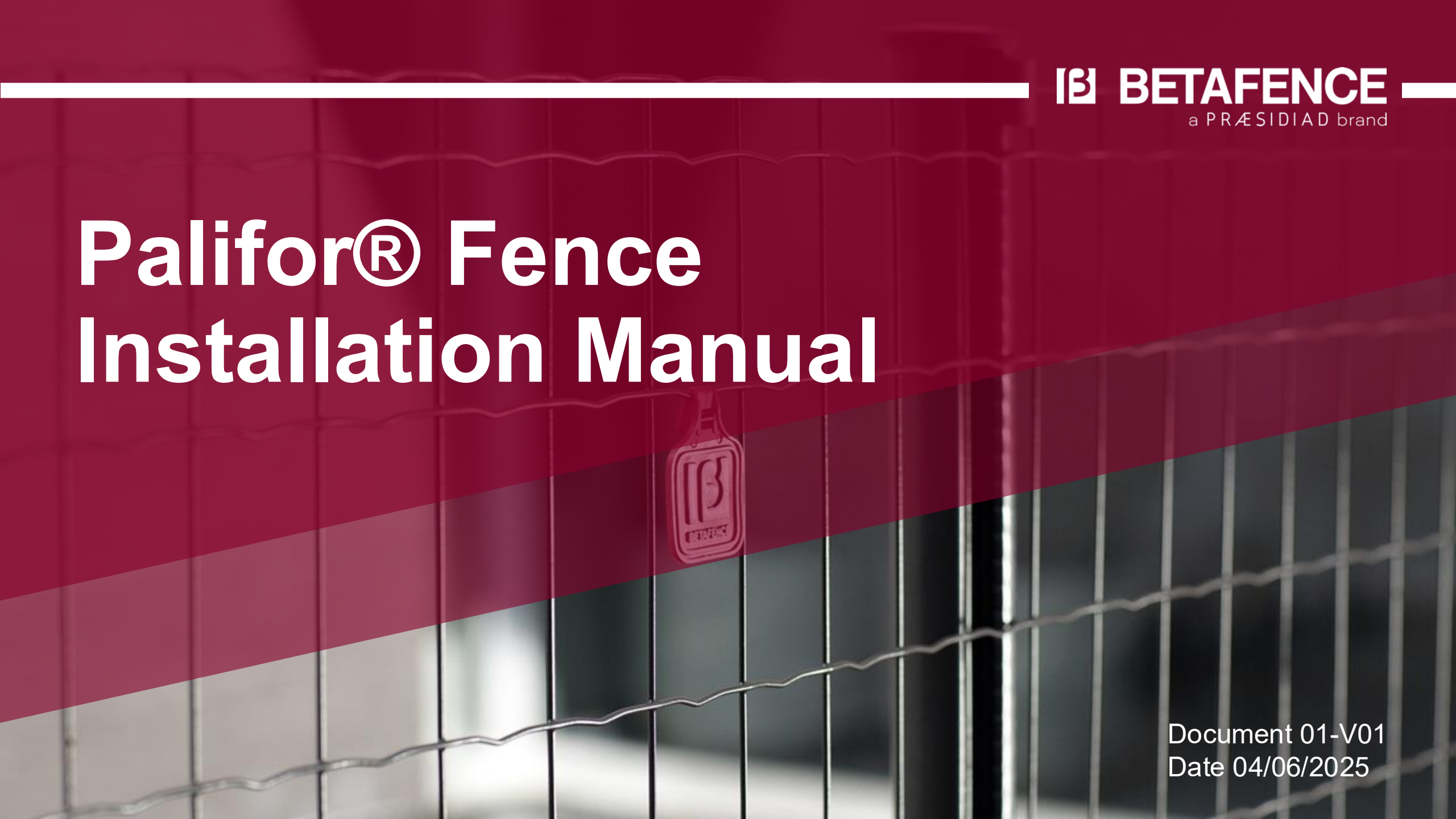
BETAFENCE
a PRÆSIDIAD brand

Palifor® Fence Installation Manual



Document 01-V01
Date 04/06/2025

System Overview

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- SR2 / B3 certified Palisade Fence with Embedded Posts and Post on Baseplates

1. 3000mm High 4 Rail System
2. 2400mm High 3 Rail System
3. 3 Types of Pale Toppings Available:
    1. Straight Cut
    2. Straight & Splayed
    3. Splayed and Bent
4. Various splice connections providing different connection options are offered namely:
    1. End & Corner Panel connections
    2. Intermediate Panel connections
    3. Angular Panel Connections
5. Various corner configurations are achievable with corner connections.

In this installation manual we will highlight the suggested steps for the installation of the SR2 Palisade System. The installation manual is typical for both Embedded and Base plate systems, both heights and applies to all types of Pale Toppings.

The suggested method for the fence installation is **'POST-POST-PANEL-PANEL'**.

