

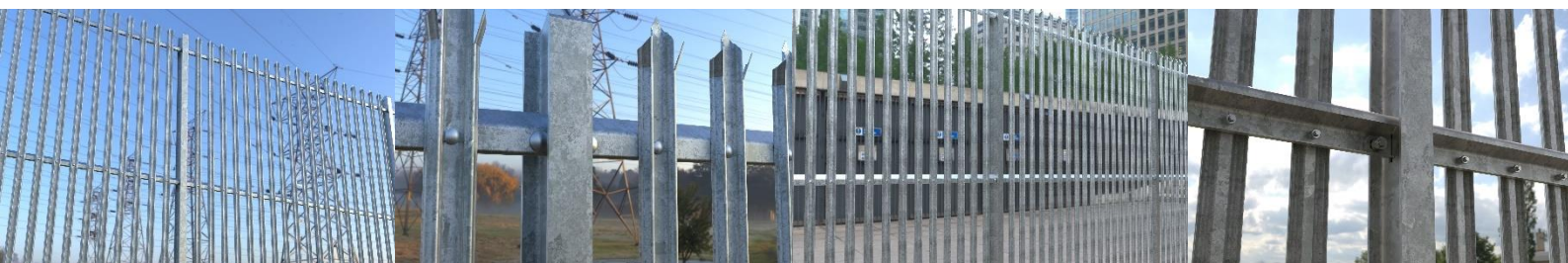
PaliFence[®] SR1 (A1)

Operations, Maintenance & Installation Manual

Fence Systems 1.8m, 2.0m, 2.1m, 2.4m & 3.0m



RedBookLive



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1.0 Copyright and Disclaimer

Disclaimer

While every attempt has been made to verify the accuracy of the content in this manual upon its release, we cannot accept liability for any losses or damages resulting from inaccuracies. All tasks outlined must be carried out by certified professionals. Any deviation from these instructions nullifies any guaranteed entitlement or liability from the manufacturer.

Copyright

The copyright of this manual is owned by First Fence Ltd and is protected at all times. Reproduction of this manual by any means is strictly prohibited without prior written consent from First Fence Ltd.

Contact

For inquiries regarding PaliFence®, LPS 1175 standards, deviations, the contents of the manuals, or technical specifications, please direct your questions to:

The Product and Drawing Office Manager
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2.0 Preface

O&M Guide

The PaliFence® O&M manual will detail the standard requirements, safety, site assessment, installation and bill of materials associated with the PaliFence® fence range.

LPS 1175 Outlined

LPS 1175 is a security standard developed by the Loss Prevention Certification Board (LPCB) in the United Kingdom. It specifies requirements and testing procedures for the resistance of various security products, including fences, to forced entry attempts. Fences that meet the LPS 1175 standard are rigorously tested against different levels of attack, providing assurance of their effectiveness in deterring intruders and protecting property.

Certification

The PaliFence® range is designated with an "SR1 (A1)" rating, providing basic resistance against forced entry attempts, and deterring opportunistic intruders. The tools used for such attempts, as outlined in LPS 1175 issue 8.1 table 1, include handheld implements easily concealed and wielded by opportunists.

A copy of the LPS 1175 standards can be obtained via the BRE or directly from the contact details in section 1.0.

A copy of the PaliFence® LPS 1175 certificate can be obtained on the <https://firstfence.co.uk>

A copy of the PaliFence® Red Book Live listing can be obtained on www.redbooklive.com

Component and Material Registers

All materials and components used in the production, storage, and distribution of PaliFence® are sourced and documented within the PaliFence® Drawing Register, Material Register, and Critical Components list.

These undergo an LPCB Factory Production Control (FPC) audit at least once per year to ensure compliance in manufacturing and storage of any certified LPS 1175 products.

3.0 Safety

Competence

The PaliFence® range must be installed by a person of competence, defined as an individual who possesses the necessary knowledge, skill, and experience in the installation of fences and gates.



Liability

The installation guide should be understood and followed in section 5.0 before any installation activities commence. If any area of the installation is unclear, the installer must contact the manufacturer, outlined in section 1.0 'Contact.' First Fence Limited take no responsibility for incorrectly installed systems, product, material or components.

