

Best Practice

Working safely with James Hardie fibre cement products

July 2020 New Zealand



Contents

1	Introduction	3	
2	Why should I read this?	3	
3	Safe working practices	4	
4	Handling and storage of James Hardie products	8	
4.1	Tips for safe and easy handling of weatherboard products	9	
4.2	Tips for safe and easy handling of sheet products	10	
5	Jobsite best practice	11	
5.1	Cutting indoors	11	
5.2	Sanding, rebating, drilling or other machining	11	
5.3	Cutting outdoors	11	
5.4	Important Notes	12	
6	Tool Guide for James Hardie fibre cement products	14	
6.1	HardieBlade™ Saw Blade	14	
7	Dustless cutting tools	15	
8	Snapper shear	15	
9	Dust extraction equipment	16	
10	Circular saws	16	
11	Compound mitre saws	17	
12	Accessories	17	
13	Solid carbide tipped hole saws	18	

1 Introduction

James Hardie, a world leader in the manufacturing and development of fibre cement building products, has produced this best practice guide to help builders and installers work safely with fibre cement products.

This guide must be read in conjunction with project drawings and specifications, applicable in James Hardie technical and installation manuals. The details in this guide provide guidance on how to stay safe when installing James Hardie products and need to be reviewed by all parties who are responsible for installing James Hardie products on a site.

This guide is subject to periodic re-examination and revision. For information on the current status of these documents please check the James Hardie website, www.jameshardie.co.nz. The reader is responsible for ensuring that they are using the most up-to-date information.

2 Why should I read this?

To work safely, you need to understand the hazards and know how to minimise the risks.

At James Hardie Zero Harm is a key operating principle, and we believe safety should be of paramount importance to everyone. We are committed to providing you with information to work safely with our products.

This guide is a straightforward approach to jobsite safety through the use of best practices with James Hardie products.

It's good to remember that 'Best Practice' is much more than simply a 'strong suggestion'. It is a work ethic that if followed has tangible benefits that will positively influence your quality of work and wellbeing, leading to greater efficiency, and importantly, improved worksite safety.

3 Safe working practices

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

James Hardie products contain sand, a source of respirable crystalline silica. May cause cancer if dust from product is inhaled. Causes damage to lungs and respiratory system through prolonged or repeated inhalation of dust from product.

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.

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.

If using a dust mask or respirator, use an AS/NZS1716 P1 filter and refer to Australian/New Zealand Standard 1715:2009 Selection, Use and Maintenance of Respiratory Protective Equipment for more extensive guidance and more options for selecting respirators for workplaces. For further information, refer to our installation instructions and Safety Data Sheets available at www.jameshardie.co.nz.

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

Crystalline Silica is

- Commonly known as sand or quartz
- Found in many building products e.g. concrete, bricks, grout, wallboard, ceramic tiles, and all fibre cement materials

Why is Crystalline Silica a health hazard?

- Silica can be breathed deep into the lungs when present in the air as a very fine (respirable) dust
- 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
- The most hazardous dust is the dust you cannot see

When is Crystalline Silica a health hazard?

- It's dangerous to health if safety protocols to control dust are not followed when cutting, drilling or rebating a product containing crystalline silica
- Products containing silica are harmless if intact (e.g. an un-cut sheet of wall board)

Avoid breathing in crystalline silica dust

Safe working practices

- ✗ NEVER use a power saw indoors or in a poorly ventilated area
- ✗ NEVER dry sweep
- ✓ ALWAYS use M Class or higher vacuum or damp down dust before sweeping up
- ✗ NEVER use grinders

- ✓ ALWAYS use a dust reducing circular saw equipped with a sawblade specifically designed to minimise dust creation when cutting fibre cement – preferably a sawblade that carries the HardieBlade™ logo or one with at least equivalent performance – connected to an M Class or higher vacuum
- ✓ Before cutting warn others in the area to avoid dust
- ✓ ALWAYS follow tool manufacturers' safety recommendations
- ✓ ALWAYS expose only the minimum required depth of blade for the thickness of fibre cement to be cut
- ✓ ALWAYS wear a properly-fitted, approved dust mask or respirator P1 or higher in accordance with applicable government regulations and manufacturer instructions
- ✓ Consider rotating personnel across cutting tasks to further limit respirable silica exposures.

Use one of the following methods for cutting panel and weatherboard products under 9mm

Best

- HardieKnife™
- Hand guillotine
- Fibreshear

Better

Dust reducing circular saw equipped with HardieBlade™ Saw Blade and connected to a M Class or higher vacuum.

