

Fencing (WA Only)

Installation guide

HardieFence™ Easylock® system



James Hardie
A smarter way to build

AUSTRALIA JANUARY 2012

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1 INTRODUCTION

This manual describes how James Hardie's 7mm thick corrugated HardieFence™ sheets can be installed in a fence system. The corrugated fibre cement sheet is available raw and ready to paint.

HardieFence™ EasyLock® system

This fence system consists of sheets partially buried into the ground with the top of the sheets finishing off with a metal capping. This system is suited for flat or sloped sites which have sandy type soils.

HardieFence sheets have an overlap on one edge, and an underlap (or smaller corrugation) on the other edge to enable seamless interlocking of the sheets together.

For installing HardieFence sheets, James Hardie recommends using an accredited fencing contractor. The contractor specialises in HardieFence system installations. For more information please Ask James Hardie™ on 13 11 03.

The specifier or other responsible party for the project must ensure the information and details in this guide are appropriate for the intended application and that specific design and detailing is undertaken for areas which fall outside the scope of this documentation.

For safety, structural adequacy and warranty reasons, your HardieFence system must always be installed according to the specifications detailed in this manual by James Hardie.

Make sure your information is up to date

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.com.au or Ask James Hardie™ on 13 11 03

WE VALUE YOUR FEEDBACK

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

Ask James Hardie™

Fax 02 9638 9535

literaturefeedback@jameshardie.com.au



2 SYSTEM OVERVIEW

HARDIEFENCE™ EASYLOCK® SYSTEM FOR IN-GROUND INSTALLATION

The HardieFence™ EasyLock® system is an easy to install and affordable freestanding fence solution. The sheets are designed to be buried into sandy soils, eliminating gaps below the fence on both level and sloped sites. The sheets are available in a raw finish, ready for the application of two coats minimum of a quality exterior paint that is compatible with fibre cement HardieFence sheet. As the HardieFence sheet profile provides a consistent look on either side, both neighbours have the same aesthetic, minimising potential conflicts.

Additional features of this fence system are:

- The HardieFence™ EasyLock® system comes with a Zincolume finish capping, to provide professional finish on the top of the fence and lock the sheets into place.
- As the sheets are buried deep into the ground, this provides a barrier to weeds growing under the fence and dogs digging out under the fence. There is also no need for expensive (or cumbersome) footings.
- In addition, as the finished fence stands 1800mm high with no intermediate posts or horizontal supports required, there are no protruding bolts, sharp edges or nails.

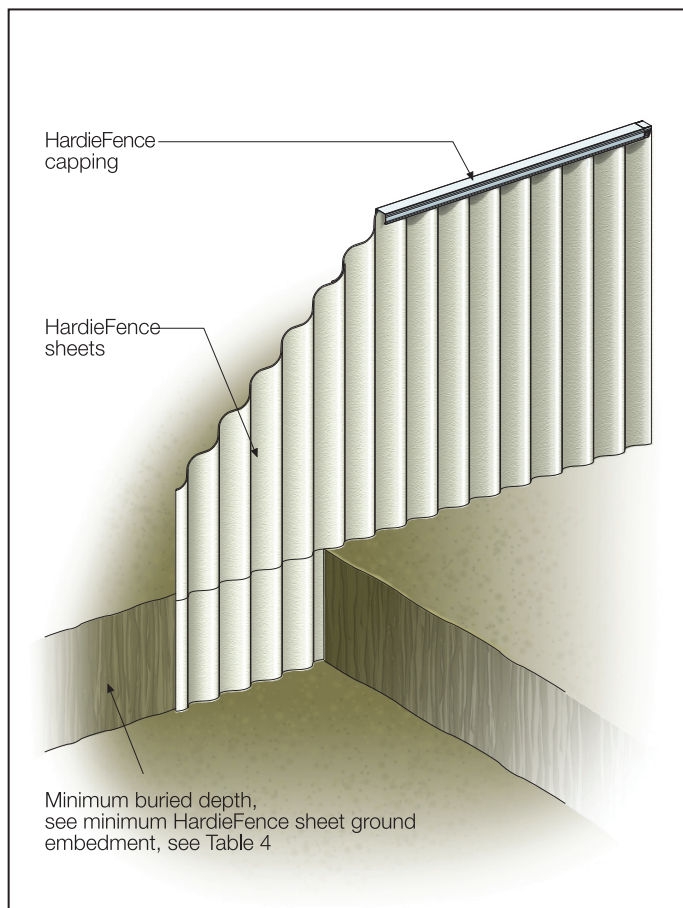
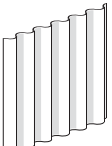


FIGURE 1 HARDIEFENCE EASYLOCK SYSTEM OVERVIEW

3 PRODUCT INFORMATION

TABLE 1

HARDIEFENCE SHEET SIZES		
PRODUCT	DESCRIPTION	QUANTITY / SIZE (NOMINAL)
	HardieFence sheet Corrugated fibre cement profile used in the HardieFence EasyLock system. The sheets are available in a raw sheet finish.	Thickness: 7mm Width: 1105mm Effective cover: 1010mm Height: 1800mm / 2400mm

*All dimensions and masses are approximate and subject to manufacture tolerances.