Personal Protective Equipment

Site specific installation methods should always be followed, in addition to using the following PPE equipment:



Risk Assessment

It is the responsibility of the installer to adhere to local risk assessments before installation, including and not limited to the following examples:

Activity	Risk Assessment Requirements and Not Limited to:
Breaking ground for post hole excavations	Noise Vibration Manual Handling
Post installation	Hazardous Substances (COSHH) Manual Handling
Installation of pales	Working at Height Noise Vibration
Installation of fixings	Working at Height Noise Vibration

4.0 Installation

Tools Legend

Safety Gloves

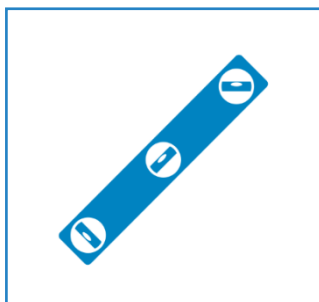


Required for all material handling

Required for any COSHH tasks including post mix

Required for any installation tasks

Spirit Level



Required for plumb installation of posts

Shovel / Excavation



Required for excavation of holes to suit post foundations

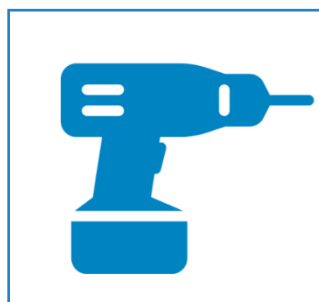
Time



Required for post mix curing time

Required for patched fixing curing time

Drill / Buzz Gun



Required for shear nut installation on pales and rails

Attack Face

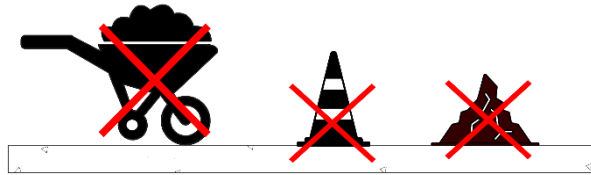


Defines the outside / attack side / face of the PaliFence® system

Site Preparation

Fence Line

Before proceeding with fence installation, it is crucial to physically mark out the intended fence line, remove any obstructions and gauge any changes in gradients.



1



Gradients

The maximum allowed gradient with the certified PaliFence® range is 30°. You can find out your site's angle of elevation by dividing the elevation (rise) by the distance (run), which can be achieved using a laser level and staff.



2



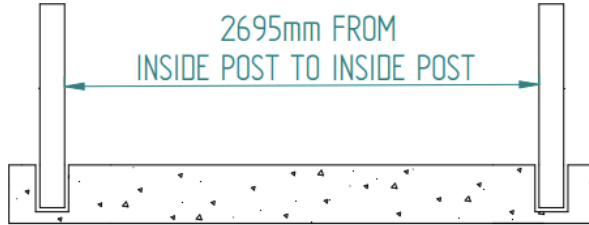
Note: For any area of installation on weaker substrates, verges or banks, First Fence Limited are able to provide longer posts for deeper in-ground contact.



For any areas that require a raked fence to accommodate a gradient (see appendix A example), a maximum of 30° is permissible under the PaliFence® certification. It is essential that the compulsory post centres are adhered to (see appendix B).

5.0 Post Installation

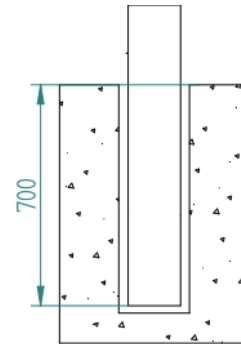
Excavate post holes at 2695mm from inside to inside post at a foundation depth of 750mm x 300mm x 300mm.



1



Insert posts ensuring to maintain 700mm of post below ground. If needed, make up any additional depth with loose compacted aggregate.

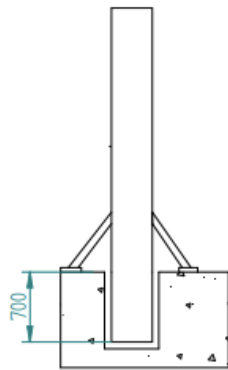


2

Note: if needed, mark 700mm onto the post to ensure sufficient post is out of the ground for the certified minimum height of the system being installed.



Secure the IPE posts in position with two wooden struts, as pictured below.

