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Acoustic Fencing and Barriers from Jacksons



Jakoustic®
effective noise protection



This brochure is designed to aid you in working out which barrier would best suit your needs.

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Not only do the Jakoustic barriers offer sound reduction, they also offer:

- High privacy
- Low visual impact
- Attractive superior planed finish
- 25 year guarantee

When looking at acoustic fencing you should take into account:

- The location of the source of the noise
- The intensity and frequency of the source
- The distance from the noise source to the acoustic barrier
- The location of the position or areas to be screened
- The density, height and degree of absorption of the barrier

At Jacksons we also work with a nationwide team of sound engineers to provide a detailed report on sites to ensure Jakoustic will work effectively.

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Jakoustic Barriers . . .

Much more than just a fence - the innovative Jakoustic timber barrier system is Jacksons' answer to noise pollution, a growing problem in our densely populated modern world.

We offer solutions for residential, commercial, industrial, railway and highway applications that can reduce noise levels by as much as 32 decibels* while maintaining an attractive and 'natural' facade.

- Jakoustic meets all residential and industrial requirements.
- Jakoustic Plus offers the extra noise protection of an additional layer of absorptive material contained within a special membrane.
- Jakoustic Highway is specially designed to satisfy stringent highway standards, in heights up to 12m with steel posts.

Established in 1947, Jacksons is a leading manufacturer of timber and steel fencing and gates, with expertise in automation, access control and perimeter security.

We pride ourselves not only on the quality of our products and production flexibility, but also on our responsive service to all customers, whatever the size of the project, wherever it may be in the world.

Jacksons has been given the environmental seal of approval by the Forest Stewardship Council (FSC) in addition to receiving the Programme for the Endorsement of Forest Certification (PEFC). Both certifications ensure all timber used for Jacksons' products has been sourced from well-managed forests.

All timber used is Jakcure® pressure treated and is covered by our 25 year guarantee, against all wood boring pests and all forms of wet and dry rot. As with all our products, we carefully select appropriate species and grades of timber to

suit the intended application of each component. Gravel boards and post components are selected and intensively treated for in ground use, while the tongue and groove boards are intended to be used above ground only.

Jacksons Fencing is an ISO 9001 accredited company and all our timber treatment processes are ISO 9001 certified.



RIBA CPD presentation on "Acoustic Barriers to environmental noise pollution" is now available from Jacksons Fencing. For more details please email cpd@jacksons-fencing.co.uk

Jakcure® is a registered trademark of H.S Jackson and Son (Fencing) Ltd.

*Jakoustic barrier certified laboratory results

Recent Jakoustic Barrier projects include:

Client	Project	Architect/Lead Contractor
ETNA	Commercial	Torwood Fencing
St Wilfreds School	Local Authority	Proctor Brothers Ltd
Budget Insurance	Offices	AHP Architects/ Savage & sons
Portland Homes	Residential	Jacksons Fencing
MOD	Commercial	Power Engineering
Octavia Housing	Commercial	McNichols
Bellwinch Homes	Commercial	Jacksons Fencing
Mr Ayling	Residential	Jacksons Fencing
WS Hunts Transport	Commercial	Jacksons Fencing
Private	Residential	OK Services (France) WS
ASDA	Commercial	Key Electrical
Butterfly World	Commercial	Jacksons Fencing

Jakoustic[®] Barrier System

Features

- Attractive timber construction
- Unique tuning fork design posts
- Special fixings clamp acoustic boards between posts
- Can accommodate changes in level or profile
- Complete with capping and counter rail

Benefits

- Up to 28dB reduction in noise*
- Easy to install
- Able to be installed on uneven or sloping ground
- Jakcure 25 year guarantee

Applications

- Residential
- Commercial properties
- Construction sites
- Sports venues

The Jakoustic system includes our unique timber 'tuning fork' design posts and 125mm boards featuring an interlocking 'vee' coupled with a tongue and groove. This special profile has been carefully developed to locate the boards in such a way that eliminates gaps that sound could easily travel through, even when boards shrink and expand with changes in the weather. The fence is finished with a capping and counter rail.

Also known as Jakoustic Reflective, as the barrier reflects noise away.

It offers the additional advantages of:

- Lower labour requirements
- Quicker build on site
- More efficient storage and transport
- Improved acoustic protection

The timber posts used for most applications up to 4.0m high are a unique tuning fork design that traps the boards to provide continuous sound insulation. For barrier heights from 2.1m - 4.0m the timber posts are reinforced with a steel spur, coated black.

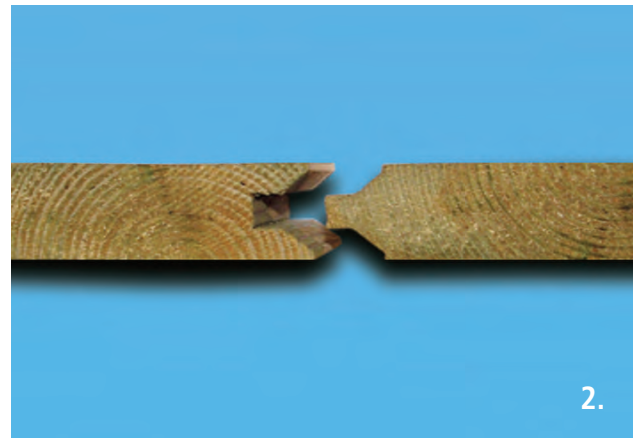
The Jakoustic system has been vigorously tested and developed to reach the high standards associated with all Jacksons' products.