TABLE 2


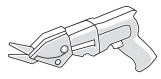
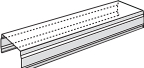

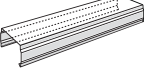
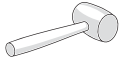
PRODUCT / ACCESSORIES / TOOLS			
COMPONENTS SUPPLIED BY JAMES HARDIE			
GENERAL			
	HardieFence™ Clips Metal clips used with the HardieFence™ EasyLock® system for securing lapped sheets together. 500 per box. Part No. 305563		James Hardie™ Fibreshears Electric tool for cutting fibre cement sheets. 1 each. Part No. 300653
EASYLOCK SYSTEM			
	HardieFence™ Capping. 1,875mm long Used in the HardieFence™ EasyLock® system as capping for the HardieFence™ sheet. 8 per pack. Part No. 305561		HardieBlade™ Saw Blade. 185mm diameter A 185mm diameter poly-diamond blade for fast and clean cutting of James Hardie fibre cement. 1 each. Part No. 300660
	HardieFence™ Capping. 3,750mm long Used with the HardieFence™ EasyLock® system as capping for the HardieFence™ sheet. 8 per pack. Part No. 305562		

TABLE 3

PRODUCT / ACCESSORIES / TOOLS		
COMPONENTS NOT SUPPLIED BY JAMES HARDIE		
James Hardie recommends the following products for use in conjunction with its HardieFence sheets. James Hardie does not supply these products and does not provide a warranty for their use. Please contact the component manufacturer for information on their warranties and further information on their products.		
ACCESSORIES		
EASYLOCK SYSTEM		
	Rubber mallet Used to tap HardieFence sheets into position.	

4 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 which is considered by some international authorities to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation or handling: (1) work in outdoor areas with ample ventilation; (2) minimise dust when cutting by using either 'score and snap' knife, fibre cement shears or, where not feasible, use a HardieBlade™ Saw Blade and dust-reducing circular saw attached to a HEPA vacuum; (3) warn others in the immediate area to avoid breathing dust; (4) wear a properly-fitted, approved dust mask or respirator (e.g. P1 or P2) in accordance with applicable government regulations and manufacturer instructions to further limit respirable silica exposures. During clean-up, use HEPA vacuums or wet cleanup methods - never dry sweep. For further information, refer to our installation instructions and Material Safety Data Sheets available at www.jameshardie.com.au. FAILURE TO ADHERE TO OUR WARNINGS, MATERIAL SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

JAMES HARDIE RECOMMENDED SAFE WORKING PRACTICES

CUTTING OUTDOORS

1. Position cutting station so wind will blow dust away from the user or others in working area.
2. Use one of the following methods based on the required cutting rate:

Best

- Fibreshear

Good

- Dust reducing circular saw equipped with HardieBlade™ Saw Blade and HEPA vacuum extraction.

CUTTING INDOORS

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

DRILLING/OTHER MACHINING

When drilling or machining you should always wear a P1 or P2 dust mask and warn others in the immediate area.

IMPORTANT NOTES

1. For maximum protection (lowest respirable dust production), James Hardie recommends always using "Best" - level cutting methods where feasible.
2. NEVER use a power saw indoors.
3. NEVER use a circular saw blade that does not carry the HardieBlade™ logo.
4. NEVER dry sweep - Use wet suppression or HEPA vacuum.
5. NEVER use grinders.
6. ALWAYS follow tool manufacturers' safety recommendations.

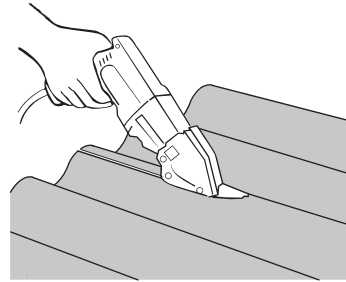
P1 or P2 respirators should be used in conjunction with above cutting practices to further reduce dust exposures. Additional exposure information is available at www.jameshardie.com.au to help you determine the most appropriate cutting method for your job requirements. If concern still exists about exposure 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

Refer to recommended safe working practices before starting any cutting or machining of product.

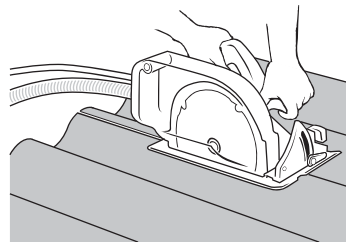
Fibreshear

An electrically powered, fast, clean and effortless way of cutting James Hardie building products, especially around curves such as archways. Make fibreshear cut on the 'off-cut' side of the line to allow for the thickness of the shear.



HardieBlade™ Saw Blade

The HardieBlade™ Saw Blade used with a dust-reducing saw and HEPA vacuum extraction allows for fast, clean cutting of James Hardie fibre cement products. A dust-reducing saw uses a dust deflector or a dust collector which can be connected to a vacuum system. When sawing, clamp a straight-edge to the sheet as a guide and run the saw base plate along the straight edge when making the cut.



