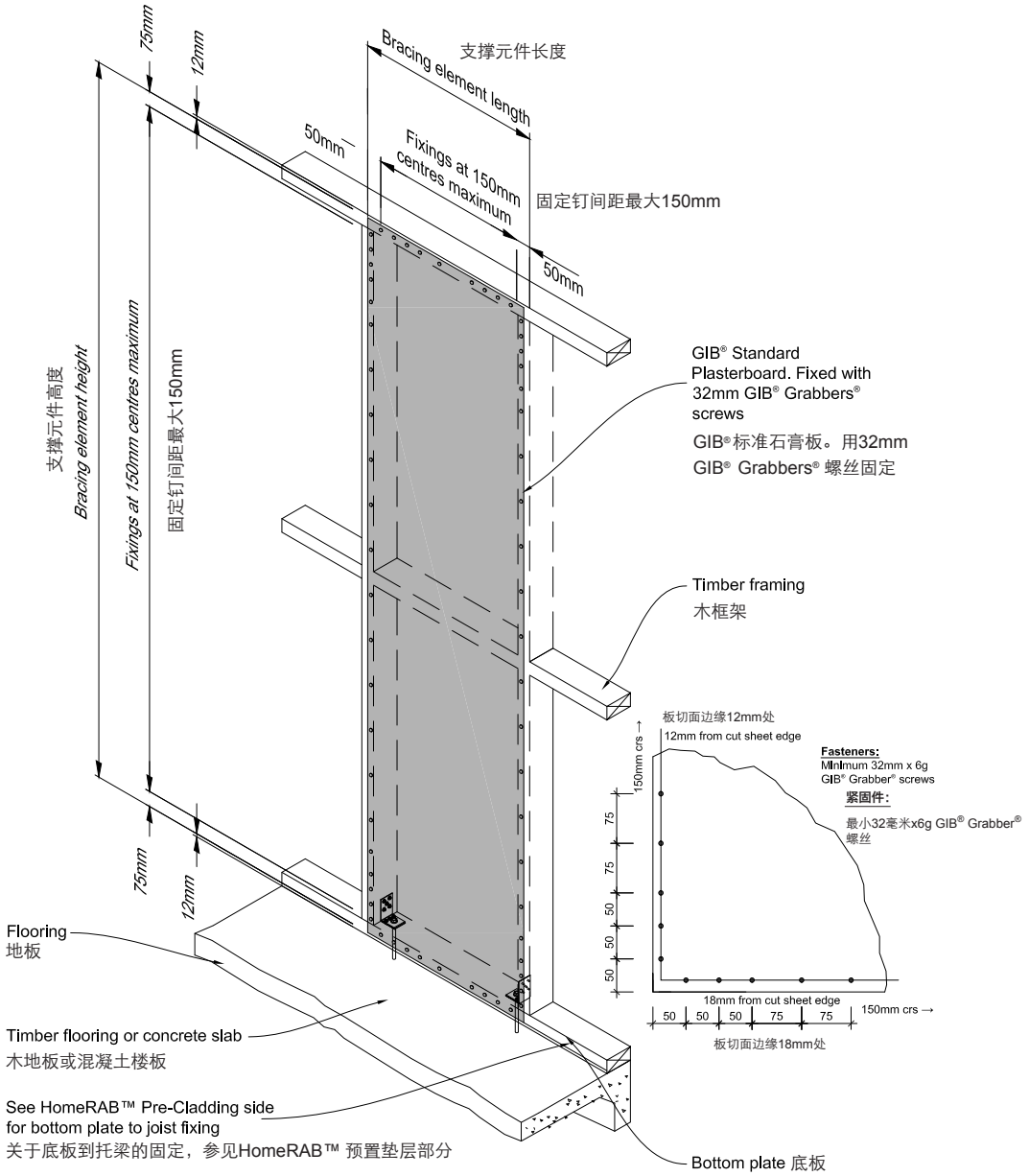
Notes for Figure 29: 图29备注：

- **Concrete floor** bottom plate fixing:- Ramset bracing anchor kit Concrete or GIB Handibrac® with 15kN anchor at each end of bracing element **混凝土地板底板固定**：-在支撑元件两端各带有15kN锚的Ramset支撑固定套件Concrete或GIB Handibrac®
- **Timber floor** bottom plate fixing:- Ramset bracing anchor kit Wood or GIB Handibrac® with a 12x150mm galvanised coach screw at each end of bracing element **木地板底板固定：**-在支撑元件两端各带有12x150mm镀锌螺丝的Ramset支撑固定套件Wood或GIBHandibrac®

Product 产品	System 系统	Minimum length 最小长度
HomeRAB™ Pre-Cladding | HomeRAB™ 预置垫层	HP	1200mm
HomeRAB™ Pre-Cladding with 10mm GIB® Standard plasterboard HomeRAB™ 预置垫层和10mm GIB® 标准石膏板	HPg	1200mm
RAB™ Board | RAB™ 板	JHD	1200mm

Figure 30: 400mm/600mm HomeRAB™ Pre-Cladding with 10mm GIB® Standard Plasterboard