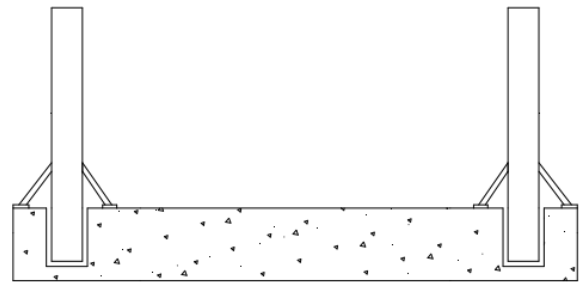


3

Note: if additional shuttering, cills or anti-burrowing measures are required this must not affect the foundation width or depth. Longer posts are available upon request.



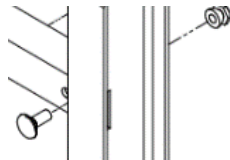
Repeat step three into the next foundation hole along.



4



Insert the fishplate through the bottom 50mm x 10mm slot in the RSJ. Then attach the M12 x 30mm patched bolt through the rail and secure with a shear nut. Repeat on the next post along.

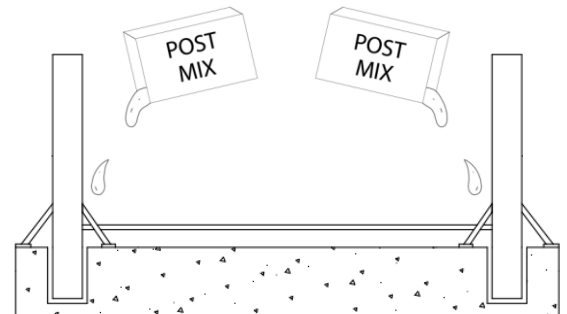


5

Note: this process allows for precise centres between posts, removing risk of a bay being too long or short. If unsure on rail installation process, refer to section 'Rail Installation.'



Pour post mix or concrete into the foundation using the recommended quantities, listed in Appendix C.



6

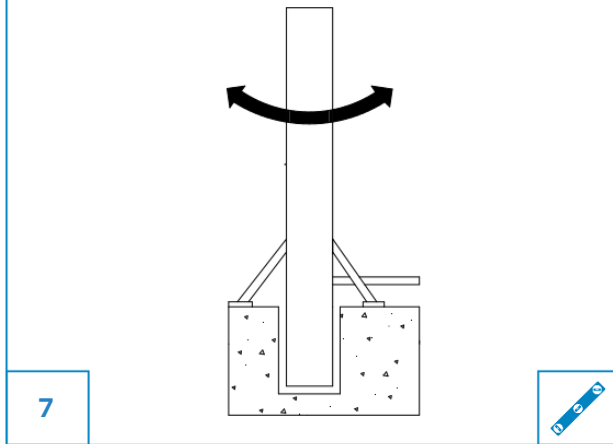


NOTE: Any deviations from the above installation guidance will potentially weaken the finished fence line, resulting in invalidation on the LPS 1175 SR1 (A1) certification!



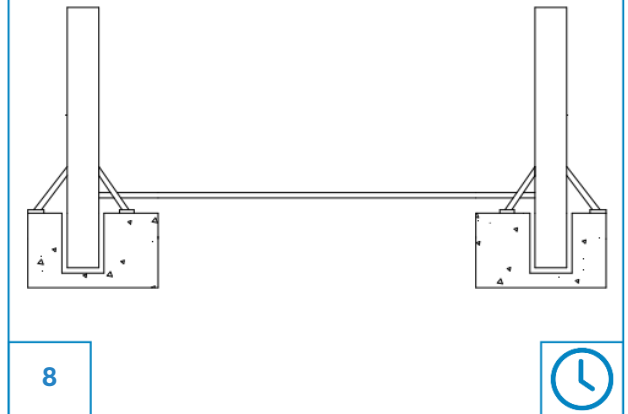
Post Installation (Continued)

Ensure the RSJ is plumb in both axis by using a level.
Check three times during the recommended curing time.



7

During the cure time, repeat steps 1 to 6 for the continuation of the fence line.



8



NOTE: Any deviations from the above installation guidance will potentially weaken the finished fence line, resulting in invalidation on the LPS 1175 SR1 (A1) certification!