STORAGE AND HANDLING

To avoid damage, all James Hardie building products should be stored with edges and corners of the sheets protected from chipping.

James Hardie building products must be installed in a dry state and protected from rain during transport and storage. The product must be laid flat under cover on a smooth level surface clear of the ground to avoid exposure to water, moisture, etc.

QUALITY

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

5 DESIGN

WIND LOAD DESIGN

The HardieFence™ EasyLock® system has been designed to comply with the Building Code of Australia (BCA) and Australian Standard AS 1170.2 'Wind Actions'. The following points should be noted:

- In accordance with AS 1170.2, the designer may consider what the terrain may be like in five year's time. This usually means that some significant degree of shielding is likely to occur by then, making the fences suitable for both Terrain Categories TC2.5 and TC3.
- At freestanding ends of the fence, there is a localised increase in design pressure of between 50% and 100% due to wind turbulence. These effects need to be accounted for in the design and installation process.
- It is important that there are no adverse localised topographical effects that might increase the wind speed, causing the resultant pressure to exceed the pressures for which the fences are designed. For example, the fence should not be exposed on the crest of a hill or be installed on the edge of large, open agricultural areas.
- If in doubt as to the suitability of the fence for your application, or if you need a fence in higher wind conditions outside the scope of this manual, you must consult the James Hardie Technical Supplement on fencing design or else seek professional engineering assistance. For further information, Ask James Hardie™ on 13 11 03

HARDIEFENCE™ EASYLOCK® SYSTEM

With its local design wind speed of 36m/s (130km/h) and pressure of 0.93kPa, the in-ground fence system satisfies Region A Terrain Categories TC 2.5 and TC 3 without any requirement for shielding from surrounding structures or obstructions.

All freestanding ends of the fence must be raked down as shown on page 11 of this literature.

6 HARDIEFENCE EASYLOCK

PREPARATION

The HardieFence™ EasyLock® system is designed to create a finished fence height of 1.8m. To achieve this, HardieFence sheets of 2.4m in height are embedded 600mm into the ground. The HardieFence sheets must:

- not be finished at a height greater than 1.8 metres above the ground level.
- be capped with HardieFence capping, and rigidly mitred at corners and intersecting fence junctions to prevent sideways movement, see page 15.
- be embedded into the ground as specified in Table 4 below.
- NOT be bolted through the side laps.

Depending on the wind load on the fence it may be necessary to rake down the end of the fence, see the Design section on page 6.

The use of an angle grinder to cut the HardieFence capping is NOT recommended.

NOTE

Brick paving, concrete paths and edges should not be constructed closer than 50mm to the fence.

TABLE 4

HARDIEFENCE SHEET GROUND EMBEDMENT		
NOTE: Nominal effective sheet coverage is 1 metre		
SHEET HEIGHT	MAX. FENCE HEIGHT	MIN. BURIED DEPTH
1800mm	1400mm	400mm
2400mm	1800mm	600mm

TRENCH

- must be backfilled with sand, rounded gravel or sandy loams
- **must not** be filled with concrete, clay or soil
- must not have more than 150mm difference in soil levels on either side of the fence.

RETAINING WALLS

- Do not erect freestanding HardieFence sheets flush against a retaining
- Do not use HardieFence sheets as a retaining wall.