Sound reduction achieved in tests on Jakoustic barriers

Distance from barrier	No barrier	Fence height 2m	Fence height 2.5m	Fence height 3m
5m	67.2dB	53.6dB	50.7dB	49.8dB
10m	61.5dB	50.2dB	48dB	47.7dB
15m	58dB	47.7dB	45.5dB	45.1dB
20m	55.2dB	46dB	43.3dB	42.8dB

The data shows the results from measurements taken during a field trial, which simulated the latest British Standard test procedure for acoustic fencing in a practical location. The generated noise source was directly behind the barrier - barrier length 9.6m

*Jakoustic barrier certified laboratory results: Rating according to BS EN 1793-2:1998 Category=B3 Laboratory sound reduction 28dB Approximate Superficial Mass 28kg/m²



1. Jakoustic fence in car park showing reinforced steel spur post
2. Interlocking 'vee' join
3. Jakoustic fence run in garden



Call the Jakoustic team on FREEfone 0800 41 43 43

12k Envirofence

Features

- 123mm boards
- 20mm x 125mm x 4.8m thick boards
- Attractive timber construction
- Only available in reflective
- Achieves the planning/architects normal acoustic specification of 10 - 12kg per sqm

Benefits

- Able to be installed on uneven or sloping ground
- Jakcure 25 year guarantee
- Easy to install

Applications

- Parks
- Schools
- Residential
- Demarcation
- Low - medium risk

A lighter 20mm thick board than our other Jakoustic barriers, maintaining the same 123mm cover face. Planed tongue and grooved boards with small chamfers which form a 'vee' join between boards. Suitable for installation where the required noise reduction is lower than that which would be provided by the standard Jakoustic noise barrier - or where a superficial mass of 12kg/m^2 is specified.

Envirofence offers customers on a more restricted budget the opportunity to reduce the impact of unwanted noise via a value for money acoustic system.

Capping rail is 34 x 145mm x 4.8m, Counter rail size 34 x 70mm x 2.4m

Can be used with steel 'I' beam arrangement for additional strength.

This fencing system cannot be used with/upgraded to Jakoustic Plus (Absorptive).

Please note the 12k Envirofence is not certified.

Standard Dimensions

Height	Post length	Spur Posts
2.0m	2.9m	N/A
2.5m	3.4m	2.0m
3.0m	3.9m	2.5m
3.5m	4.4m	2.7m
4.0m	4.9m	3.3m



1.



2.

- 1. Side of 12k Envirofence showing 'vee' joint
- 2. Board detail
- 3. Run of 12k Envirofence



3.



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Jakoustic Plus Barrier

Features

- Timber construction
- Unique tuning fork design post or 'I' beam
- Special fixings clamp acoustic boards between posts
- Can accommodate changes in level or profile
- Complete with capping and counter rail
- Jakoustic barrier with additional absorptive layer covered with protective membrane

Benefits

- Up to 32dB reduction in noise*
- Easy to install
- Able to be installed on uneven or sloping ground
- Jakcure 25 year guarantee

Applications

- Residential
- Commercial properties
- Industrial
- Sports venues
- Railways

Both our Jakoustic and Jakoustic Highway systems can be upgraded to the Plus systems.

Also known as Jakoustic Absorptive, as the barrier incorporates an absorptive layer, covered with a protective membrane on one side of the boards to further reduce noise by an average of 4 dB.

Jakoustic Plus is ideal in applications where the screen is to be used to form a compound around a noise source or a noise source is surrounded with reflective surfaces such as high fencing and buildings. Also ideal where the noise source is in a tight confined space and can be open to secondary deflection.

The following sound reduction measurements were conducted at the AIRO (Acoustical Investigation & Research Organisation Ltd) Acoustic laboratory, using a purpose built sound transmission suite.

Results

Frequency (Hz)	Sound Reduction (dB)	Frequency (Hz)	Sound Reduction (dB)
100	20.8	800	38.1
125	21.6	1000	40.4
160	22.2	1250	42.0
200	22.8	1600	44.6
250	25.8	2000	47.1
315	28.0	2500	47.9
400	30.6	3150	46.4
500	33.2	4000	49.1
630	34.9	5000	51.3

*Jakoustic plus barrier certified laboratory results: Rating according to BS EN 1793 – 2:1998 Category = B3 BS EN 1973 - 1:1998 Category = A3
Laboratory sound reduction 32dB Approximate Superficial Mass 33kg/m²



1. Jakoustic Plus fence run
2. Back of Jakoustic Plus fence run showing the absorptive layer (standard design)
3. Back of Jakoustic Plus automated gate 4m x 9m opening with bespoke design



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Jakoustic Highway

Features

- Available as Jakoustic or Jakoustic plus barrier
- Galvanized steel 'I' beam post
- Timber interlocking 'vee' boards
- Can accommodate changes in level or profile
- Optional timber capping, counter rails and post cladding
- Can be supplied in accordance with 'National Highway Sector Scheme 4'

Benefits

- Up to 28dB* or 32dB** noise reduction
- Meets stringent Highways agency standards BS EN 1793 - 1:1998**
BS EN 1793 - 2:1998 BS EN 1794 - 1 and 2
- Able to be installed on uneven or sloping ground
- Jakcure 25 year guarantee
- Ideal for high wind loading situations
- Easy to install
- Additional absorptive layer available to further increase sound reduction (see Jakoustic plus***)

Applications

- Residential
- Commercial properties
- Industrial
- Sports venues
- Railways
- Construction sites
- Highways

This latest acoustic barrier system has been designed for Highways and Commercial applications, providing the same level of noise protection as the Jakoustic Barrier.

Jakoustic Highway 'vee' boards are affixed to galvanized steel 'I' beam posts for additional strength and rigidity, meeting not only the stringent Highways Agency standards BSEN1794-1 and 2, but also prove ideal for application in exposed locations subject to high wind loading.

The system can also be offered with capping and counter rails to further enhance its appearance. Posts can be timber-clad to match.

Jacksons Fencing can treat the timber in accordance with the National Highway Sector Scheme 4 standard, please ask for details.