System Overview

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- Tools Required for installation:

1. Spade/shovels
2. Picks
3. Plumbline/Fish Line
4. Dumpy Level (for set-out ground levels)
5. Set Levels
6. Socket Sets (M13 Sockets and Wrenches)
7. Spanner Sets (M13 Spanners)
8. Pegs
9. Tape Measures
10. Chalk Line
11. Wheelbarrows

- Equipment Required for installation:

1. Compactor
2. Vibrating Poker
3. Ladder (For 3m System)
4. Generator (If necessary)
5. Blow-Out Pump for drilled holes (for Base plate system)

- Materials Required for installation:

1. Clean water
2. Concrete Mix
3. 19 Stone
4. Dampcourse
5. Wooden or Steel Stay Supports
6. Shuttering (If necessary)

Installation Guide: Foundations and Post Set-out – Embedded Post System

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Step 1:

Mark and Excavate ground for 450x450 square foundations at 850mm Deep, every 2884mm Center to Center. (Fig. 1)

*Necessary ground preparation steps such as clearing of debris/vegetation, compaction, base layers, building formwork etc. is to be take place according to the site conditions.

Soil conditions may vary. Contact your local Civil Engineer to specify requirements to suit conditions.

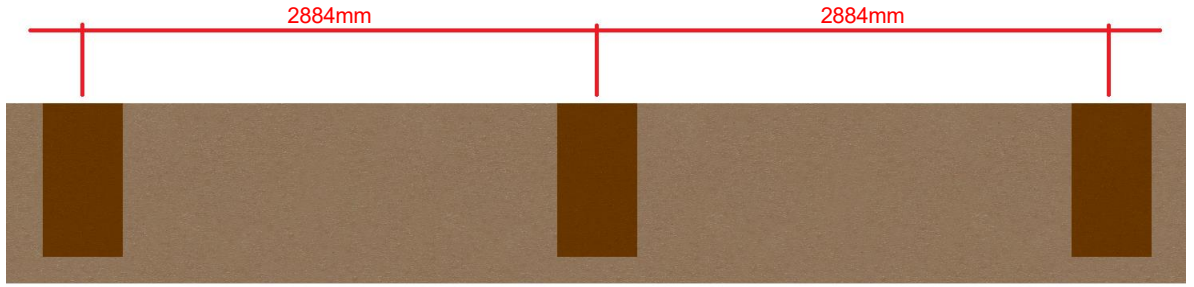

Figure 1

Step 2:

Set Posts 750mm, Vertically into the foundations at every 2884mm center to center. (Fig. 2)

- Support posts by use of Stays/braces (Wooden/Steel)
- Level and align posts in the foundation, ensuring they are plumb and set true in the ground.

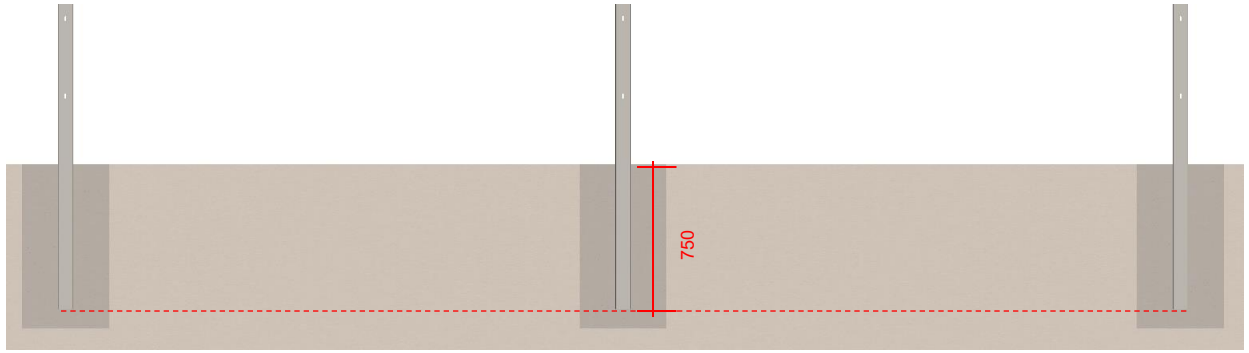

Figure 2

Step 3:

Pour Concrete into the foundation holes.

- Ensure the final level and alignment adjustments are made to the posts whilst the concrete is still wet.
- Add additional support stays/braces, as necessary.

Allow a minimum of 1 day for the concrete to set/cure before moving forward with the installation.

Installation Guide: Post Set-out for Base plate posts

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Step 1:

*Necessary ground preparation steps such as clearing of debris/vegetation etc. is to take place according to the site conditions.

Mark Post positions at every 2884mm Center to Center. (Fig. 1)

Step 2:

Mark and Drill Holes according to the Base plate hole set-out. (Fig. 3)

- Ensure the correct hole size is drilled.
- Clean holes with Blow-out Pump.

Step 3:

Set anchors* into ground.

- Specified Anchor* size according to Base Plate fixation: M16x150mm

Step 4:

Lift, align the base plate holes to the anchor positions and slide and set posts vertically onto ground.