TRENCH PREPARATION

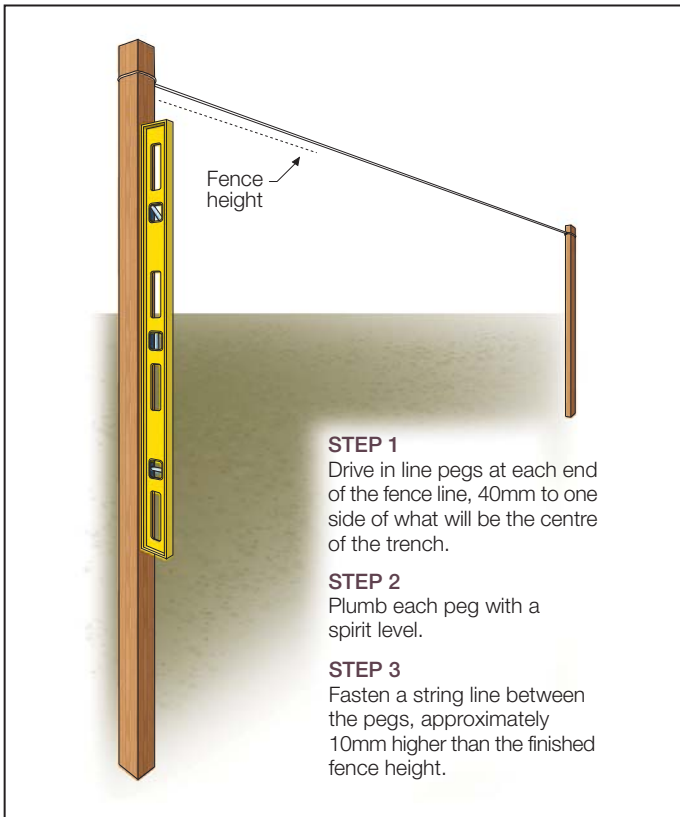


FIGURE 2 TOP STRING LINE

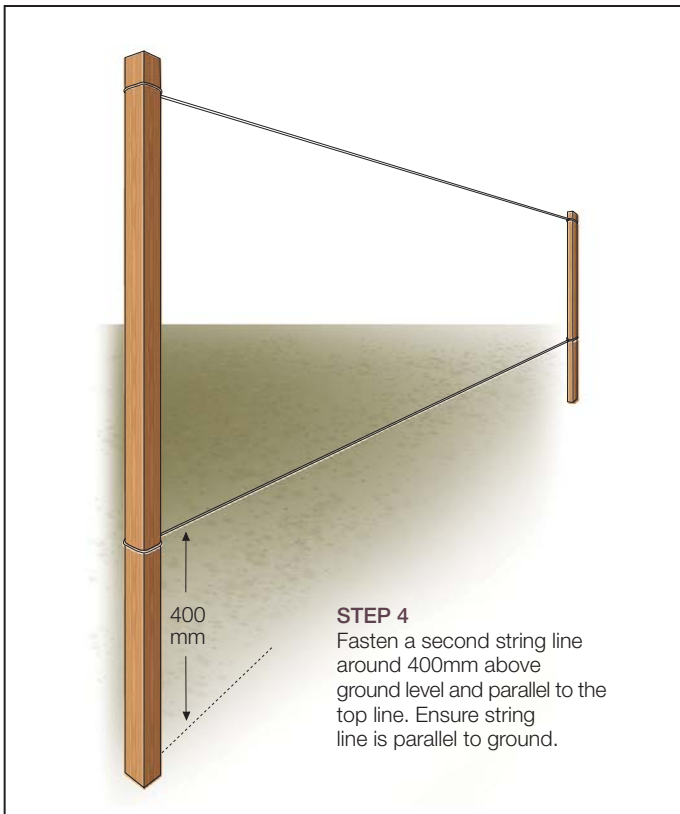


FIGURE 3 BOTTOM STRING LINE

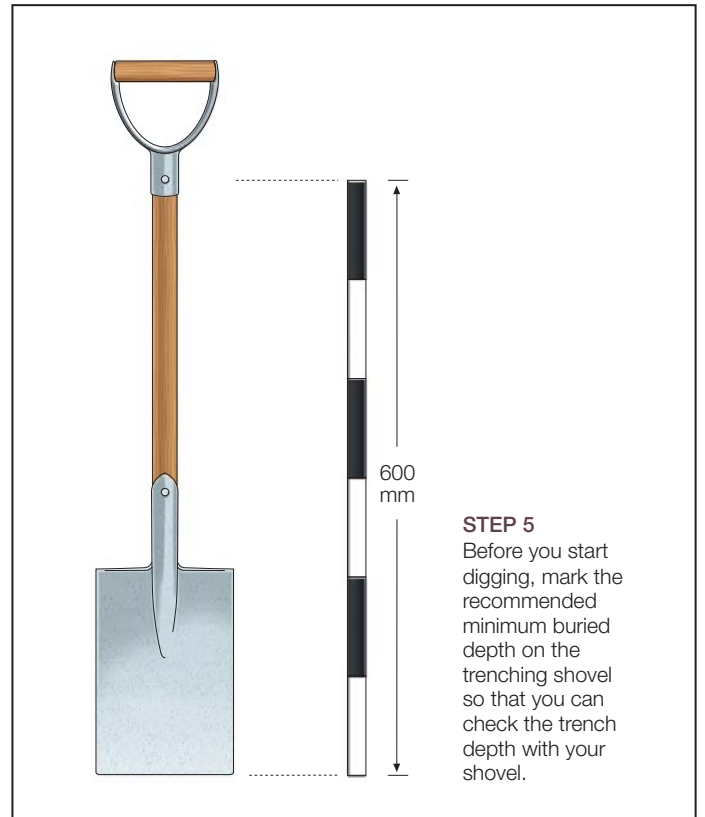


FIGURE 4 MARK BURIED DEPTH ON SHOVEL



FIGURE 5 DIGGING TRENCH FOR HARDIFENCE SHEETS

INSTALLATION

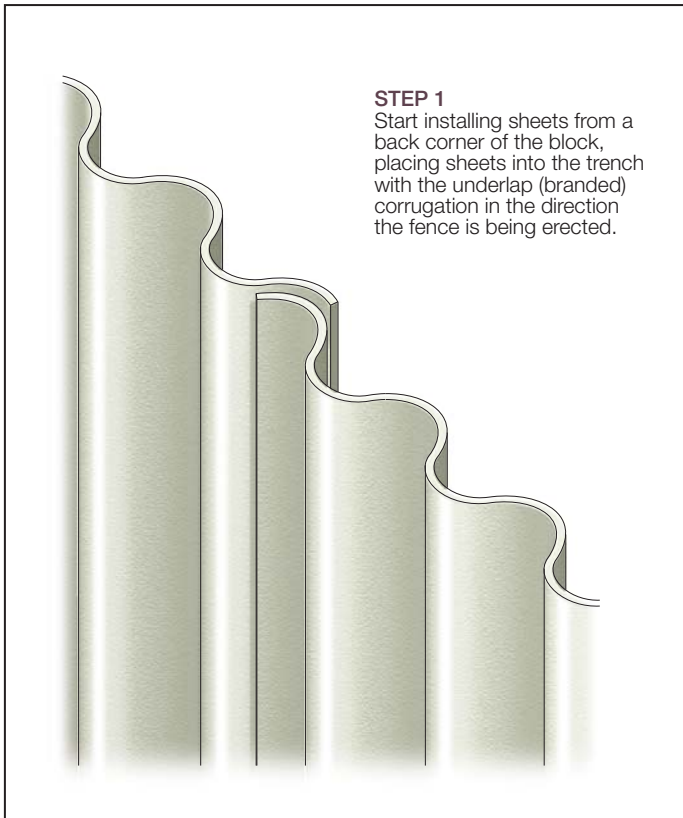


FIGURE 6 INSTALL SHEETS INTO TRENCH

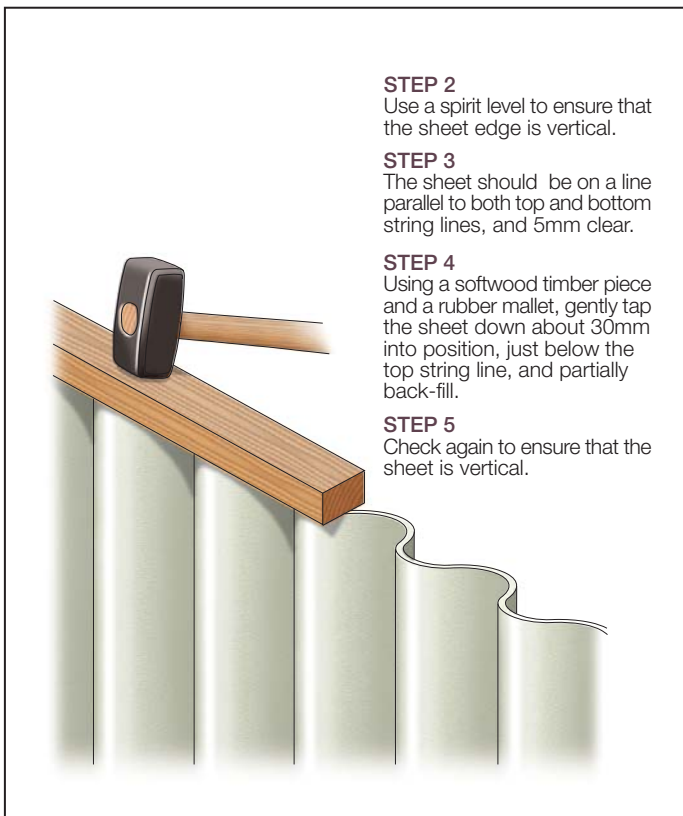


FIGURE 7 GENTLY TAP THE SHEETS DOWN

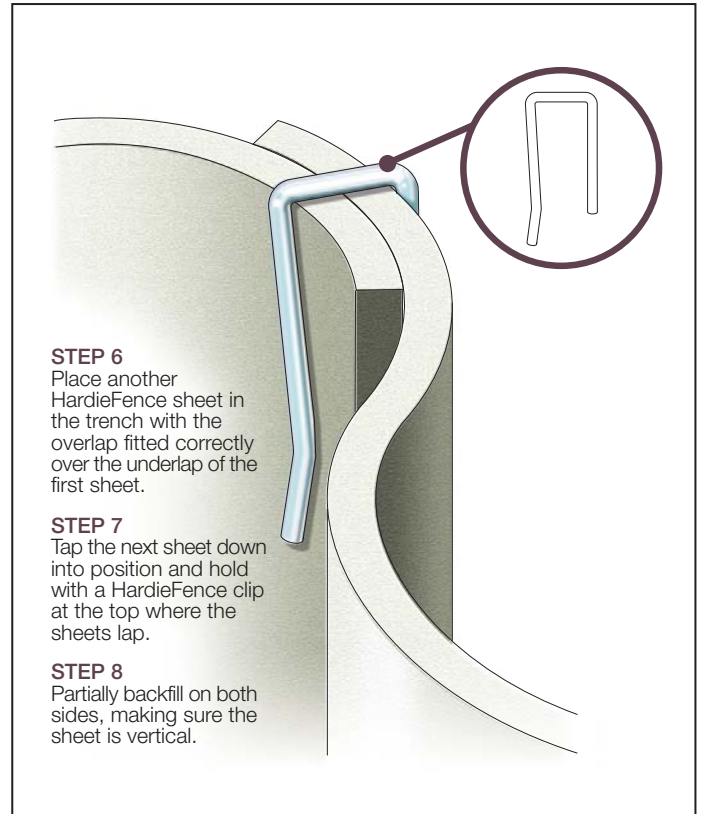


FIGURE 8 SECURE WITH HARDIEFENCE CLIPS