When cutting outdoors

- ✓ Make sure you work in a well ventilated area
- ✓ Position cutting station so wind will blow dust away from yourself and others in the working area
- ✓ Rotate employees across cutting task over duration of shift
- ✓ Cut products with a HardieBlade Saw Blade (or equivalent) and a dust reducing circular saw connected to a M Class or higher vacuum
- ✓ When sawing, sanding, rebating, drilling or machining fibre cement products, always:
 - Wear your P1 or higher (correctly fitted in accordance with manufacturers' instructions), ask others to do the same.
 - Keep persons on site at least 2 metres and as far as practicable away from the cutting station while the saw is in operation
 - If you are not clean shaven, then use a powered air respirator with a loose fitting head top
 - Wear safety glasses
 - Wear hearing protection
- ✓ Make sure you clean up BUT never dry sweep. Always hose down with water/wet wipe or use an M Class or higher vacuum

When cutting indoors

- ✗ Never cut using a circular saw indoors
- ✓ Position cutting station in a well ventilated area
- ✓ Cut ONLY using a HardieKnife™, hand guillotine or fibreshears (manual, electric or pneumatic)
- ✓ Make sure you clean up BUT never dry sweep. Always hose down with water/wet wipe or use an M Class or higher vacuum

Use the following method for cutting panel and weatherboard products over 9mm

Dust reducing circular saw equipped with HardieBlade Saw Blade and M Class or higher vacuum.

When cutting

- ✓ Work outdoors only
- ✓ Make sure you work in a well ventilated area
- ✓ Position cutting station so wind will blow dust away from yourself and others in the working area
- ✓ Rotate employees across cutting task over duration of shift
- ✓ Cut products with a HardieBlade Saw Blade (or equivalent) and a dust reducing circular saw connected to a M Class or higher vacuum
- ✓ When sawing, sanding, rebating, drilling or machining fibre cement products, always:
 - Wear your P1 or higher (correctly fitted in accordance with manufacturers' instructions), ask others to do the same.
 - Keep persons on site at least 2 metres and as far as practicable away from the cutting station while the saw is in operation.
 - If you are not clean shaven, then use a powered air respirator with a loose fitting head top
 - Wear safety glasses
 - Wear hearing protection
 - When others are close by, ask them to do the same
- ✓ Make sure you clean up BUT never dry sweep. Always hose down with water/wet wipe or use an M Class or higher vacuum

Use one of the following methods for cutting pre-finished panel products

Best

- HardieKnife™
- Fibreshear

Better

Dust reducing circular saw equipped with HardieBlade™ Saw Blade and connected to a M Class or higher vacuum.

When cutting outdoors

- ✓ Make sure you work in a well-ventilated area
- ✓ Position cutting station so wind will blow dust away from yourself and others in the working area
- ✓ Cut products with either a HardieKnife™ or fibre cement shears or, use a HardieBlade™ Saw Blade (or equivalent) and a dust reducing circular saw connected to a M Class or higher vacuum
- ✓ When sawing, sanding, rebating, drilling or machining fibre cement products, always:
 - Wear your P1 or P2 mask (correctly fitted in accordance with manufacturers' instructions), ask others to do the same.
 - Keep persons on site at least 2 metres and as far as practicable away from the cutting station while the saw is in operation
 - If you are not clean shaven, then use a powered air respirator with a loose fitting head top

- Wear safety glasses
 - Wear hearing protection
 - When others are close by, ask them to do the same
- ✓ Make sure you clean up BUT never dry sweep. Always hose down with water/wet wipe or use an M Class or higher vacuum

When cutting indoors

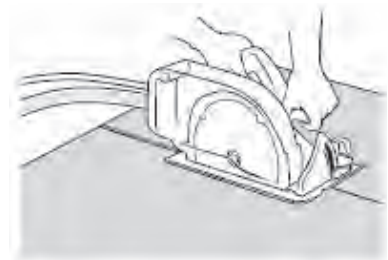
- ✗ Never cut using a circular saw indoors
- ✓ Position cutting station in a well-ventilated area
- ✓ Cut ONLY using a HardieKnife™ or fibreshears
- ✓ Make sure you clean up BUT never dry sweep. Always hose down with water/wet wipe or use an M Class or higher vacuum

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.