- Ensure the anchors are not dislodged or moved whilst setting/mounting the posts onto the ground.

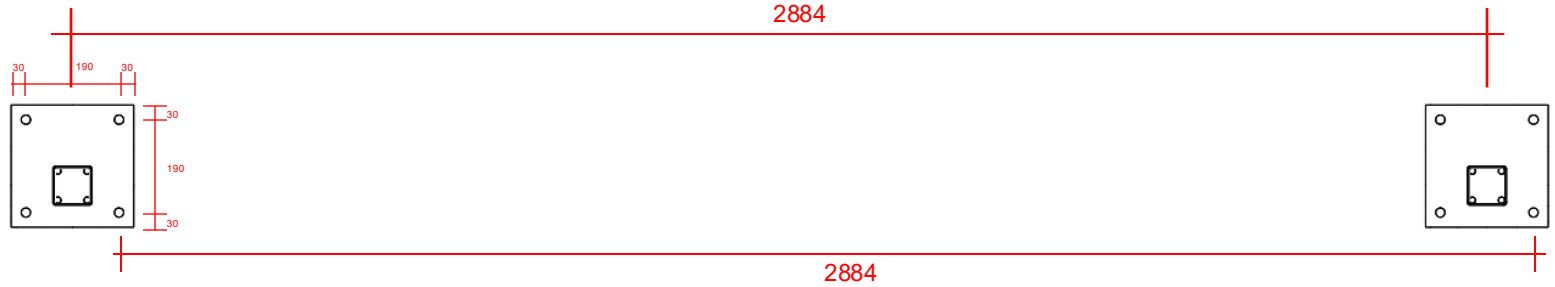

Figure 3

* Please note that Anchors are NOT provided by Betafence

Installation Guide: Installation of End Posts

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Step 4:

For an End Post connection, mount and fixate the uppermost End Splice Tube Connector and Pale, using a M8x150 Mushroom Head Bolt, Self-Breaking Nut and Fender Washer. (Fig. 4)

Tighten the nut, enough to secure the splice tube and pale but loose enough to allow for the splice tube to rotate about the bolt. Do not shear-off the nut.

Step 5:

Subsequently, proceed to install the lower end splice tubes, using M8x150 Mushroom Head Bolts, Self-Breaking Nuts and Fender Washers. (Fig. 5)

Tighten the nuts, enough to secure the splice tubes and pale, but loose enough to allow for the splice tubes to rotate about the bolt. Do not Shear-off the nut.

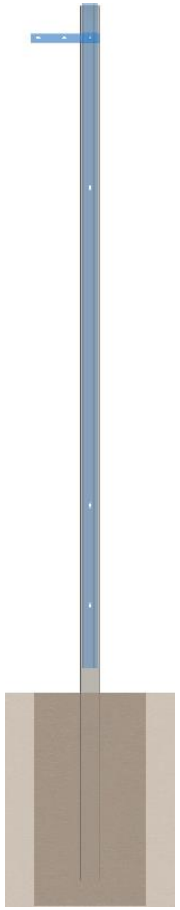

Figure 4

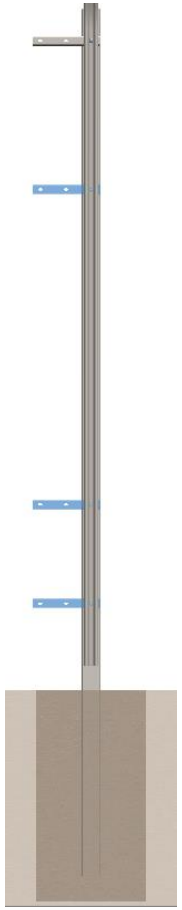

Figure 5

Installation Guide: Installation of Intermediate Posts

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For an Intermediate Post Connection, repeat steps 4 and 5 but ensure you install the panel cross rails with each splice connector tube.

- Slide the Intermediate Splice Connector tube into one end of the cross rail, lift and slide the opposite end of the cross rail to the adjacent 'fixed' splice tube (either on an End post, as shown, or on a Intermediate Post).
- Fixate the uppermost Intermediate Splice Tube Connector and Pale to the Intermediate posts, using a 150xM8 Mushroom Head Bolt, Self-Breaking Nut and Fender Washer.(Fig. 6)
- Tighten the nut, enough to secure the splice tube and pale. Do not shear-off the nut.

Subsequently, proceed to install the lower intermediate splice tubes, using a 150xM8 Mushroom Head Bolts, Self-Breaking Nuts and Fender Washers. (Fig. 7)

- Tighten the nuts, enough to secure the splice tubes and pale. Do not shear-off the nut.

Follow the above steps for subsequent Splice Tube Connector and Panel Cross Rail Installation.