Jakoustic Highway System includes galvanized steel 'I' beams with nailing battens to be bolted to the front of the posts. 4.8m long interlocking 'vee' boards are then nailed and timber lock screwed to the front of the railing battens. Cover boards are required on every steel posted job. Capping and counter rails are additional options.

Posts may be baseplated or latticed depending on application.

Jakoustic Highway barrier certified laboratory results: Rating according to BS EN 1793 – 2:1998 (Category = B3)

BS EN 1794-1:2003, Annex A,B,C & E BS EN 1793-1:1998 (Category = A3)**

Designed in accordance with BS EN 1794-2:2003 (Detailed compliance statements available) National Highways Sector Scheme (NHSS) 4

Jakoustic Highway Laboratory sound reduction 28dB Superficial Mass 28kg/m²

**Jakoustic Plus Highway Laboratory sound reduction 32dB* Superficial Mass 33kg/m²



1.



2.

- 1. Jakoustic Highway showing part of steel 'I' beam post
- 2. Back of Jakoustic Highway fence run
- 3. Jakoustic Highway fence run



3.



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Jakoustic Gates

For a totally integrated, acoustic fencing solution we offer matching Jakoustic timber or galvanized steel framed gates. Configured as singles or pairs, to BS EN 1461 in Jakoustic or Jakoustic Plus, in swing and tracked sliding designs for manual or automated operation.

Swing Gates

Available in a range of sizes from 2m x 1m pedestrian to 5m x 5m wide per leaf for vehicle access. Swing gates can be hung on timber or galvanized or galvanized and powder coated steel posts dependent on size with optional lintels.

Tracked Sliding Gates

Available in a range of sizes, please ask for more details. The largest tracked sliding gate to date that Jacksons have manufactured and installed is 3.5m high x 21m wide leaf - but we can do larger!

When specifying gates of an extraordinary size please consider automation as this is essential for Health and Safety. Jacksons can automate any size gate.

Line drawings are available for pedestrian single, metal framed pair of swing and tracked sliding gates.



1. Double leaf manual swing Jakoustic gate - 4m x 3m
2. Double leaf automated swing Jakoustic gate - 2m x 4m
3. Sliding automated gate - 4m x 9m opening (14m leaf)



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Case Study - residential Property

"We couldn't enjoy a normal conversation in the garden . . ."

Back in the early 1970s, Stone Street in Kent was a relatively quiet country lane. Over time, the road has got busier, with cars travelling at speeds exceeding 50 miles per hour. Traffic noise has become a real nuisance for some of the residents, who can no longer enjoy a comfortable conversation in their gardens above the disturbance from the road. For Mr and Mrs Young of Canterbury, the solution was close to hand from Jacksons Fencing, and their new Jakoustic Barrier system.

The Youngs have been living in their home for 33 years now, and as the noise from the road has become louder and more persistent, they have considered two options: moving house, or installing a second line of fencing along the foot of their garden. The second option had been considered at length: they were investigating the possibility of an acoustic infill between the two fences to help deaden the noise.

As an existing Jacksons customer, with a 30 year old Jacksons fence, and two garden gates, Mrs Young decided to visit her local Jacksons centre to pick up the latest brochure. She was delighted to see Acoustic Barriers were now being offered to the domestic market. Traditionally a motorway fencing system, Jacksons have developed this idea to suit any application, with timber slotted posts, and panels made of 34mm thick boards in an attractive tongue and groove design, all guaranteed for 25 years.

Jacksons Fencing installed Mr and Mrs Young's Jacksons Acoustic Barriers back in 2005 and they are overjoyed at the huge difference these have made to the sound levels in their garden, commenting, "now the traffic noise is on the road, not in the garden!"

Friends and neighbours have admired the attractive appearance of the fence, and are amazed that it is now possible to hold a normal conversation in the garden. Mrs Young is already considering further garden improvements, now that she will be spending more time in it. The next project is the installation of a hot tub, surrounded by timber decking.

Mrs Young would recommend Jacksons Fencing to anyone, particularly the Jakoustic Barriers, as she believes they would benefit so many people by protecting them against noise pollution.



Case Study - leading supermarket outlet

Locating a supermarket within a residential area makes a great deal of sense in terms of serving consumers living in the local community. But it brings with it a unique set of considerations, not least shielding local residents from the noise associated with the running of a major mixed retail outlet. This was the conundrum faced by a leading supermarket in Leicestershire that is located in the middle of a flourishing housing development.

The architects working on this project recommended the installation of acoustic fencing, both around the perimeter of the staff car park that backs onto housing, and around the service yard where deliveries are received. In addition, two gates were required, one to span a 9m opening to enable HGV access to the loading bays and another to provide authorised personnel with easy entry to the waste compactor. After recognising the specialist and bespoke nature of the task in hand, the contractors and architects were keen to deliver a solution that met both the performance and aesthetic considerations of the project. A decision was made to contact Jacksons Fencing, who is not only the designer and manufacturer of the revolutionary "Jakoustic" acoustic barrier, but as a company, is committed to working in partnership with architects, specifiers and contractors to deliver inventive solutions to site-specific problems.

Following an initial site visit by an Acoustic Engineer and one of Jacksons regional Fencing Managers, the design team at Jacksons reviewed the outlined plans. A few concerns were flagged up, the most significant of which related to the 4m high double automated swing gates for the 9m opening. This was decided to be unsuitable as could be subject to high wind loading and potentially pose a health and safety risk. In addition, the gates would have failed to meet the required acoustic levels. The smaller gate that was to provide access to the waste compactor, initially was a 3m single leaf automated gate, however it was thought that the opening would not be wide enough for easy skip manoeuvring. This gate was to have an outward automation, but this presented a safety risk to members of staff and public that had access to that area.