图30：400mm / 600mm HomeRAB™ 预置垫层与10mm GIB® 标准石膏板



STANDARD GIB® FIXING DETAILS 标准GIB固定详情

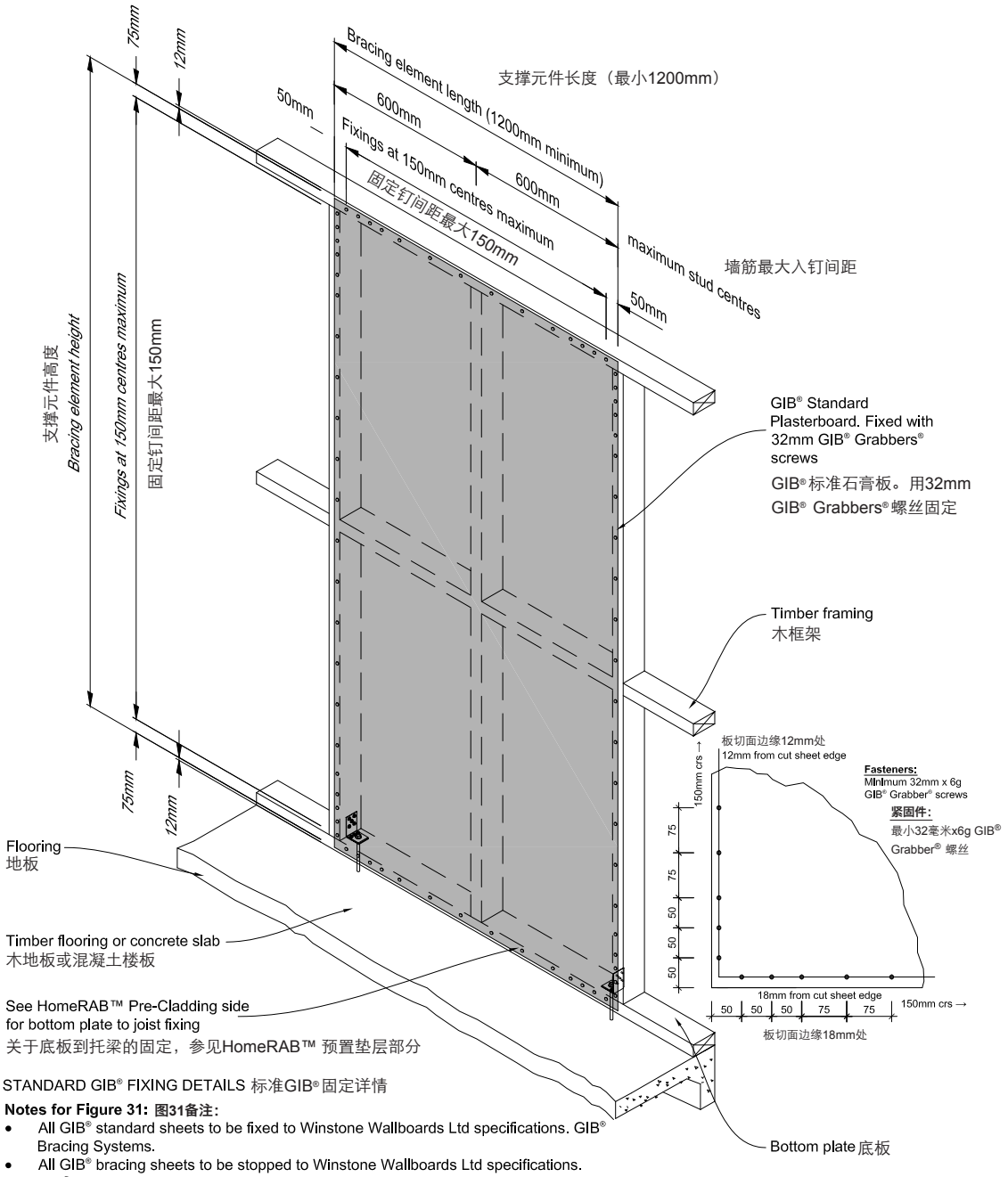
Notes for Figure 30: 图30备注：

- All GIB® standard sheets to be fixed to Winstone Wallboards Ltd specifications. GIB® Bracing Systems. 所有的GIB®标准板材都必须按照Winstone Wallboards Ltd的规格进行固定。GIB®支撑系统
- All GIB® bracing sheets to be stopped to Winstone Wallboards Ltd specifications. GIB® Site Guide. 所有GIB®支撑板均应停止，达到Winstone Wallboards Ltd的规格。GIB®网站指南
- Refer Winstone Wallboards Ltd specifications for edge distance.
  关于边缘距离请参考Winstone Wallboards Ltd的规格

Product 产品	System 系统	Minimum length 最小长度
HomeRAB™ Pre-Cladding | HomeRAB™ 预置垫层	HPg	400 or 600mm
RAB™ Board | RAB™ 板	JHDg	600mm

Figure 31: 1200mm HomeRAB™ Pre-Cladding with 10mm GIB® Standard Plasterboard

图31：1200mm HomeRAB™ 预置垫层与10mm GIB®标准石膏板



STANDARD GIB® FIXING DETAILS 标准GIB®固定详情

Notes for Figure 31: 图31备注:

- All GIB® standard sheets to be fixed to Winstone Wallboards Ltd specifications. GIB® Bracing Systems.
- All GIB® bracing sheets to be stopped to Winstone Wallboards Ltd specifications. GIB® Site Guide.
- Refer Winstone Wallboards Ltd specifications for edge distance.
- 所有的GIB®标准板材都必须按照Winstone Wallboards Ltd的规格进行固定。GIB®支撑系统
- 所有GIB®支撑板均应停止，达到Winstone Wallboards Ltd的规格。GIB®网站指南
- 关于边缘距离请参考Winstone Wallboards Ltd的规格

Product 产品	System 系统	Minimum length 最小长度
HomeRAB™ Pre-Cladding/GIB® Standard Plasterboard HomeRAB™ 预置垫层/ GIB® 标准石膏板	HPg	1200mm