TIP:

- **All Cross Rails need to be installed with splice tubes across the height of the post as mentioned in the above steps.**

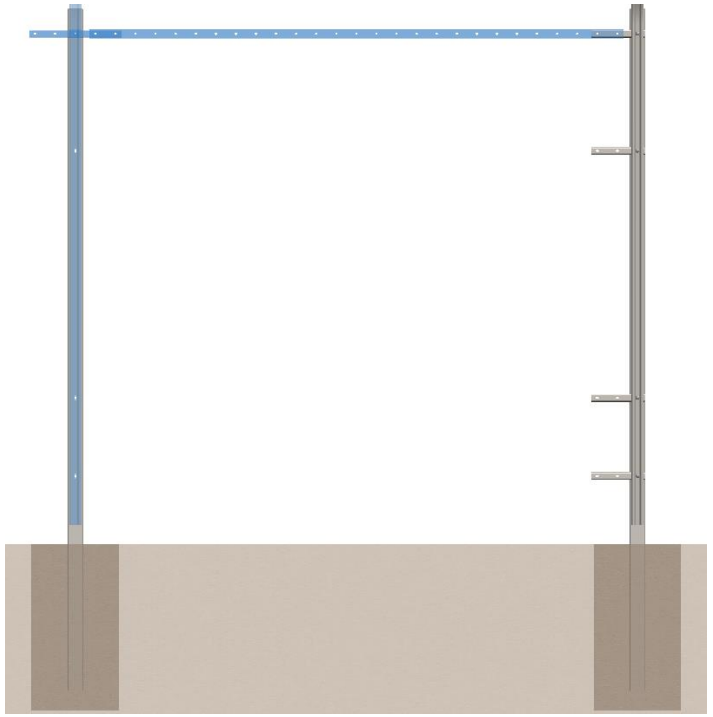

Figure 6

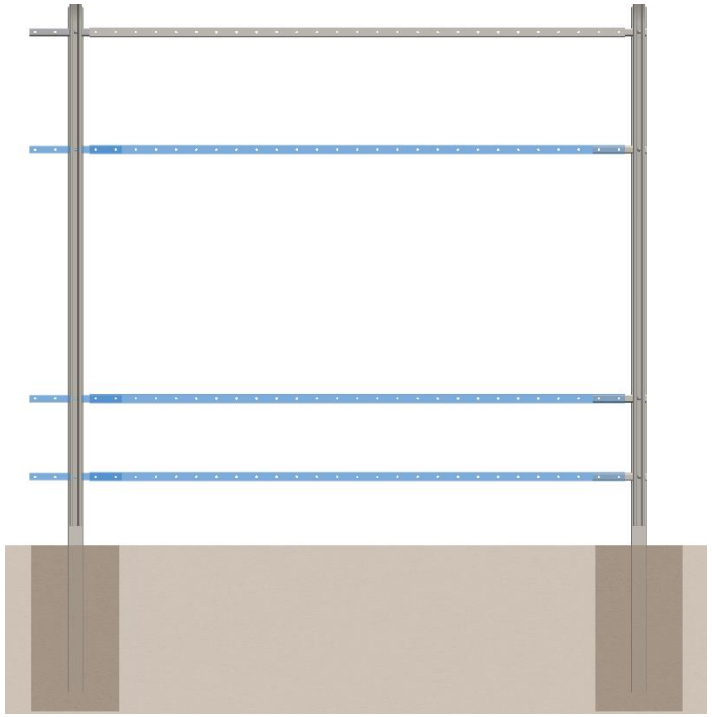

Figure 7

Installation Guide: Installation of Pales to Panel Cross Rails

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Step 6:

Secure each panel cross rail by mounting and fixing the first pale from the right and left of each post.

- Centralize the Panel Cross Rails, by ensuring the 2 holes on the splice tubes are visible on both ends of the cross rail.
- Mount the 1st Pales, in either direction (left to right/or right to left) as shown. (Fig. 8)
- Fix the Pale to the Cross Rails with a M8x70mm Mushroom Head Bolt, through the Cross Rail and splice tube. Secure using a washer and Self-breaking nut.
- Tighten the nuts, enough to secure the pales and rails in place, but loose enough to slide the rails (with pale) on the splice tubes.
- Adjust the Cross Rail and Pale centrally between the Pales fixed on the posts.
- **The distance dimension between the Pales on the Cros Rails and the pales on the posts should be 38mm**.
- Subsequently, mount the balance of the pales onto the cross rails using M8x70mm Mushroom Head Bolts, Self-Breaking Nuts and Washers. (Fig. 9)

Follow the above steps for subsequent panel cross rail installation and pales.

Tighten all nuts, but do not shear-off.