The Jacksons design team were quick to identify solutions to these problems. For the large gate that was needed for the 9m opening, a 4m high x 13.2m long sliding gate was designed and approved. This gate was likely to be one of the largest acoustic gates ever produced and was certainly no standard construction. The single leaf automated swing gate that was to provide access to the waste compactor was replaced with a 4m high x 3.5m wide double leaf manually operated gate. Both these gates were constructed with the absorptive backing panels facing the loading yard and waste compactor to preserve the high levels of noise protection.

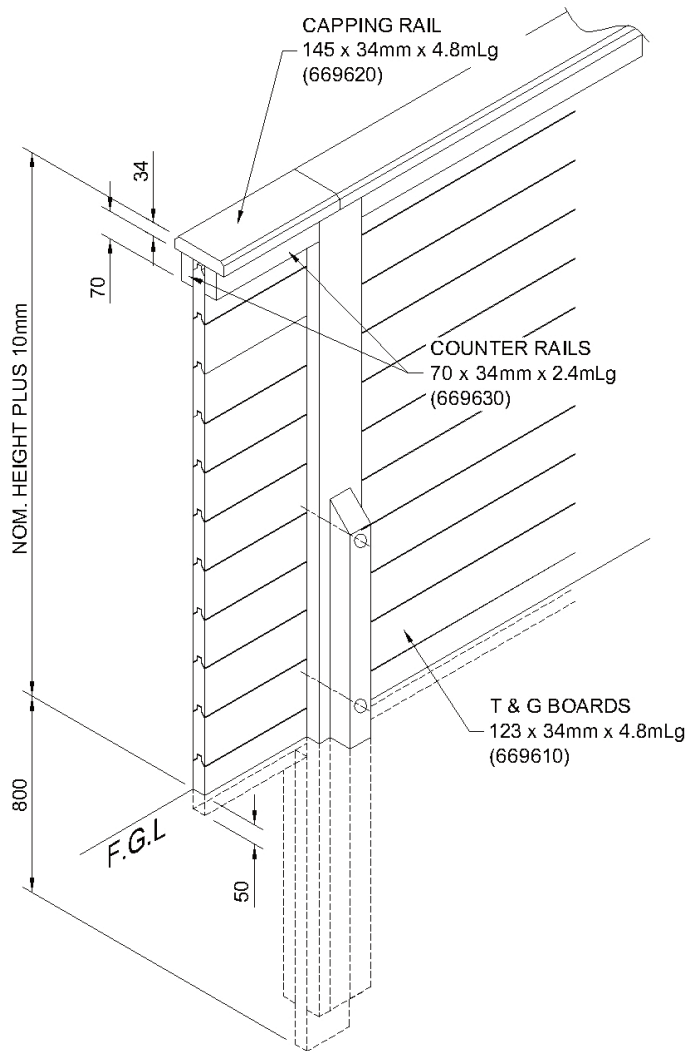
In addition to the creation of the two Jakoustic gates and a compound of two-sided Jakoustic fencing around the service yard, the project also involved the installation of 185m of 2.4m high Jakoustic reflective barriers to segregate the staff car park from the neighbouring housing. Whilst the reduction of noise was the prime consideration, this element of the project also demanded attention to detail in terms of delivering an attractive fence. The attention to detail even extended as far as incorporating a mini Jakoustic gate to enable a lamppost, to be lowered into the car park.

The entire installation took approximately 5 weeks to complete. The efficacy of the acoustic barriers has been well received and numerous favourable comments have also been made on the attractive landscape created by the new acoustic barriers.

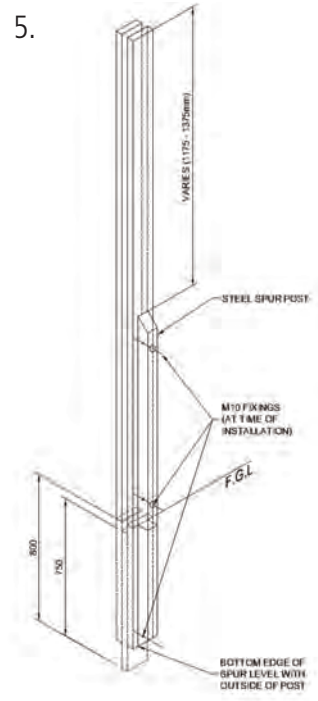
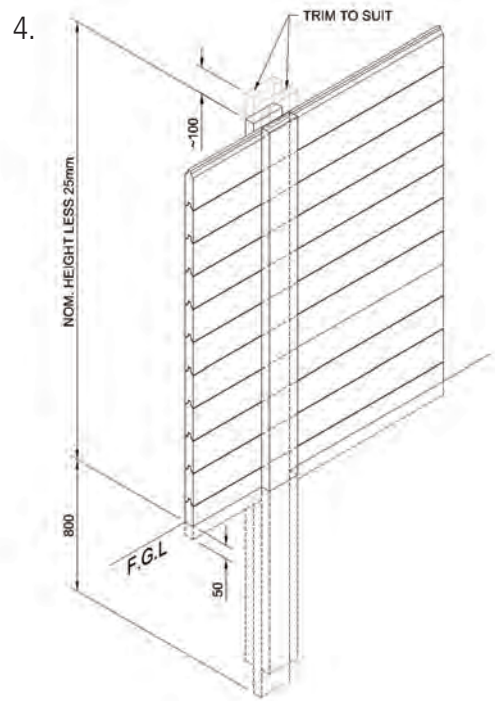
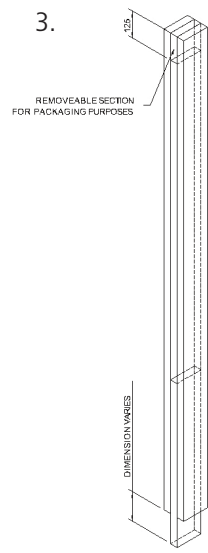
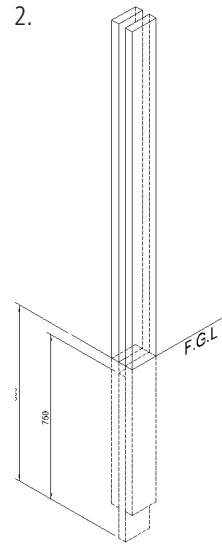
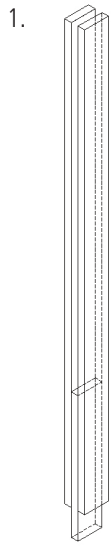