Working instructions

HardieBlade™ Saw Blade

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



Hole forming

For smooth clean cut circular holes:

- Mark the centre of the hole on the sheet
- Pre-drill a 'pilot' hole
- 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



For irregular holes:

- 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
- Tap carefully to avoid damage to sheets, ensuring that the sheet edges are properly supported

4 Handling and storage of James Hardie products

James Hardie building products should be stored in their original packaging, preferably under cover like a garage or in some other covered area protected from weather whenever possible. These products must be kept dry and should be kept covered on a pallet off the ground; they must never be stored in direct contact with the ground.

If James Hardie products become saturated, they must be laid on a flat surface and allowed to dry completely prior to installation.

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

James Hardie products are robust and durable once installed. It is important to keep the product dry in storage and during installation.

If product becomes saturated prior to installation the following can occur.

- Shrinkage at joints.
- Staining. A deposit of soluble salts, usually white in colour.
- Difficulty in handling due to the increased weight and added flexibility once saturated.

Storage

James Hardie products should be stored:

- ✓ In their original packaging
- ✓ Off the ground – either on a pallet or adequately supported on timber or other spacers (figure 1)
- ✓ Under cover where possible or otherwise protected with a waterproof covering to keep products dry (figure 2)
- ✓ Flat so as to minimise bending

Figure 1

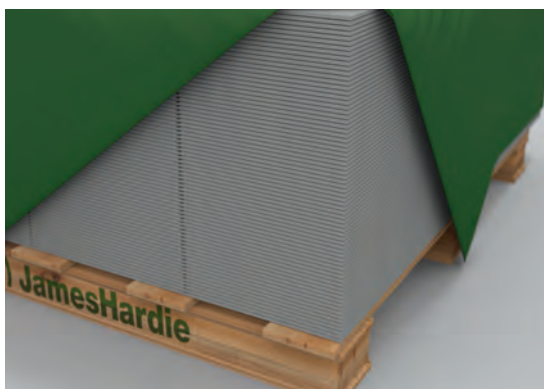
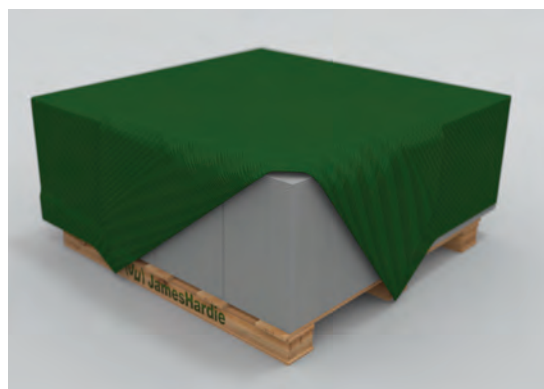


Figure 2



James Hardie products must not be stored:

- ✗ Directly on the ground
- ✗ In the open air exposed to the elements

Off loading

- ✓ James Hardie products should be off-loaded carefully by hand or by forklift
- ✓ James Hardie products should not be rolled or dumped off a truck during the delivery to the jobsite

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

4.1 Tips for safe and easy handling of weatherboard products

- ✗ Do not lift planked products flat and in the middle (figure 3)
- ✓ Carry the products on the edge (figure 4)
- ✓ If only one person is carrying the product, hold it in the middle and spread arms apart to better support the product (figure 5)
- ✓ If two people are carrying the plank, hold it near each end and on edge (figure 6)
- ✓ Exercise care when handling weatherboard products to avoid damaging the edges/corners