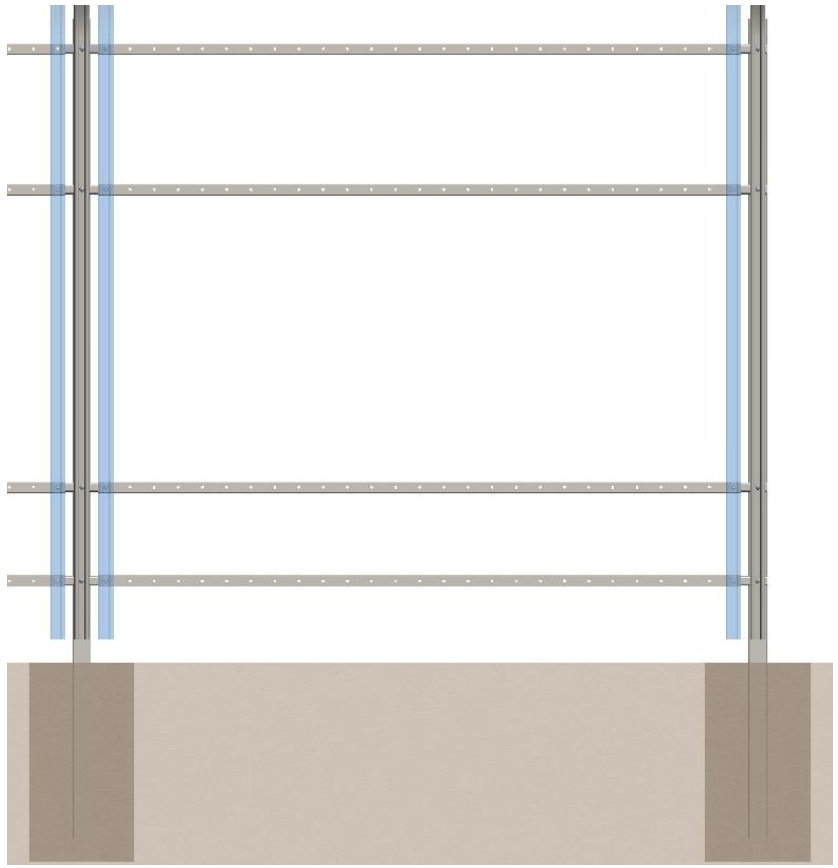

Figure 8

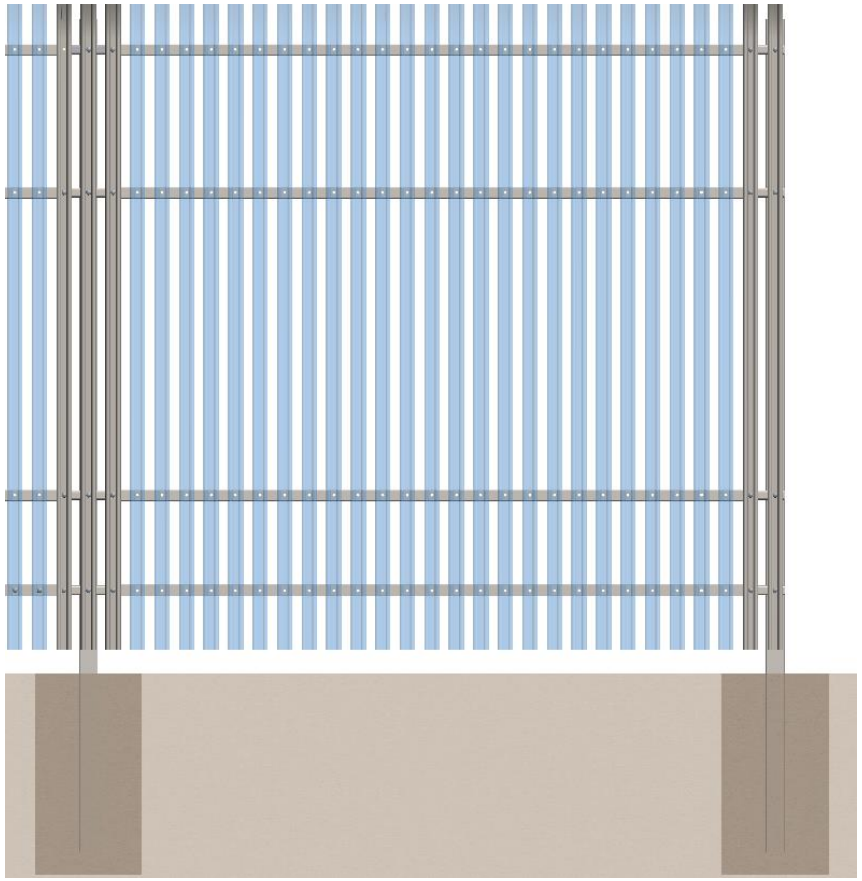

Figure 9

Installation Guide: Installation of Sloped Posts, Panel Cross Rails and Pales

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An Intermediate splice tube can be used for a continuous gradient slope. (Figure 10?

For a Slopes that consists of various gradients, the Sloped Splice Tubes can be used. It consists of 2 parts: (Fig. 11)

- Sloped Splice Tube with a spacer plate (Fig. 12)
- Sloped Splice Tube without spacer plate (Fig. 13)

The Sloped Splice Tube (w/out spacer) is suggested to be fixed against the post and,

The Sloped Splice Tube (with spacer) mounts against the internal face of the 1st Splice Tube with the spacer positioned outward.

See Figure 14 & 11.