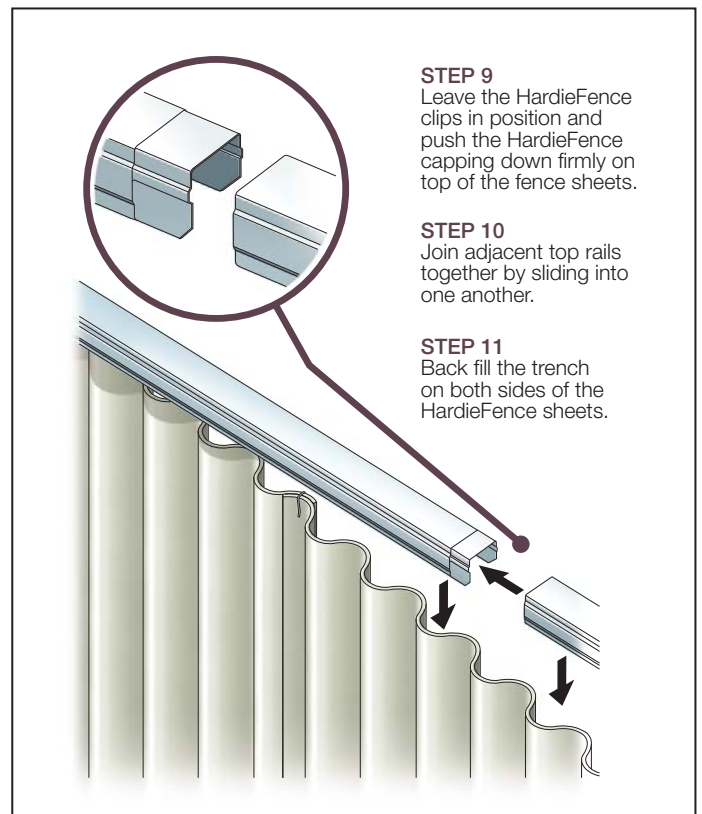


FIGURE 9 INSTALL CAPPING

SLOPING GROUND

The HardieFence™ EasyLock® system can be installed on sloping sites by gradually stepping each successive sheet as shown in Figure 10. Sheets must be installed vertically on sloping ground. If the variation in sheet height exceeds 40mm, cut off the protruding sections to an even line parallel with the average fall of the ground. This can be done with a dustless circular saw fitted with a HardieBlade™ Saw Blade, see Figure 11. HardieFence capping can then be fitted on top.