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Jakoustic Post and Fence assembly

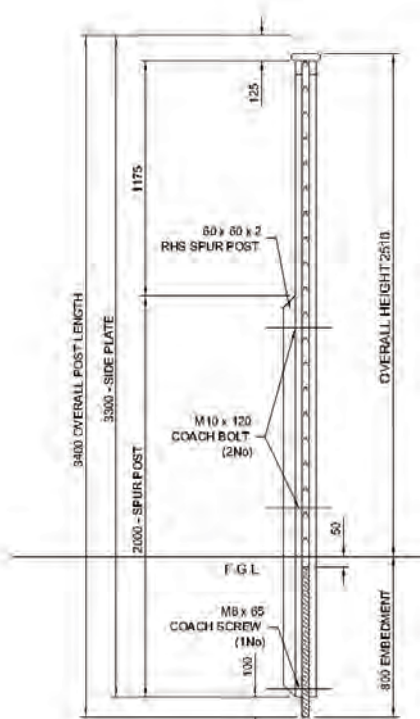


1. Posts are made with 'solid' bottom sections for below ground, with the top sections remaining 'open' for clamping the boards.
2. Posts are designed to be sunk into the ground to depth of 800mm. The centre section of the post is 750mm long. This allows the bottom fence board to act as a gravel board to a depth of 50mm into the ground.
3. The bottom of the side boards will not go to the full depth of the post hole.
4. The post sides extend 125mm above the nominal height of the fence (for standard heights). Once the fence is erected they are trimmed to the same level as the top board. This arrangement facilitates any variations in board dimensions caused by moisture content. The Fence Erector needs to apply new Jakcure End Grain Preservative to cut post tops.
5. Fence systems above 2.0m high will have a steel spur post fitted to the post shown. They are designed to support the fence up to a height of 1.2 - 1.4m below the finished level of the fence. These spur posts are sent separately, for fixing to the timber post during installation on site.
6. The screws should be used to secure completed rows of boards as the height of the fence is gradually built up, in order to maintain its strength during the build. Do not assemble the full height 'loose' as there is a risk of collapse, especially in windy conditions.

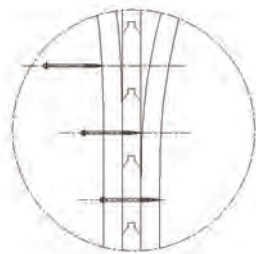


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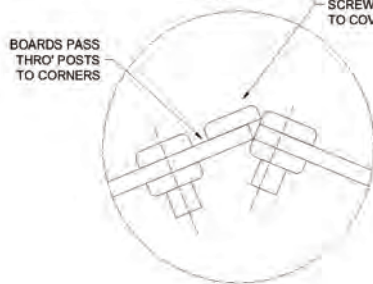
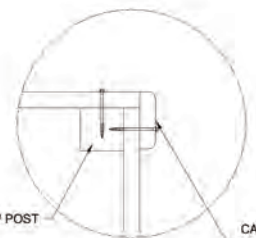
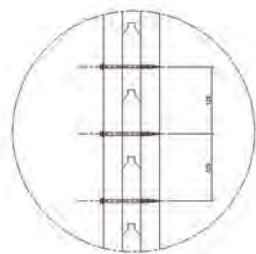
Jakoustic Installation



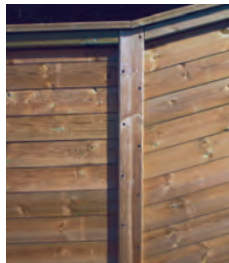
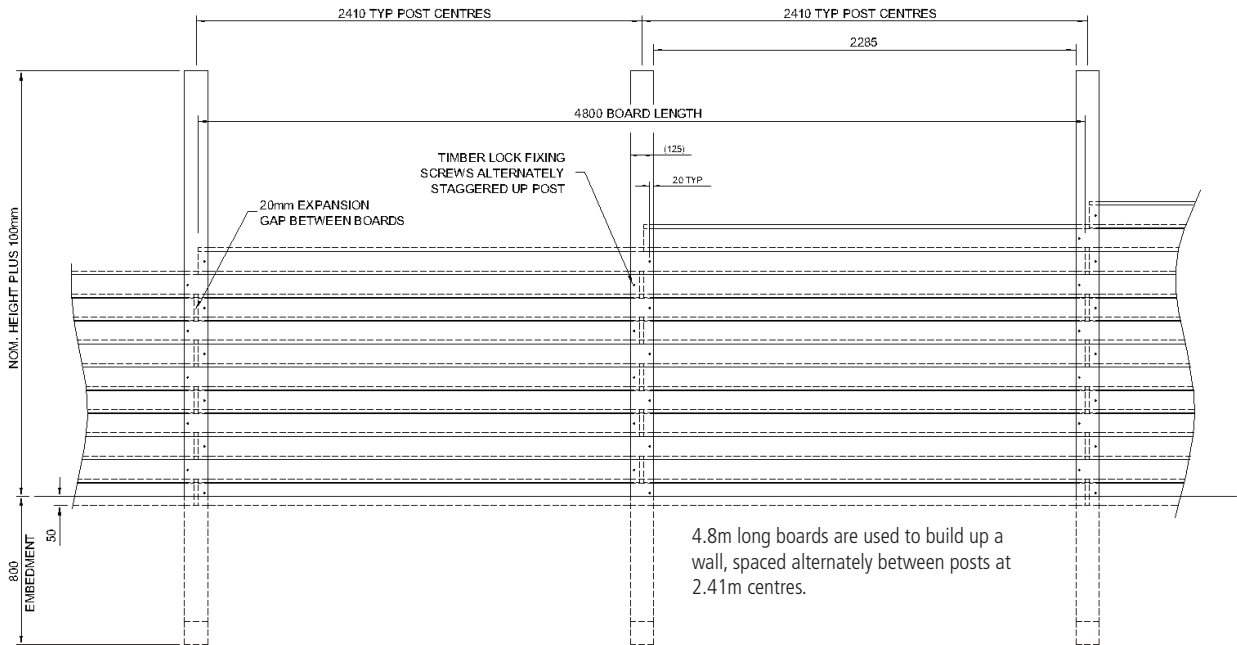
Example - 2.5mH