- The maximum Sloped Angle achievable is 25°
- Variable sloped gradients are achievable. (Fig. 15)

Figure 11 – Isometric View

Figure 12

Figure 13

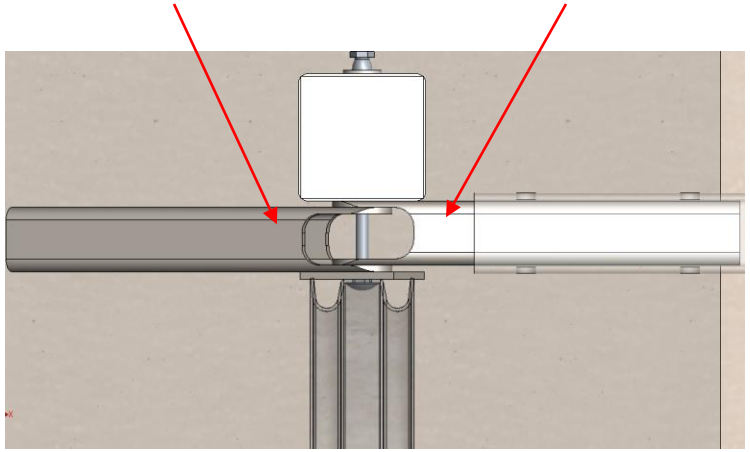

Figure 14 – Plan View

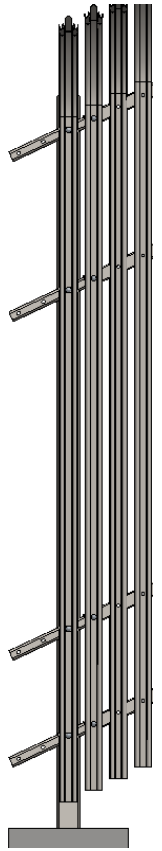

Figure 10

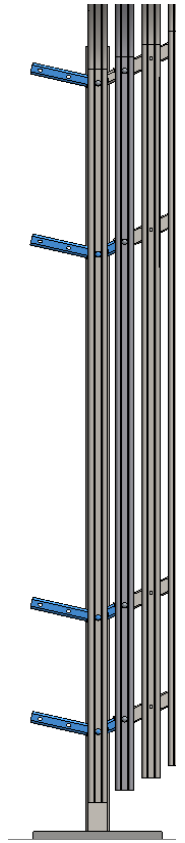

Figure 15

Installation Guide: Installation of Sloped Panel Cross Rails and Pales

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For Installation of Sloped Panel Cross Rails and Pales, it is suggested that a **POST-PANEL-POST-PANEL** installation method is followed, utilizing Sloped Splice Tubes and cross rails to assist in achieving the correct installation of the fence according to the slope.

Alternatively, a **POST-POST-PANEL-PANEL** installation method is also achievable, but with the use of Plumblines to set the posts positions' relative to the gradient of the slope.

POST-PANEL-POST-PANEL Method:

1. Mount and fix the uppermost Sloped Splice Tubes (or Intermediate Splice depending on the gradient of the fence), Cross Rail and a Single Pale. Secure using a M8x70mm Mushroom Head Bolt, through the pale, cross rail and splice tube. (Fig. 16)
    - Tighten nut, to secure the pale and cross rail to the splice, but loose enough for both parts to rotate freely.
2. Mark the position of the sloped post relative to the sloped gradient, by using a dumpy level or in the case of a base plate system – follow the floor line. (Fig. 17)
    - For Embedded Posts – Excavate the hole for the foundation, apply ground works and set the post vertically into the ground. (Refer to the steps for the installation of the Embedded Posts Guideline)
    - For Base plate Posts – Mark and Drill holes. (Refer to the steps for the installation of the Base plate posts Guideline)
3. Using the Uppermost Cross Rail as a guide, set and align the post, true to the ground and relative to the gradient of the slope, by sliding a splice tube into the Cross Rail and Mounting it together with a pale to the post, securing with the use of a M8x150mm Mushroom Head Bolt, Self-Breaking nut and fender washer. (Figure 18 & 19)