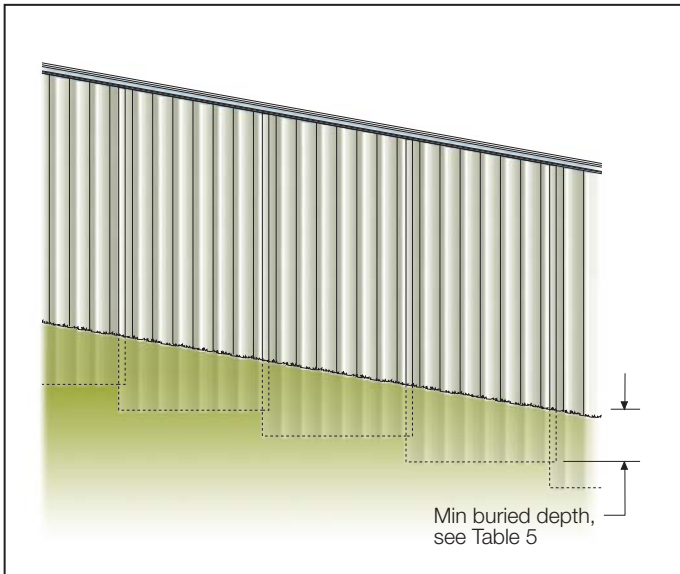


FIGURE 10 HARDIEFENCE SHEET INSTALLATION ON SLOPING GROUND

STEP 1

Where the height of the free-standing fence is to be reduced, eg the approach to a front boundary, erect the fence first and then cut two sheets to make the rake required. Usual finishing height is 1 metre, refer to HardieFence™ EasyLock® system finishing section in this manual.

STEP 2

Cut sheets in position, using a dustless circular saw with HardieBlade™ Saw Blade. Then fit the HardieFence Capping. (See Recommended Safe Working Practices.)