Screws are carefully chosen to have an effect of clamping the post sides to the board. This improves the acoustic properties of the fence eliminating gaps between panels and posts.



This diagram gives details of how a corner may be configured. Examples shown are 90° and 135° - all angles are possible.



Boards are 'bricklaid' and screwed as shown, giving a requirement of 2 No Timberlock screws per board. The screw positions should be staggered alternately from one side to the other, in order to prevent the post side cupping.

Top sections are finished with a capping rail and counter rail. The latter is provided to cover any gaps between the boards and the rail and leave a professional finish.

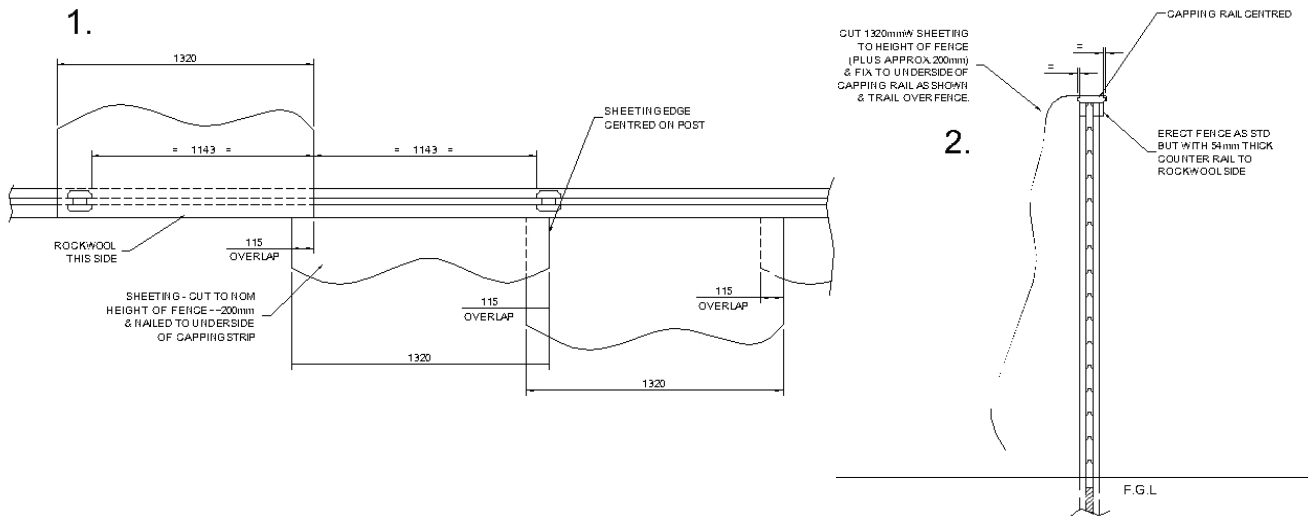
This change in level demonstrates how the boards can accommodate variations in profile at post intersections.

Nominal fence height above ground (m)	Actual height above F.G.L (mm)	Nominal post height above ground (mm)	Nominal post depth below ground (mm)	Hole base to post cap (mm)	Post side to post base dimension	Spur post item code	Spur post length (m)
2.00	1975	2100	800	2900	200	N/A	N/A
2.50	2475	2600	800	3400	100	669999	2.00
3.00	2975	3100	800	3900	0	669998	2.50
3.50	3475	3600	800	4400	200	669995	2.70
4.00	3975	4100	800	4900	100	669994	3.30

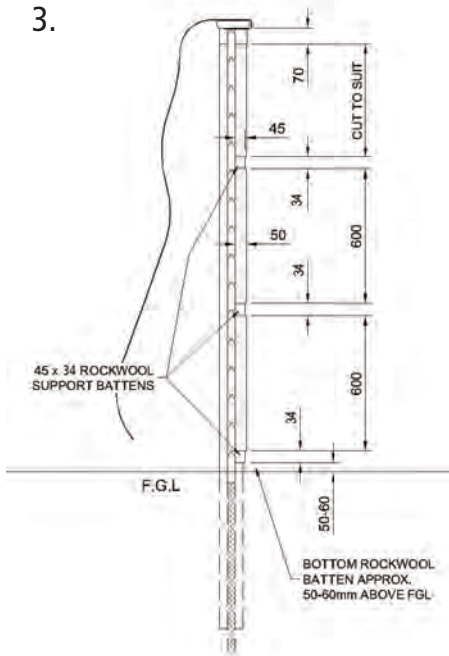
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Jakoustic Plus Barrier Installation