For bolt down systems:

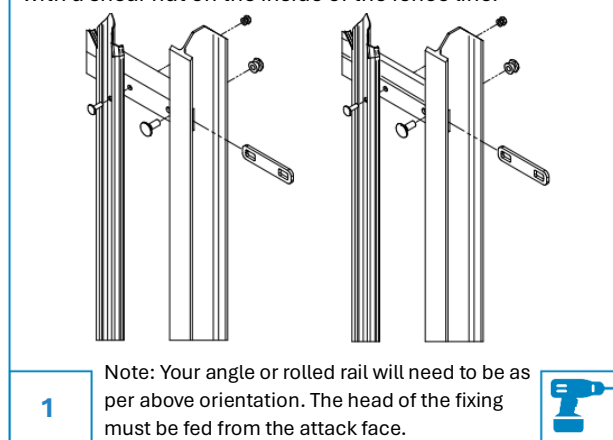
Follow the same spacing guidance as per step 1, ensure ground anchors are at least M12 x 125mm and that four are used per base plate.

All substrate material must be equal depth or greater than the length of the ground anchor and must be of solid concrete material (i.e. no loose asphalt or similar).

All holes to be clear of dust and debris to ensure maximum insertion of the ground anchor.

6.0 Rail Installation

To install the remaining two rails, insert the M12 patched bolt through the rail and through the fishplate, secured with a shear nut on the inside of the fence line.

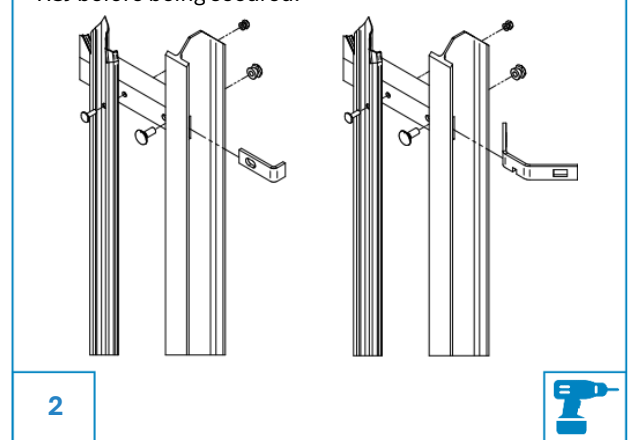


1

Note: Your angle or rolled rail will need to be as per above orientation. The head of the fixing must be fed from the attack face.



Corner and end fish plates should be installed as per step 1, ensuring the fishplates are inserted through the RSJ before being secured.



2

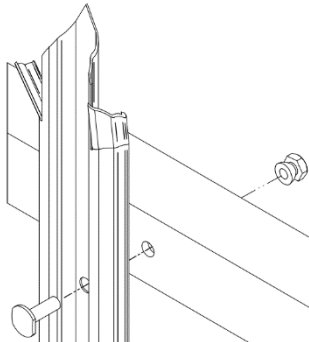


NOTE: PaliFence® has been developed to prevent an elliptical of 225mm x 400mm from passing through. Any gaps at the ends of a fence line between the post and static object should take this into account.



7.0 Pale Installation

Install the pale with the supplied M8 x 25mm patched T-Bolts in the corresponding hole with the adjacent rail and shear the nut off on the inside of the fence.

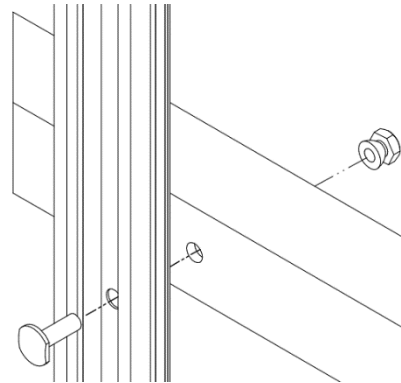


1

Note: T-Bolts will always be fed from the attack side. Any substituted bolts will invalidate the LPS 1175 SR1 (A1) certification.



Follow step 1 for the remaining rail (three rails in total per bay)



2



8.0 Patch fixing information



NOTE: PaliFence® rail and pale fixings have been developed specifically for the LPS 1175 SR1 (A1) testing. Any variations, substitution or adaptations to the below fixing specification will invalidate the certification!