Bracing Construction Figures
支撑施工图解

Figure 32: End bracket to concrete slab
图32：混凝土楼板与支架

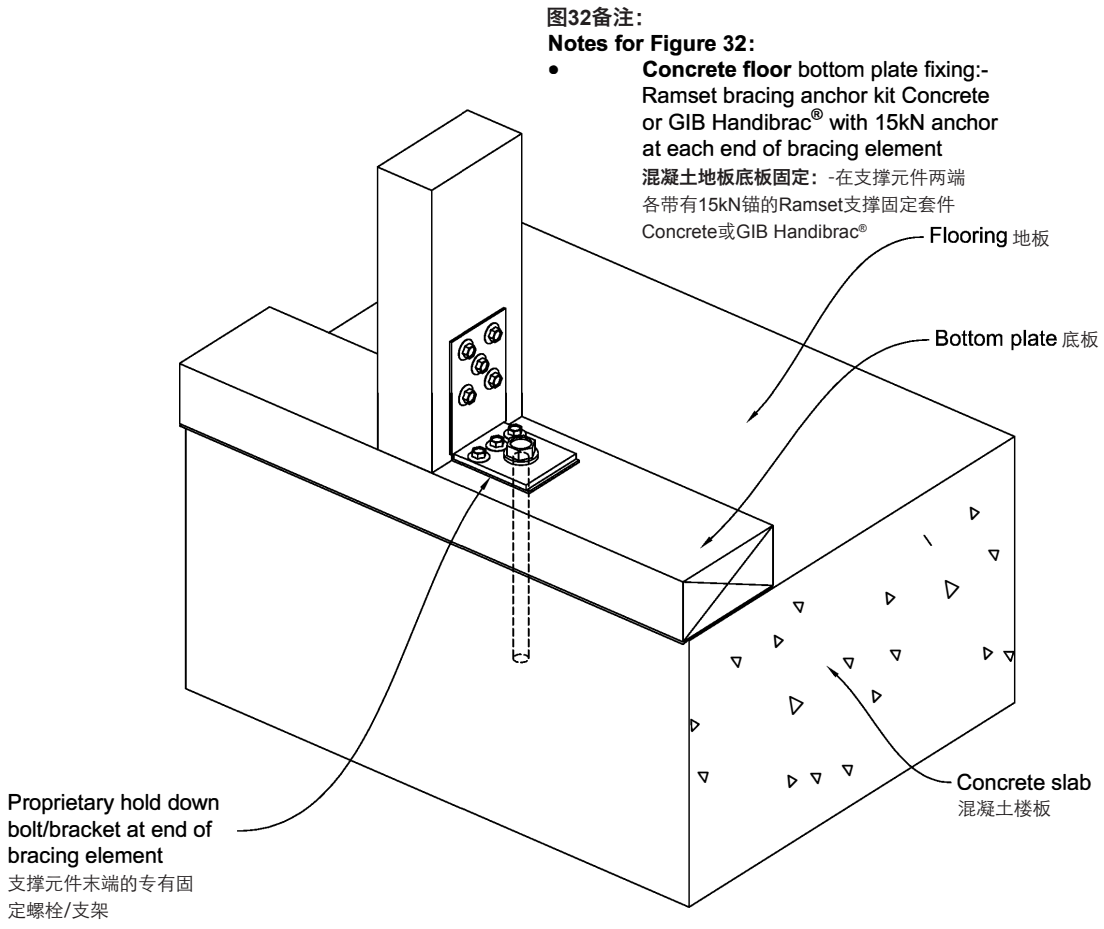


Figure 33: End bracket to timber joist
图33：木托梁与支架

图33备注：
Notes for Figure 33:

- **Timber floor** bottom plate fixing:- Ramset bracing anchor kit Wood or GIB Handibrac® with a 12x150mm galvanised coach screw at each end of bracing element