Figure 3



Figure 4

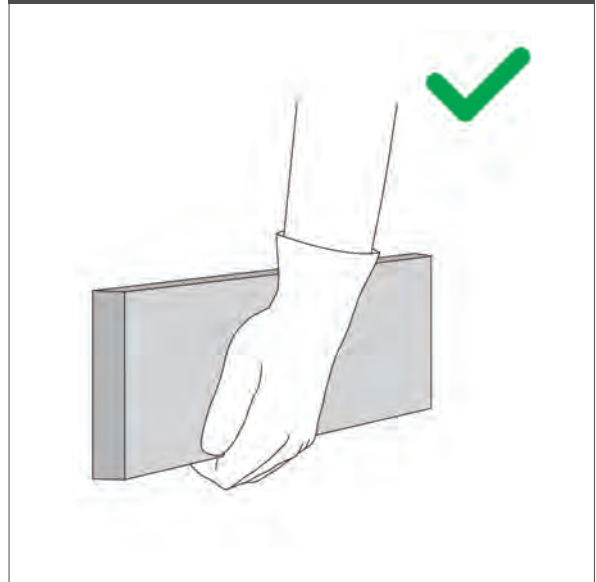
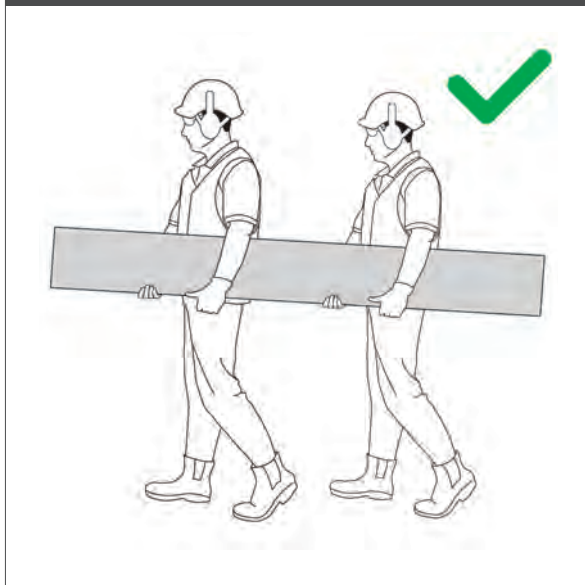


Figure 5



Figure 6



4.2 Tips for safe and easy handling of sheet products

- ✓ Carry with two people (figure 7)
- ✓ Hold near each end and on edge
- ✓ Exercise care when handling sheet products to avoid damaging the edges/corners

Figure 7

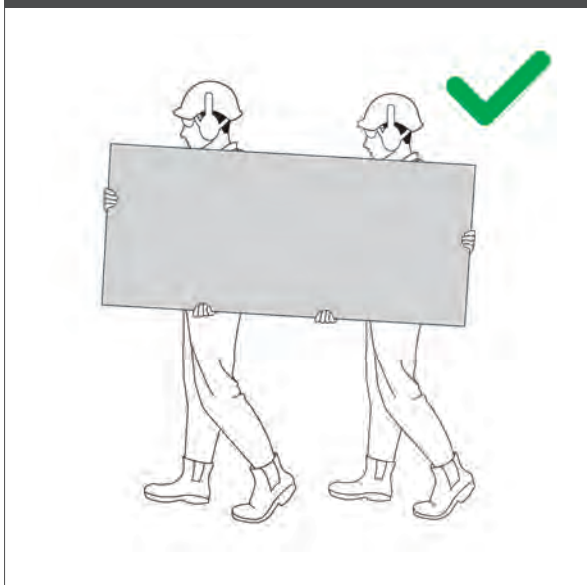


Figure 8



5 Jobsite best practice

Best practice information on all James Hardie products can be found in our installation manuals and technical specifications or at www.jameshardie.co.nz.

If there is additional concern about silica exposure levels, you should always consult a qualified industrial hygienist.

5.1 Cutting indoors

Cut only using HardieKnife before score and snap, hand guillotine or fibreshears (manual or electric). Position cutting station in a well-ventilated area.

5.2 Sanding, rebating, drilling or other machining

When sanding, rebating, drilling or machining you should always wear a P1 or P2 respirator with the tool connected to a M Class or higher vacuum and warn others in the area to maintain a minimum 2m distance from the work station.

5.3 Cutting outdoors

Position cutting station so that the wind will blow dust away from the user and others present in the surrounding area (see Figures 9 and 10).

Use one of the following methods based on the material to be cut:

Cutting fibre cement under 9mm

- HardieKnife score and snap
- Hand guillotine
- Fibreshear

Cutting fibre cement over 9mm

- Dust reducing circular saw equipped with HardieBlade™ Saw Blade connected to a M Class or higher vacuum

Figure 9: Correct



Figure 10: Wrong



5.4 Important Notes

- For maximum protection (lowest respirable dust production), James Hardie recommends using cutting methods that create minimal dust, and negligible levels of respirable silica such as HardieKnife, Hand Guillotine, and Fibreshears.
- Never use a circular saw blade that does not carry the HardieBlade™ logo.
- Never dry sweep - use a M Class or higher vacuum or wet sweep.
- Never use grinders.
- Always follow tool manufacturer's safety recommendations.
- P1 and P2 respirators should be used in conjunction with cutting practices to further reduce dust exposure.





HardieBlade™ Saw Blade is designed specifically for fibre cement and produces less respirable dust compared to traditional masonry blades.