FIGURE 11 HARDIEFENCE SHEETS MAY BE CUT ON A RAKE

FINISHING

The final step is to secure the ends of the HardieFence sheets to protect them against sideways movement. There are four methods as shown below. In Figure 17, the designer must determine the suitability of the abutting wall to

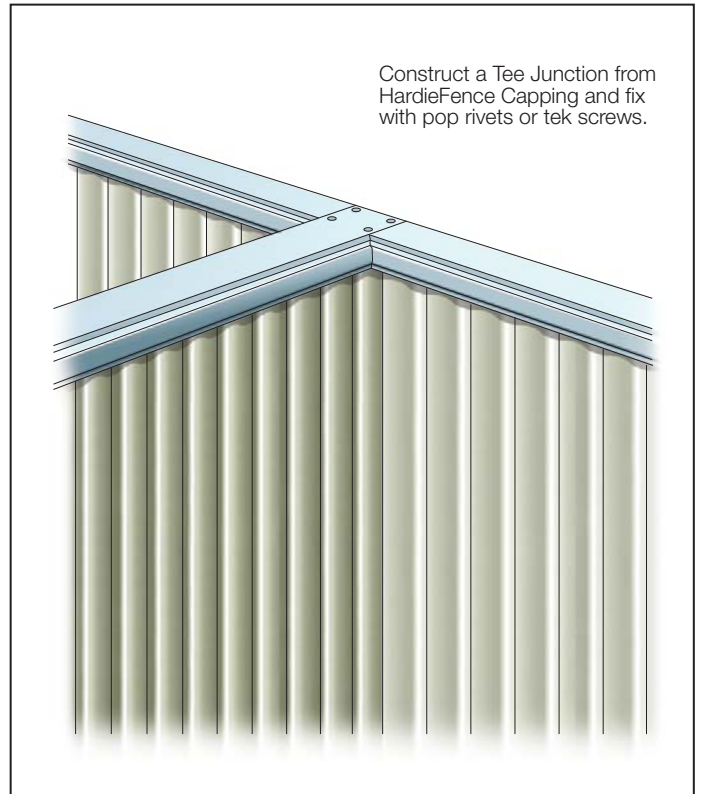


FIGURE 12 TEE JUNCTION FROM HARDIEFENCE CAPPING

Where the HardieFence Sheets butt against a wall, you must secure it by fixing 50mm x 50mm x 400mm treated timber blocks to the wall on both sides of the sheet.



FIGURE 13 WALL JUNCTION

7 MAINTENANCE AND PRODUCT INFORMATION

carry the imposed wind load by the fence. Raking down of the freestanding end as in Figure 14 may be avoided in Terrain Category 3 situations by installing an end post or stake.

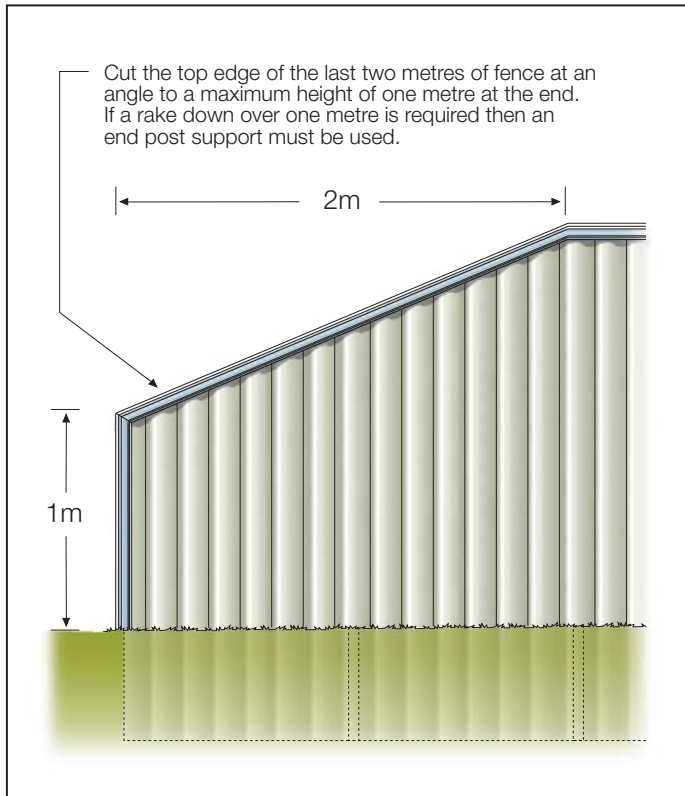


FIGURE 14 RAKED DOWN END OVER 2 METRES

James Hardie recommends the application of two coats minimum of a quality exterior paint that is compatible with fibre cement over the HardieFence sheet.

MAINTENANCE

General

Ensure that the fence is not retaining any soil.

A regular wash down of the fence is required to resist staining and ensure that the long-term durability of the steel componentry and fence sheet is not compromised.

Brick paving, concrete paths and edges should not be constructed closer than 50mm to the fence.

Harmful chemicals, garden or lawn cuttings must never make contact with the HardieFence™ EasyLock® system.

The paint applied to the HardieFence sheets must be maintained according to the paint manufacturer's specifications.

PRODUCT INFORMATION

HardieFence sheets are a cellulose fibre reinforced cement building product. The basic composition is Portland cement, ground sand, cellulose fibre and water.

The underlap is branded with manufacturing details, which should not be visible when the completed fence is correctly installed.

For Material Safety Data Sheets (MSDS) visit www.jameshardie.com.au or Ask James Hardie™ on 13 11 03.