What is a patched fixing?

When applied, the patch permanently fuses to the screw thread, increasing removal torque by acting as a wedge. This ensures the screw locks securely in any position during assembly, providing top-notch vibration resistance and torque for controlled loading in various applications.

Recommended installation advice?

Patched Fixing	Shear Nut Usage	Storage	Installation Temperature	Curing Time	COSHH
M8 x 25mm Patched T-Bolt	Must use galvanised shear nuts provided in the PaliFence® kit.	Must be stored in a dry environment, ideally more than 5°C	Fixings should be installed in temperatures greater than 5°C	Patched fixings reach maximum curation at 48 hours	No COSHH data to hand.
M12 x 30mm Patched Bolt					

Can Patched fixings be re-used?

For maximum strength, it is recommended to not re-use any patched fixings that shake or vibrate loose. A new fixing should be applied, following the above installation advice.

Can alternative fixings be sourced?

Installers must use the supplied fixings. Any deviations away from the specification will invalidate the certification.

9.0 Installation Sign Off Checklist



NOTE: to ensure PaliFence® remains within the certified scope and effective to LPS 1175 SR1 (A1) standards, it is essential the below checklist has been followed and signed off by the site supervisor.



Action	Description	System	Remedial Action	Pass or Fail?	Initial	Date
Bottom rail to be 200mm from the floor level	PaliFence® must maintain 200mm ground clearance from floor to rail, to prevent a 225mm x 400mm elliptical passing under.	Dig In / Bolt Down	If fail, re-install posts following 'Post Installation' step 2, ensuring only 700mm is buried below ground.			
Max 50mm ground clearance	Ensure the gap between the ground and pale is 50mm maximum gap.	Dig In / Bolt Down	If fail, re-install posts following 'Post Installation' step 2, ensuring only 700mm is buried below ground.			
Missing patched bolts	Pales installed without patched fixings	Dig In / Bolt Down	Remove the pale, don't sign off and ask First Fence Limited for replacement fixings.			
Patched bolts fitted the wrong way	Bolts thread through from the inside to the face, shear nuts on the outside	Dig In / Bolt Down	Remove the pale(s), don't sign off and ask First Fence Limited for replacement fixings.			
Misaligned pales and rail holes	Any pales that exceed 135mm centres	Dig In / Bolt Down	Replace the rails to ensure certified centres are maintained.			
Insecure bolt down posts	Bolt down posts that move under pressure from force including wind	Bolt Down	Ensure shims are used to maintain plumb level and guarantee maximum torque from the ground anchor.			
Above remedial action fails to stabilise posts	As per above	Bolt Down	Revert to PaliFence® Dig In system.			
Rails installed upside down	As per 'Rail Installation' Step One, rails to be installed in correct direction	Dig In / Bolt Down	Remove fixings, re-install using new patched fixings.			
Bent or Deformed Pales, Posts or Rails	Any deformity to the pale, post or rails caused potentially from transit or similar.	Dig In / Bolt Down	The pressures and forces applied during transit may invalidate certification if components are deformed before installation. Replace as necessary.			

Sign off declaration:

I hereby confirm that PaliFence® has been assembled and installed in accordance with the above requirements, and any remedial works have been carried out before the final signoff:

Site Supervisor

Sign off Date

Relationship to the Client

Signature

10.0 Maintenance Schedule

First Fence Limited recommends the following actions, to be built into a periodic check of the physical perimeter system:

Check Area	Result	Action
Deformed post, rail or pale	Deformation causing an opening bigger than specified on the drawings	If deformed due to manual force, conduct an analysis if PaliFence® meets your security requirements.
Surface damage to post, rail or pale	Chipped paint or exposed steel	Use a Zinc spray to slow down and prevent further oxidation of raw steel.
Shrubs, growth and trees	Force through natural growth	Ensure a clear shrubby line alongside both sides of the fence.
Loose shear nuts on pales or rails	Check if all shear nuts are secure by hand on the inside of the premises	If loose, replace the fixing immediately.

Take the hassle out of your maintenance schedule:

First Fence Limited offer an annual inspection programme for your certified LPS 1175 Fence and Gates, ensuring maximum chance of compliance at all times.