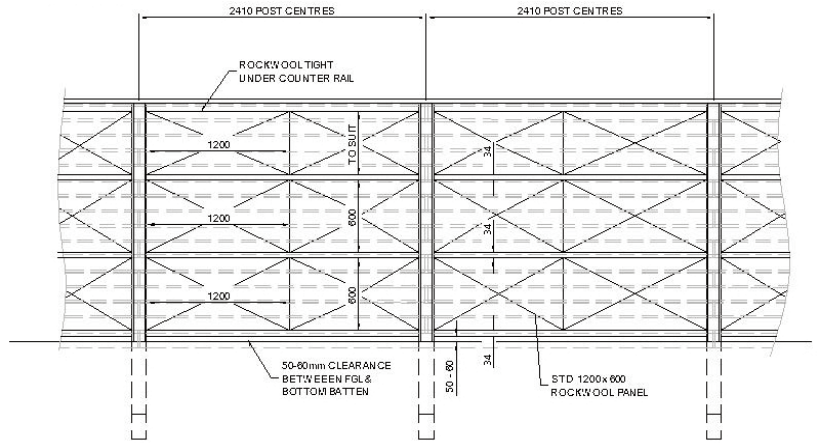
1. The sheeting must be cut to length and fixed under capping rail. Care must be taken to centre the joins on and between the posts.
2. The counter rails are odd sizes - the Rockwool covered side has a 70 x 54mm counter rail. The capping strip is to be centred on the counter rails, with the pre-cut strips of sheeting nailed to the underside as shown.
3. Rockwool panels are to be fixed to the face of the fence. Using 45 x 34mm x 2.27m battens (nailed through the 45mm thickness) and 75mm nails to support the weight, the fence is to be clad with Rockwool sheets.
4. Rockwool panels are to be laid horizontally and cut to suit as necessary.
5. Plastic membrane sheets to be returned to correct size of fence. These are pulled taut around a 45 x 34mm batten and fixed to the fence under the bottom Rockwool batten.
6. The fence is finished with weathered 50mm half-round timbers, fitted vertically or at an angle at nominal 300mm centres and to suit membrane width. These timbers will cover joins in the sheeting and protect the Rockwool. The testing was performed with battens at 200mm centres.



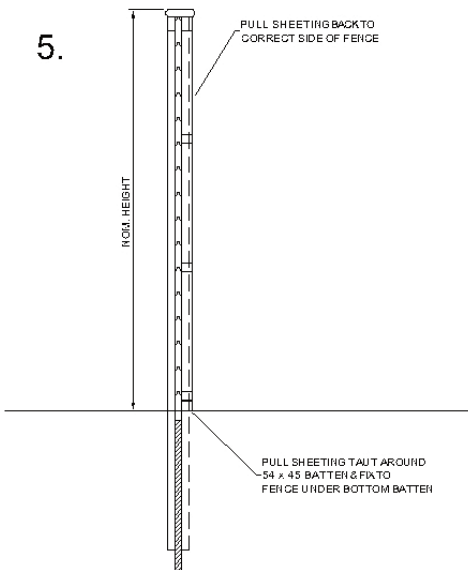
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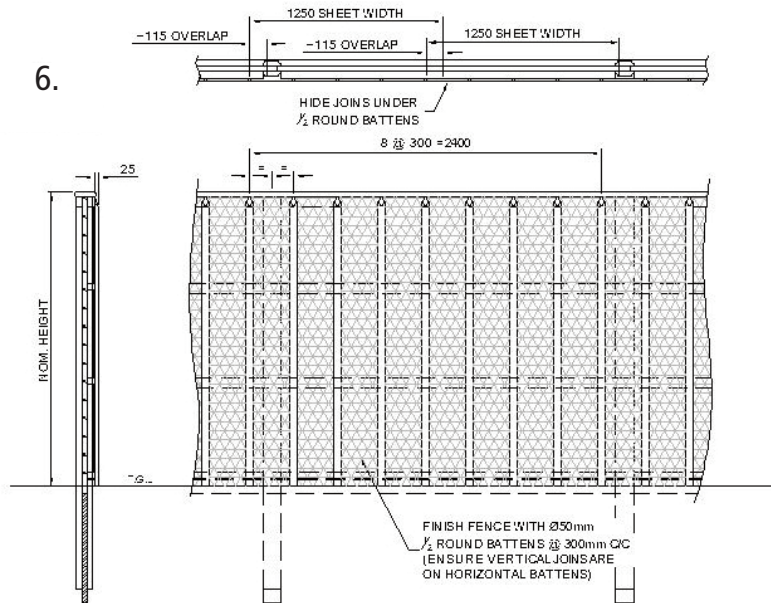
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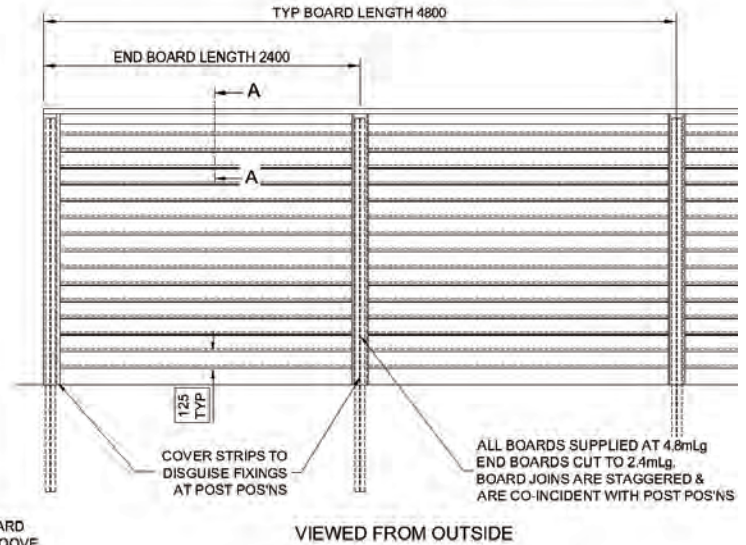
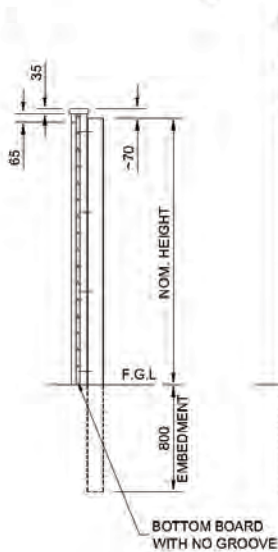
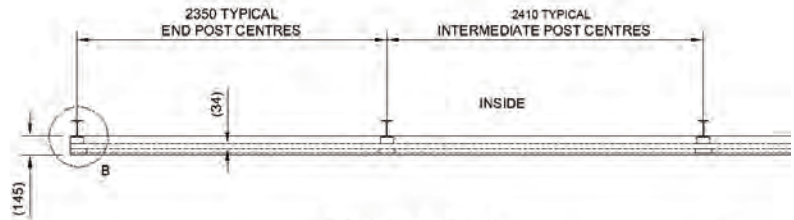
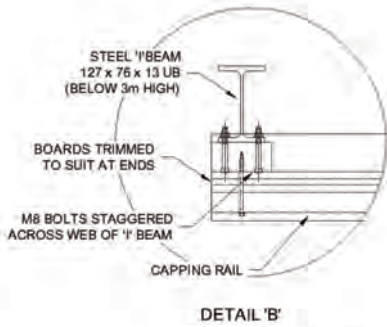
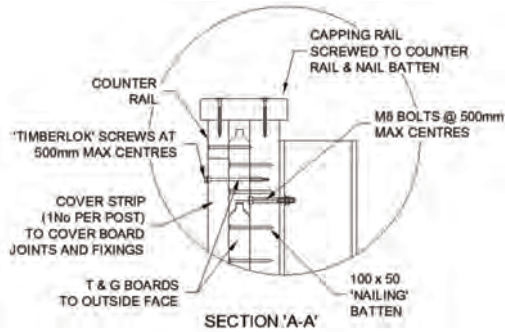
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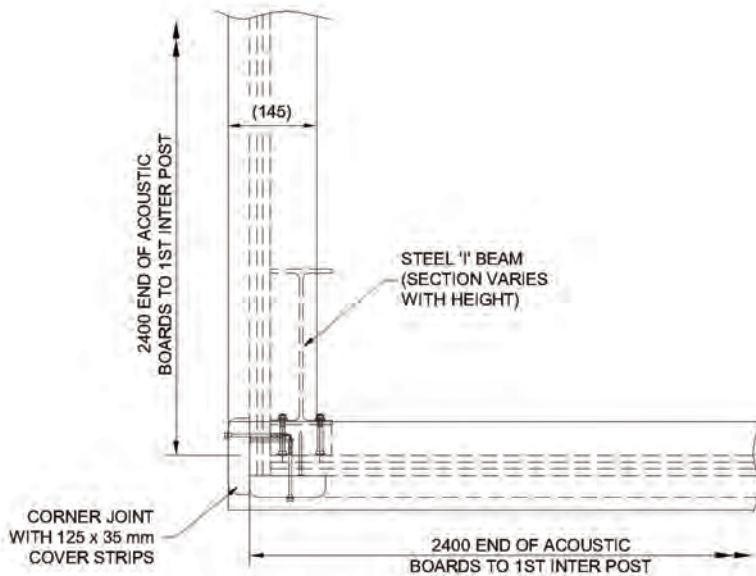