  木地板底板固定：-在支撑元件两端各带有12x150mm镀锌螺丝的Ramset支撑固定套件Wood或GIB Handibrac®

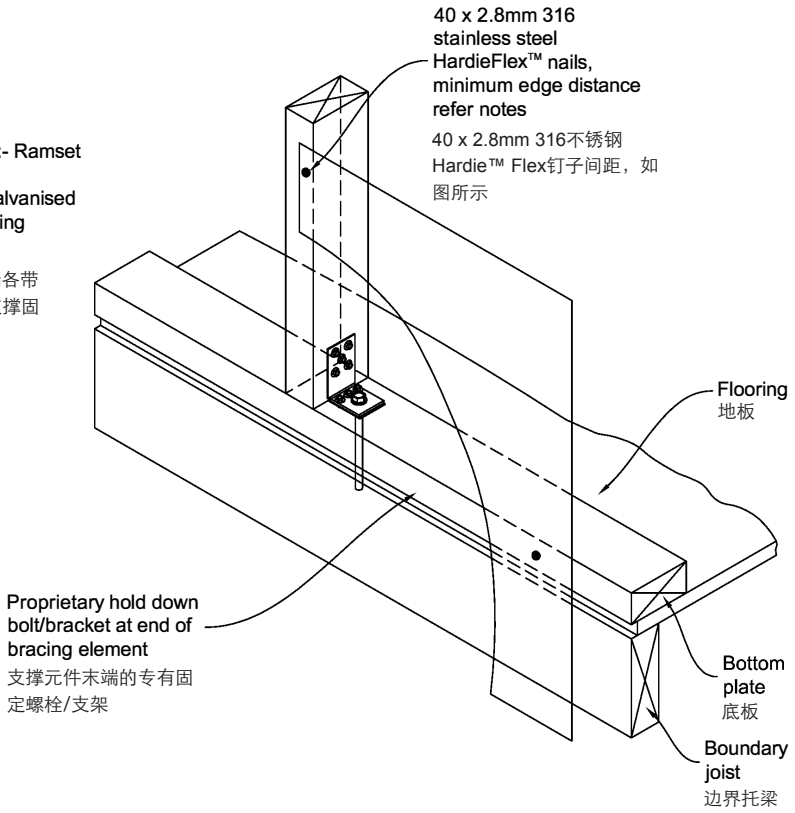