Included in Maintenance Schedule	Result	Actions
Annual perimeter check	Checking for and against the LPS 1175 standard: - Deformities - Deflection - Damage - Forced entry	A personalised quote to remedy any corrective works, if required
Annual gate service	As per above, and checking for: - Increased friction - Operational changes - Changes in operation since sign off	A personalised quote to remedy any corrective works, if required

Contact our LPS 1175 Product Champions today to include this quote onto your sales order.

highsecuritymaintenance@firstfence.co.uk

**Maintenance schedule fees vary based on size, layout and access of sites, on a site-by-site basis and certification basis. Multiple LPS 1175 ranges may incur an additional fee.*

11.0 Bill of Materials

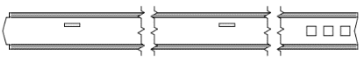
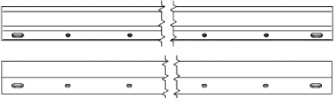
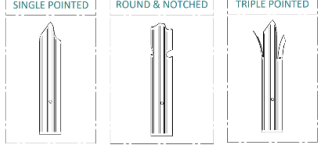
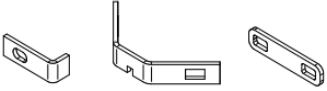
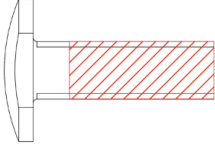
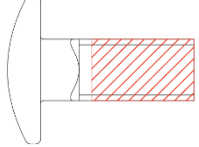
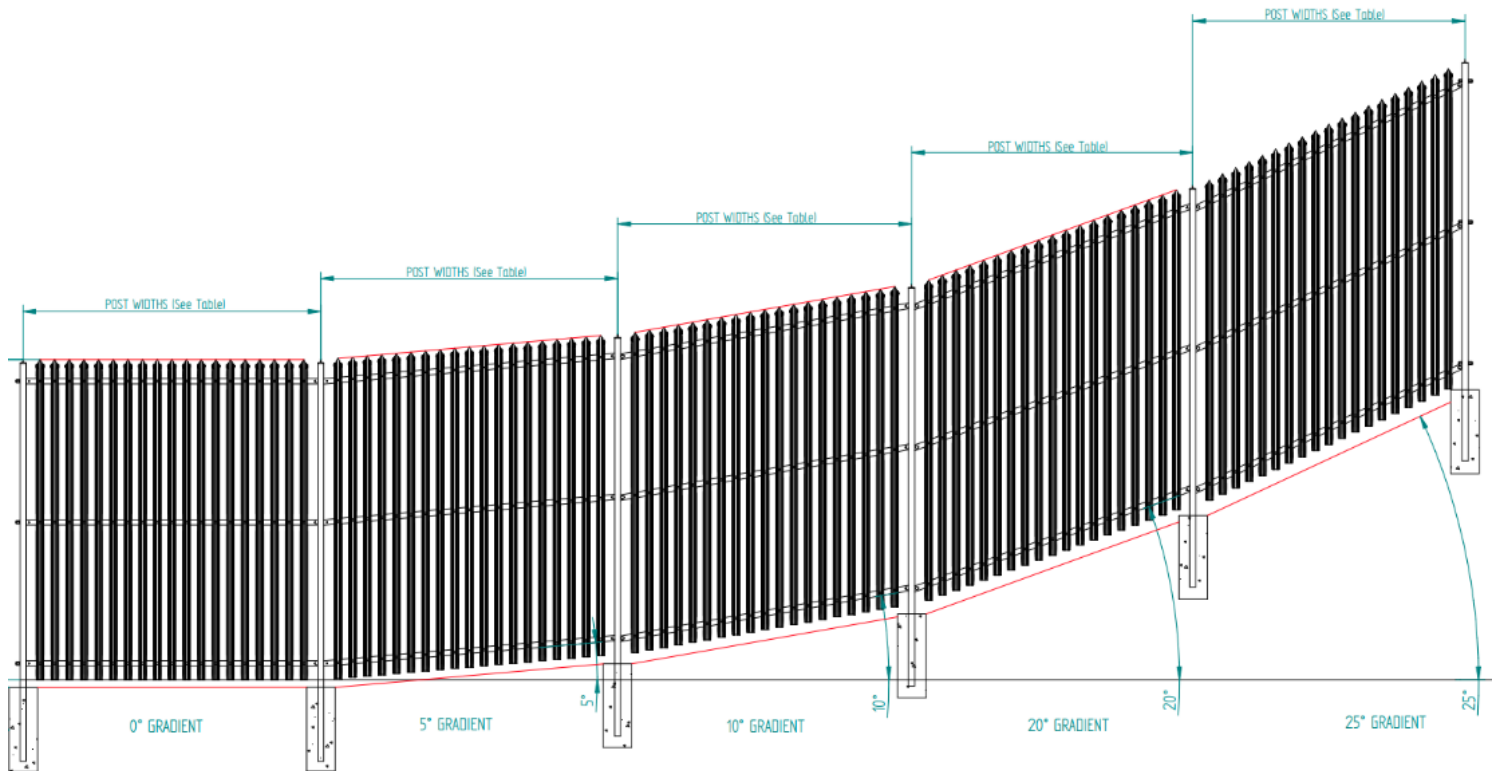
Image	Component	Qty (Per Kit)
	PaliFence® Post (See Table 1 for Actual Lengths)	1
	PaliFence® Rails (Angle or Rolled, depending on requirements)	3
	PaliFence® Pales	19
	PaliFence® Fish Plates (Straight, Corner and End Fish Plates sold in separate kit)	3
	Patched T-Bolt M8 x 25mm c/w Shear Nuts	57
	Patched M12 x 30mm bolts c/w Shear Nuts	6