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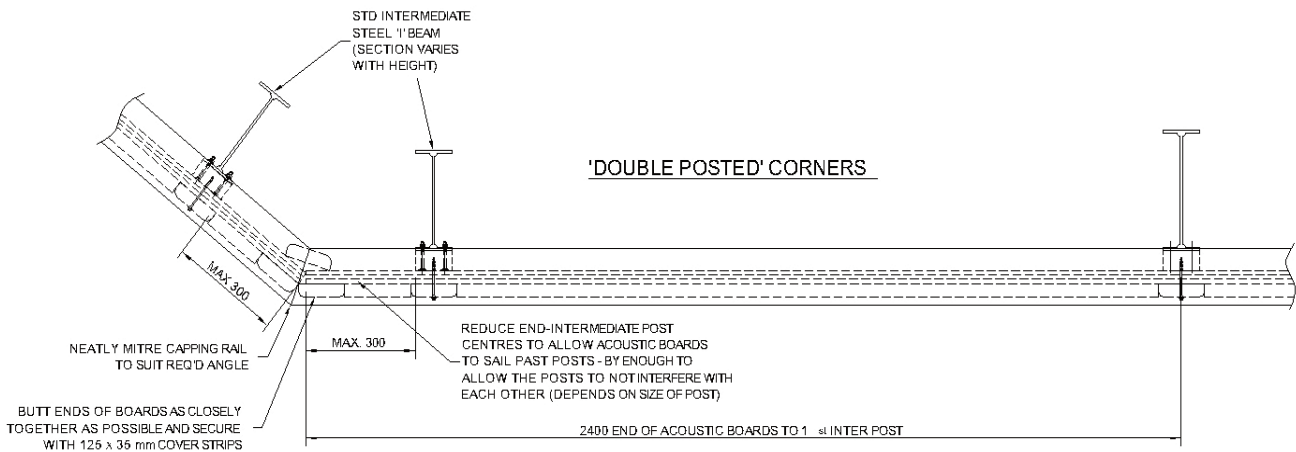


Jakoustic Highway Installation





CORNERS - 90°



'DOUBLE POSTED' CORNERS

Jakoustic Projects



Grimshaw Kinnear - 100m of 3m high Jakoustic fencing



Torwood - 450m of Jakoustic Highway from 4m to 6.5m high



2m high x 1m wide gate within 3m high Jakoustic fencing



Butterfly World - 205m of 1.8m high Jakoustic fencing

For further information, UK and International enquiries, please contact the Jakoustic team on **0800 41 43 43** or **+44 (0)1233 750393** or email acoustic@jacksons-fencing.co.uk
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Fine Fencing, Gates and More

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