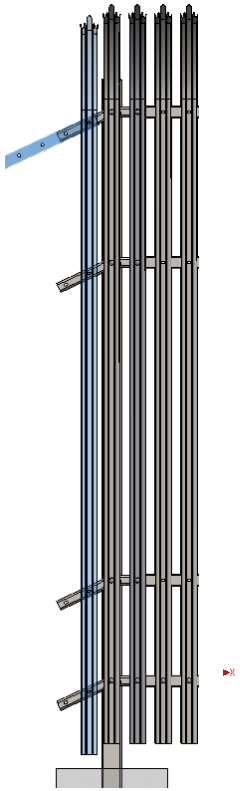

Figure 16

Figure 17

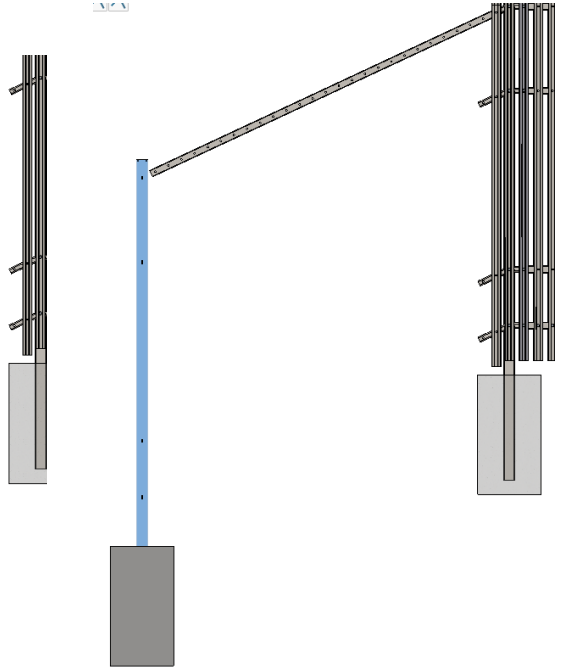

Figure 18

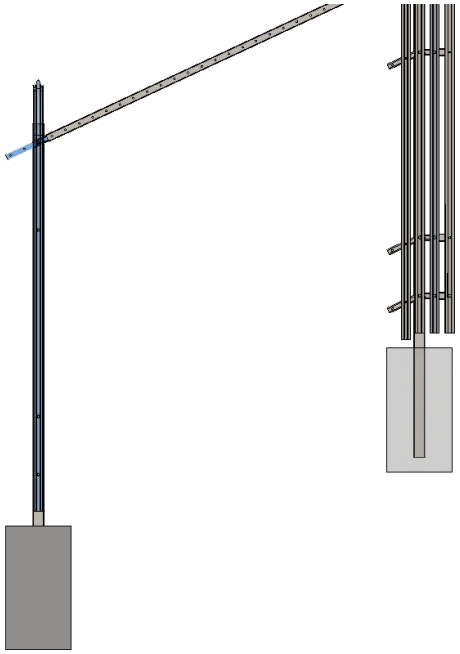

Figure 19

Installation Guide: Installation of Sloped Panel Cross Rails and Pales

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4. Continue with the installation of the fence by following the Installation guidelines for the subsequent Splice connectors, Panel Cross Rails and Pales.

Figure 20, 21 & 22.

Tighten all nuts as you move along the installation of the Fence, but do not Shear-off.