Table 1

PaliFence® System	PaliFence® Post Length
1800mm Fence	2500mm
2000mm Fence	2700mm
2100mm Fence	2800mm
2400mm Fence	3100mm
3000mm Fence	3700mm

Appendix A : Example of PaliFence® raking up to 25°:



Appendix B : Permissible Post Centres on Gradients:

5° Gradient				10° Gradient				20° Gradient				25° Gradient			
Min Fencing post Height Above Ground Level (Min Dug-In)	Post Centres (mm)	Minimum Section Size (mm)	Pale Height for Gradient (mm)	Min Fencing post Height Above Ground Level (Min Dug-In)	Minimum - Maximum Post Centres (mm)	Minimum Section Size (mm)	Pale Height for Gradient (mm)	Min Fencing post Height Above Ground Level (Min Dug-In)	Minimum - Maximum Post Centres (mm)	Minimum Section Size (mm)	Pale Height for Gradient (mm)	Min Fencing post Height Above Ground Level (Min Dug-In)	Minimum - Maximum Post Centres (mm)	Minimum Section Size (mm)	Pale Height for Gradient (mm)
1.8m (700mm)	2735	49 x 63	1750mm	1.8m (700mm)	2705	49 x 63	1.8m	1.8m (700mm)	2590	49 x 63	1.8m	1.8m (700mm)	2505	55 x 100	1.8m
2.0m (700mm)	2735	49 x 63	1950mm	2.0m (700mm)	2705	49 x 63	2.0m	2.0m (700mm)	2590	49 x 63	2.0m	2.0m (700mm)	2505	55 x 100	2.0m
2.1m (700mm)	2735	49 x 63	2050mm	2.1m (700mm)	2705	49 x 63	2.1m	2.1m (700mm)	2590	49 x 63	2.1m	2.1m (700mm)	2505	55 x 100	2.1m
2.4m (700mm)	2735	49 x 63	2350mm	2.4m (700mm)	2705	49 x 63	2.4m	2.4m (700mm)	2590	49 x 63	2.4m	2.4m (700mm)	2505	55 x 100	2.4m
3.0m (700mm)	2735	49 x 63	2750mm	3.0m (700mm)	2705	49 x 63	3.0m	3.0m (700mm)	2590	49 x 63	3.0m	3.0m (700mm)	2505	55 x 100	3.0m

Appendix C

Post mix quantities:

PaliFence® Fence Height*	QTY (20kg bags)	Concrete Grade	Ideal Hole Size
1800mm (Above Ground)	2	C20/25	700mm (D) x 300mm (W) x 300mm (L)
2000mm (Above Ground)	2		
2100mm (Above Ground)	2		
2400mm (Above Ground)	3		
3000mm (Above Ground)	3		

*Fence height using specified length posts