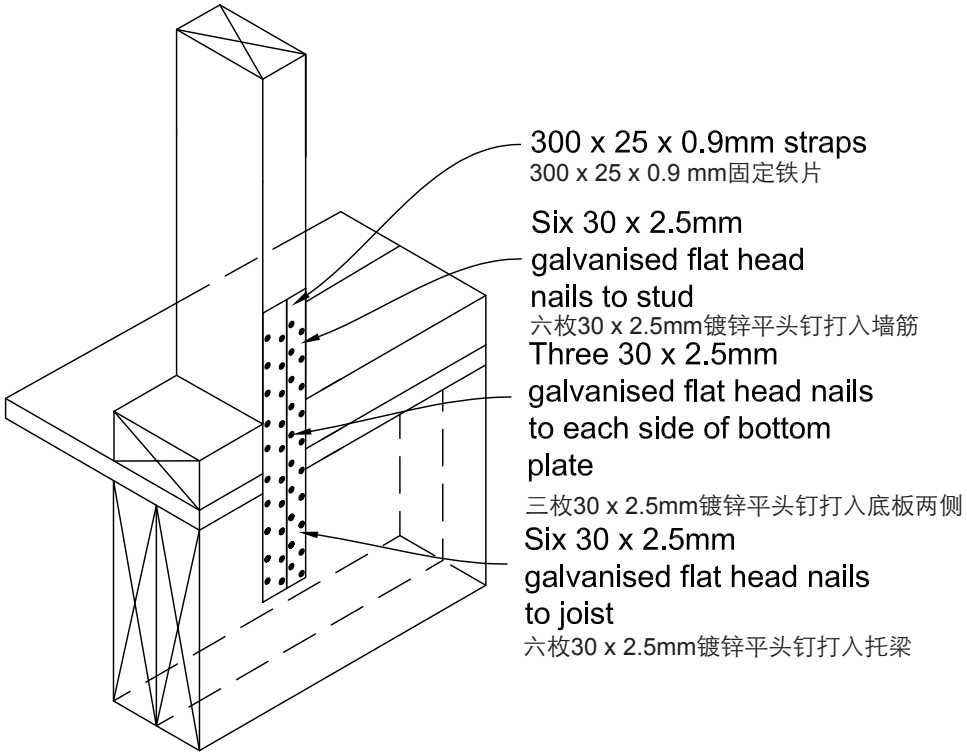
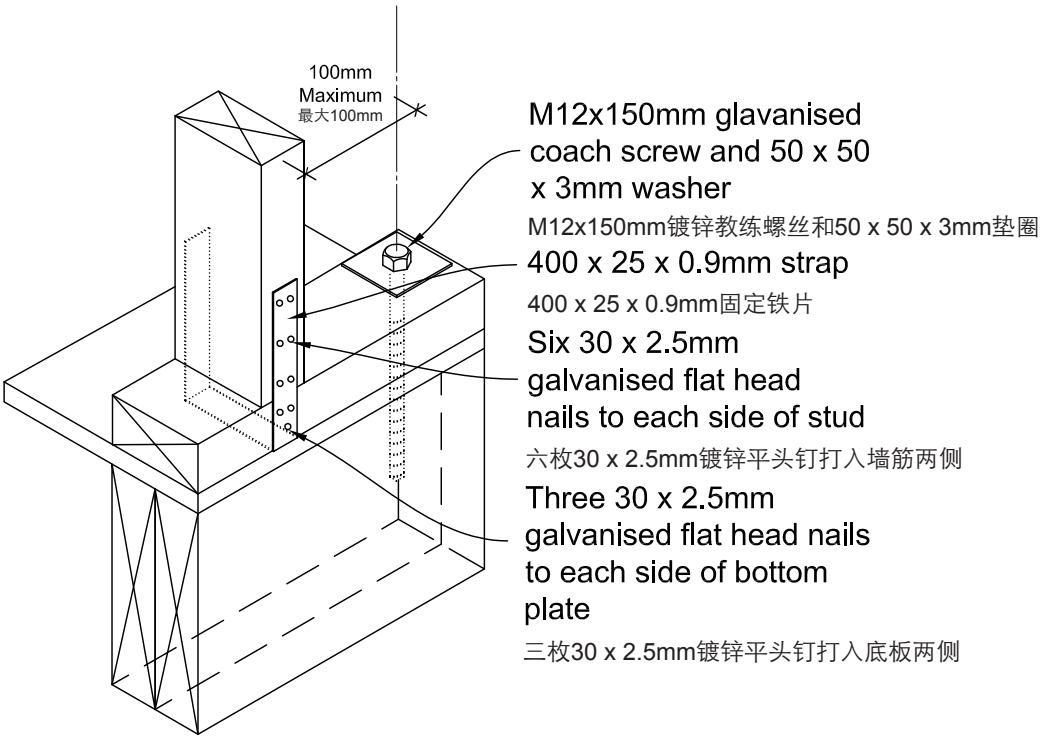