WARNING

Tools and blades are designed to reduce breathable silica and do not always result in safe levels by themselves. Many other factors can influence dust exposure including jobsite ventilation, the amount of material being cut and breathing protection being used. If uncertain about exposure or protection in a specific situation, always consult a qualified industrial hygienist to determine actual exposure levels.

6 Tool Guide for James Hardie fibre cement products

No matter what James Hardie building product you choose, using the correct tools is a critical step in helping to complete the installation faster, safer and more efficiently.

James Hardie actively promotes the use of the right tools with recommended best practices.

Using these tools should help with ease of correct installation and help to improve installation efficiency.

Our goal has been to source tools and accessories either specifically designed or otherwise suitable for use with James Hardie building products - these should help with ease of correct installation and help to improve installation efficiency and long lasting durability that James Hardie products offer.

James Hardie actively promotes the use of the right tools with recommended best practices. Also refer to the 'Safe Working Practices' section published in the product installation manuals which contains information on silica, including its potential hazards and how these can be safely managed using best working practices.

It is important to note that this guide needs to be read in conjunction with the technical specification or installation manual, for each specific James Hardie product you are working with. These manuals provide specific information relating to the product you are using.

You must read and follow the tooling manufacturer's instructions/specifications for using the tools recommended in this guide. Also contact them for routine maintenance or for any trouble-shooting with these tools.

6.1 HardieBlade™ Saw Blade

The only blade recommended by James Hardie.

NEVER USE A CARBIDE SAW BLADE DESIGNED FOR TIMBER, OR CONTINUOUS RIM DIAMOND BLADE

The HardieBlade saw blade generates larger dust particles and reduces the risk of respirable silica when used with an M Class or higher vacuum system.

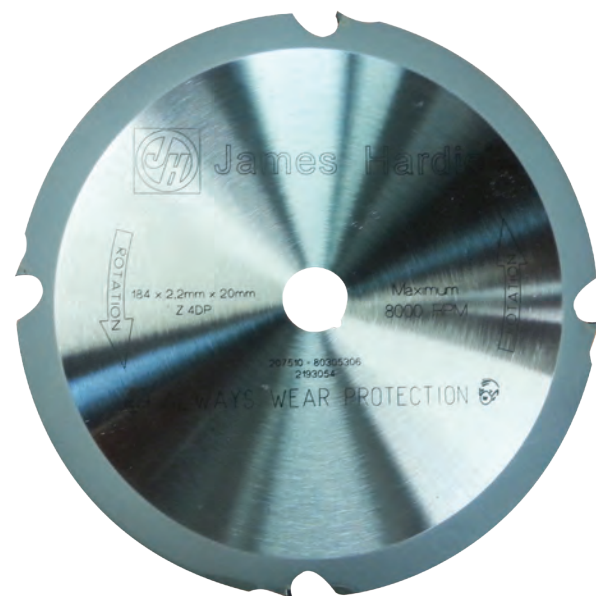
The 185mm diamond tip HardieBlade saw blade fits a dust reducing 185mm circular saw.

The 254mm diamond tip HardieBlade fits a dust reducing drop saw.

Always use circular saws outdoors and in a well ventilated area.

Blades are available through your local merchant.

James Hardie has worked with tool and blade manufacturers to develop tools to specifically minimise dust exposure.



7 Dustless cutting tools

HardieKnife™ Score and Snap Knife

For use with James Hardie products up to 9mm thick.

- **SCRAPE** - Smooth any rough edges resulting from scoring and snapping.
- **SCORE** - It is recommended to score on the face side of the product. Score against a straight edge and repeat the action if required to obtain adequate depth for clean break. Snap upwards to achieve break.
- **SHAVE** - Shave the edge of the sheet to form a clean edge.

HardieKnife Score and Snap Knife



Hand guillotine

For effective cutting of fibre cement up to 9mm in thickness.

- The hand guillotine is a low dust solution for cutting fibre cement. Ideal for use indoors.

Hand guillotine



8 Snapper shear

For use with James Hardie products up to 16mm in thickness.

Hikoki Snapper Shear – MODEL: SS10A (GAZ)

- The snapper shear is a solution for cutting James Hardie fibre cement products up to 16mm thickness.
- Impressive straight edge performance, the Snapper Shear will also cut accurate notches, gentle curves, and internal corners with ease.