PRODUCT MASS

Based on equilibrium moisture content the approximate mass of HardieFence sheet is 13.5kg/m².

DURABILITY

Resistance to moisture/rotting

HardieFence sheets have demonstrated resistance to permanent moisture induced deterioration (rotting) by passing the following tests in accordance with AS/NZS 2908.2:

- Water permeability (Clause 8.2.2)
- Warm water (Clause 8.2.4)
- Heat rain (Clause 6.5)
- Soak dry (Clause 8.2.5)

Resistance to Fire

The HardieFence sheets is suitable where non-combustible materials are required in accordance with C1.12 of the Building Code of Australia.

James Hardie building products have been tested by CSIRO in accordance with AS/NZS 3837 and are classified as conforming to Group 1 material (highest and best result possible), with an average specific extinction area far lower than the permissible 250m²/kg, as referenced in Specification C1.10a of the BCA.

Resistance to termite attack

Based on testing completed by CSIRO Division of Forest Products and Ensis Australia James Hardie building products have demonstrated resistance to termite attack.

8 WARRANTY

HardieFence™ sheet

10 Year Warranty

January 2012

James Hardie Australia Pty Limited ("James Hardie") warrants to the first purchaser of HardieFence™ sheet (**Product**) from James Hardie and the last purchaser of the Product prior to installation that, subject to compliance with the Conditions of Warranty below:

- for a period of 10 years from the date of purchase, the Product will be free from defects due to defective factory workmanship or materials; and
- for a period of 10 years from the date of purchase, the Product will be resistant to damage from cracking, moisture, rotting, fire and termites to the extent set out in James Hardie's relevant published literature current at the time of installation; and
- for a period of 12 months from the date of purchase that the accessories supplied by James Hardie will be free from defects due to defective factory workmanship or materials.

For the purposes of this warranty, a "defect" in respect of the Product means a non-compliance with AS/NZS 2908.2:2000 Cellulose-cement products - Flat sheet.

CONDITIONS OF WARRANTY

This warranty is strictly subject to the following conditions:

- (a) James Hardie will not be liable for breach of this warranty unless the claimant provides proof of purchase of the Product and makes a written claim to James Hardie at the address set out below, 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.
- (b) the Product is subject to natural variation in finish as part of the manufacturing process. The builder/installer must ensure the Product meets aesthetic requirements before installation. Subject to the terms of this warranty, after installation of the Product, James Hardie is not liable for claims arising from aesthetic surface variations if such variations were, or would upon reasonable inspection have been, apparent prior to installation;
- (c) this warranty cannot be relied upon by any other person and is not transferable;
- (d) 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. To obtain copies of such literature go to or contact Ask James Hardie™ on 13 11 03. 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;
- (e) the project must be designed and constructed in strict compliance with all relevant provisions of the current Building Code of Australia, regulations and standards;
- (f) if the claimant chooses to rely upon this warranty then the claimant's sole remedy under this warranty for breach of this 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;
- (g) In the circumstances where the Australian Consumer Law does not apply in respect of the purchase of the Product, 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);

- (h) In the circumstances where the Australian Consumer Law does not apply in respect of the purchase of the Product, all warranties, conditions, liabilities and obligations other than those specified in this warranty are excluded to the fullest extent allowed by law;
- (i) If meeting a claim under this warranty involves re-coating of Product, there may be slight colour differences between the original and replacement Product due to the effects of weathering and variations in materials over time and James Hardie is not liable for any such colour differences;
- (j) In the circumstances where the Australian Consumer Law does not apply in respect of the purchase of the Product and therefore to this warranty, all expenses incurred as a result of claiming under this warranty are to be borne by the claimant.
- (k) In the circumstances where the Australian Consumer Law does apply in respect of the purchase of the Product and therefore to this warranty, if James Hardie accepts or it is determined by James Hardie that the claimant has a valid claim under this warranty, James Hardie will bear the claimant's reasonable costs of claiming under this warranty. The claimant is responsible for all other costs of claiming under this warranty. All claims for such costs are to be notified to James Hardie at the address outlined below within 21 days from when the claimant first makes a claim under this warranty.

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 (d), (e), (g) and (h) above. Further, as the successful performance of the relevant system depends on numerous factors outside the control of James Hardie (e.g. quality of workmanship and design), James Hardie shall not be liable for the recommendations in that literature and the performance of the relevant system, including its suitability for any purpose or ability to satisfy the relevant provisions of the Building Code of Australia, regulations and standards.

IMPORTANT NOTE

If you acquire goods manufactured by James Hardie as a consumer according to the Australian Consumer Law, our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Any rights a consumer may have under this warranty are in addition to other rights and remedies of a consumer under a law in relation to the goods to which this warranty relates. Nothing in this document shall exclude or modify any legal rights a customer may have under the Australian Consumer Law or otherwise which cannot be excluded or modified at law.

Contact details if you wish to make a claim under this warranty: For more information or to make a claim under this warranty please Ask James Hardie™ on 13 11 03, visit www.jameshardie.com.au or www.accel.com.au, email James Hardie via our website or write to James Hardie at:

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