Figure 34: Hold down straps to timber joists
图34：固定铁片与木托梁





7 Product Information 产品信息

7.1 General 通用

HomeRAB Pre-Cladding and RAB Board are cellulose fibre reinforced cement building products. The basic composition is Portland cement, ground sand, cellulose fibre and water.

HomeRAB预置垫层和RAB板都属于纤维素增强水泥建筑产品。其基本成分是波特兰水泥，砂，纤维素和水。

RAB Board is easily identified by the name RAB Board printed on the back face. It has a green colour water repellant sealer applied on its front face.

RAB板可以通过印刷在背面的名称识别。它的正面涂有绿色防水密封剂。

HomeRAB Pre-Cladding is easily identified by the name 'HomeRAB Pre-Cladding' on the front face. It has a green colour water repellent sealer applied on its front face. The name is also printed on the back face of the lining.

HomeRAB预置垫层可通过产品正面的“HomeRAB预置垫层”名称识别。它的正面涂有绿色防水密封剂。其名称也会印在安全衬的背面。

HomeRAB Pre-Cladding and RAB Board are manufactured to conform to the requirements of AS/NZS 2908.2 'Cellulose-Cement Products Part 2: Flat Sheet (ISO 8336).

HomeRAB预置垫层和RAB板的制造均符合AS/NZS2908.2'纤维素水泥产品标准第2部分：平板（ISO8336）的要求。

HomeRAB Pre-Cladding and RAB Board are classified Type B, Category 3 in accordance with AS/NZS 2908.2.

HomeRAB预置垫层和RAB板根据AS/NZS2908.2说明分类为B型，类别3。

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

有关安全数据表（SDS）的信息，请访问www.jameshardie.co.nz 或者致电Ask James Hardie 0800 808 868。

7.2 Durability 耐久性

Resistance to moisture/rotting 耐潮湿/耐腐蚀

HomeRAB Pre-Cladding and RAB Board have been assessed for permanent moisture induced deterioration (rotting) and have met the performance requirements of AS/NZS 2908.2.

HomeRAB预置垫层和RAB板经过评估，可以持久对抗湿气引起的变质（腐蚀）等问题，并符合AS/NZS2908的性能要求。

Resistance to fire 耐火

HomeRAB Pre-Cladding and RAB Board have been tested/assessed and are classified as Non-Combustible Material.

HomeRAB预置垫层和RAB板经过测试/评估，被归类为“不可燃材料”。

7.3 Alpine Regions 高寒地区

In regions subject to freeze/thaw conditions, HomeRAB Pre-Cladding and RAB Board must not be in direct contact with snow or ice build up e.g. external walls in alpine regions subject to snow drifts over winter. HomeRAB Pre-Cladding and RAB Board have been tested to resist freeze thaw in accordance with AS/NZS 2908.2 clause 8.2.3 requirements and is suitable for use in alpine regions.

在经常出现冰冻/融化状况的地区，HomeRAB预置垫层和RAB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。HomeRAB预置垫层和RAB板适用于高寒地区并符合AS/NZS 2908.2中条款8.2.3的测试要求。

8 Finishes and Maintenance
表面处理及维护

The selected cladding must be installed and finished within 180 days after the installation of HomeRAB Pre-Cladding and RAB Board, and the cladding must comply with the requirements of the NZBC. Regular cleaning and maintenance of claddings paints, joints, junctions, penetrations, flashings etc must be carried out at regular intervals and as per the requirements of the material manufacturers. Regular maintenance of cladding is also a requirement under the NZBC.

选定的外墙必须在安装HomeRAB预置垫层和RAB板后的180天内安装和完成，且外墙必须符合NZBC的要求。涂层油漆、连接处、穿透墙体处、防水板和涂有密封胶的位置等需要根据制造商要求进行定期维护。外墙的定期维护也是NZBC的一项要求。

The ground clearances required for the HomeRAB Pre-Cladding and RAB Board and the cladding must always be maintained.

始终确保HomeRAB预置垫层和RAB板和外墙与地面保持适当间隙。

Notes

Notes

Notes

HomeRAB™ Pre-Cladding RAB™ Board

Product Warranty 产品质保

James Hardie New Zealand Limited ("James Hardie") warrants for a period of 15 years from the date of purchase that the HomeRAB™ Pre-Cladding/RAB™ Board (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. 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.

James Hardie 新西兰有限公司（简称 "James Hardie"）保证HomeRAB™ 预置垫层/RAB™ 板（简称"产品"）在售出之日起的15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，其耐裂、耐腐蚀、耐火、耐白蚁咬噬造成的损害等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提供的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。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，包括涂料和连接系统，都必须严格按照相应制造商的说明和最佳行业守则进行使用、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;

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 the HomeRAB™ Pre-Cladding/RAB™ Board when installed in accordance with the HomeRAB™ Pre-Cladding/RAB™ Board installation manual 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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