Hikoki Snapper Shear 2 – Model SS10A (GAZ)



9 Dust extraction equipment

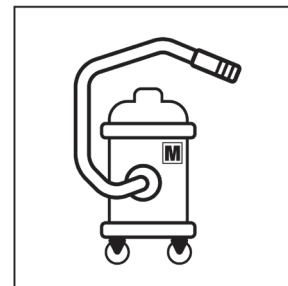
James Hardie recommends the use of a M Class or higher vacuum fitted with a dust bag for efficient dust collection and performance.

Using an M Class or higher vacuum prolongs the lifespan of your power tools by limiting the amount of dust entering your power tools and reducing the risk of breakdowns.

James Hardie recommend tools that have the following features:

- M Class or higher vacuum bearing the label below
- Capable of auto-start when tool trigger is depressed - either corded or Bluetooth
- Wet/dry capability
- Self-cleaning filter
- Able to be fitted with a dust collection bag for safe and easy dust disposal

Tools with these features can be purchased from tool or building merchant suppliers. Manufacturers include, but are not limited to Makita, Nilfisk, Hilti, DeWalt, and Festool



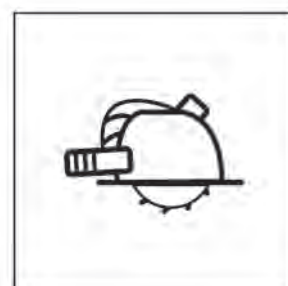
10 Circular saws

Dust reducing circular saws fitted with a HardieBlade Saw Blade are suitable for cutting James Hardie fibre cement products. Before cutting any product, you should review the installation recommendations in the technical information for that specific product.

A circular saw can be used when a high rate of cutting is required. A circular saw is only suitable for use outdoors, in well-ventilated areas.

James Hardie recommend tools that have the following features:

- Specific dust reducing features
- Fully enclosed upper guard
- Fits James Hardie HardieBlade
- Large dust extraction port
- Able to connect with cord or Bluetooth to M Class or higher vacuums to make use of vacuum auto-start functions



Tools with these features can be purchased from tool or building merchant suppliers. Manufacturers include, but are not limited to Makita, HiKoki, and Festool.

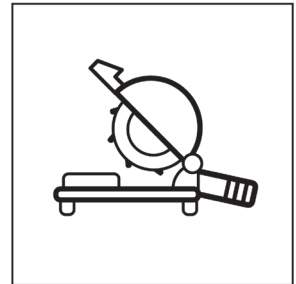
11 Compound mitre saws

Use with Linea™ Weatherboard, Linea™ Oblique™ Weatherboard, and James™ Hardie Weatherboards

A Compound mitre saw is only suitable for use outdoors, in well-ventilated areas.

James Hardie recommend tools that have the following features:

- Specific dust reducing features
- Large dust extraction ports beside and behind the blade, as well as within the base
- Fits James Hardie HardieBlade
- Able to connect with cord or Bluetooth to M Class or higher vacuum to make use of vacuum auto-start function



Tools with these features can be purchased from tool or building merchant suppliers. Manufacturers include, but are not limited to Makita, HiKoki, DeWalt, and Festool

12 Accessories

James Hardie tungsten carbide drill bits

9mm drill bit suitable for Titan™ Facade Panel and ExoTec™ Facade Panel.

- 18mm drill bit suitable for HardiePanel™ Compressed Sheet.
- A solid tungsten carbide drill for drilling and countersinking of fibre cement panels in one operation.
- Suitable for 10 gauge screws.

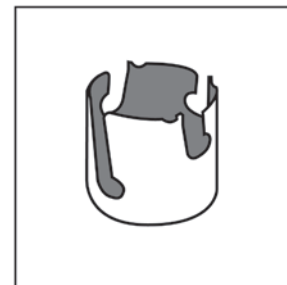
James Hardie tungsten carbide drill bits








13 Solid carbide tipped hole saws

- Carbide last significantly longer than bi-metal

Tools with these features can be purchased from tool or building merchant suppliers. Manufacturers include, but are not limited to Sarrett, BlueMol, Lenox, and Milwaukee



Accessories/tools supplied by James Hardie		
Accessories	Description	Code
	HardieBlade™ Saw Blade Diamond tip 185mm diameter fibre cement circular saw blade.	300660
	HardieBlade™ Saw Blade Diamond tip 254mm diameter fibre cement circular saw blade.	303375
	HardieKnife™ Scoring tool for easy cutting.	305926
	Tungsten Carbide Drill Bit 9mm	300567
	Tungsten Carbide Drill Bit 18mm	300566

Notes