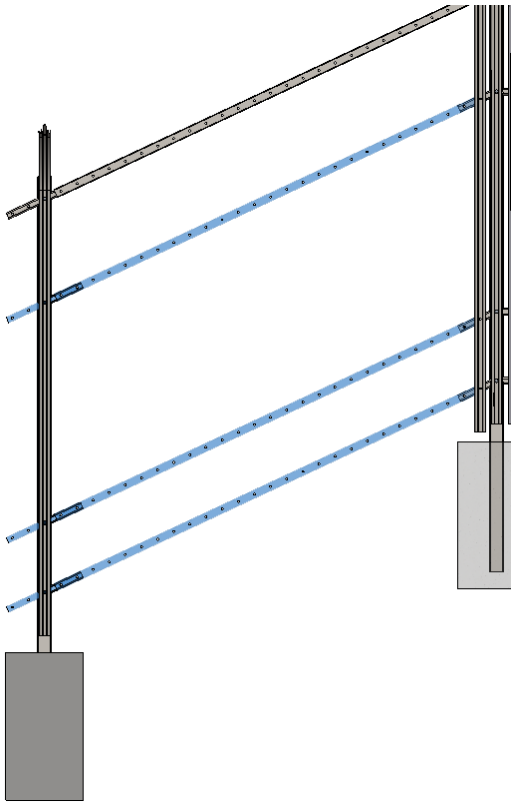

Figure 20

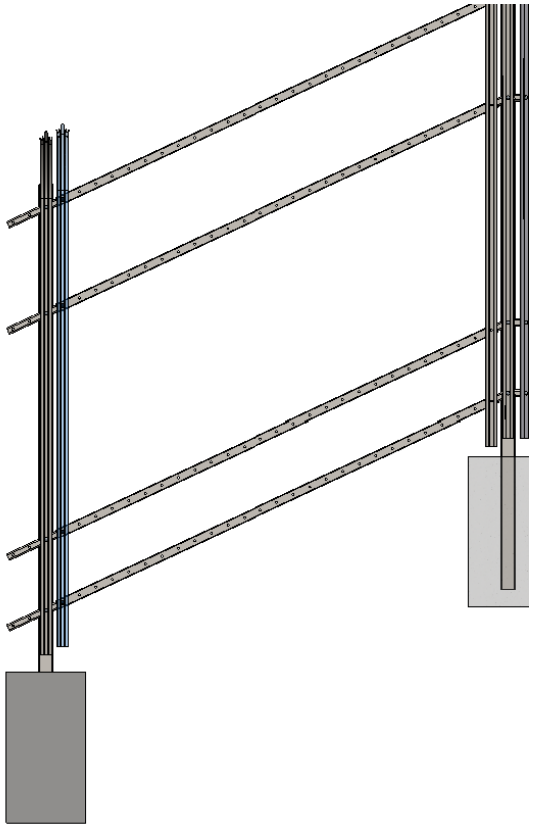

Figure 21

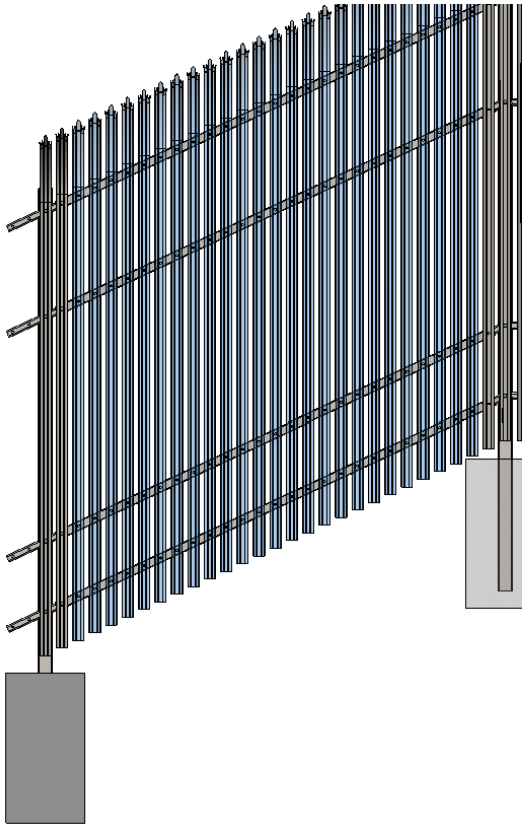

Figure 22

Installation Guide: Installation Corner Specific configuration

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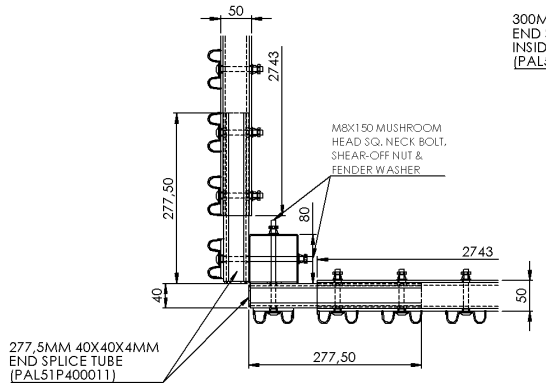
For corner configurations, a combination of the End Splice Connector and Custom Angled Splice Connectors can be used to achieve Corner Post Installation.

- 90° Inside and Outside Corners
- 135° Inside and Outside Corners

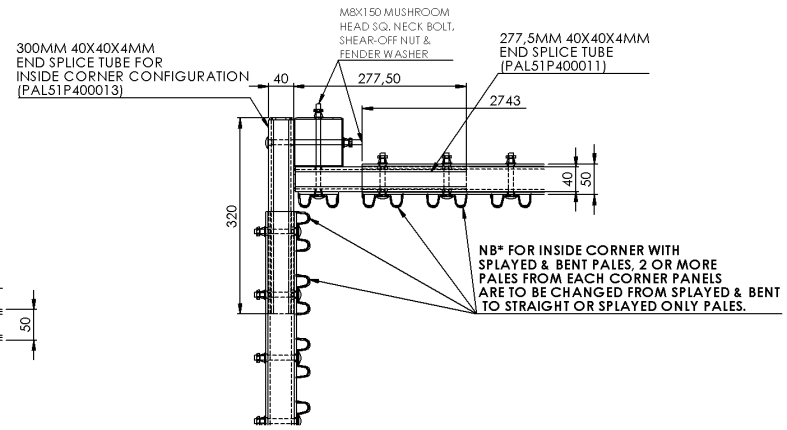
The installation for these Splice Connectors and Posts, along with the Panel Cross Rails and Pales is typical to all Guides provided in this Installation Manual.

*Custom Angled Corner Splice Connectors can be designed to suit your needs. Please speak to your local salesperson and provide the necessary corner dimensions.

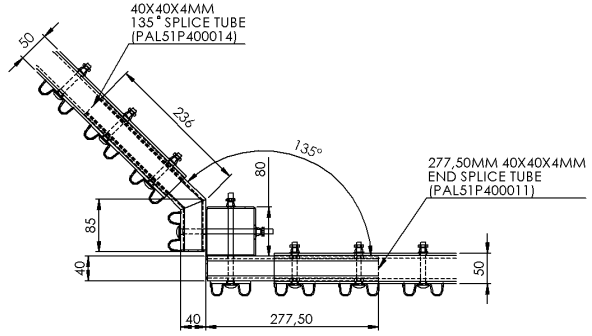
90° CORNER (OUTSIDE)



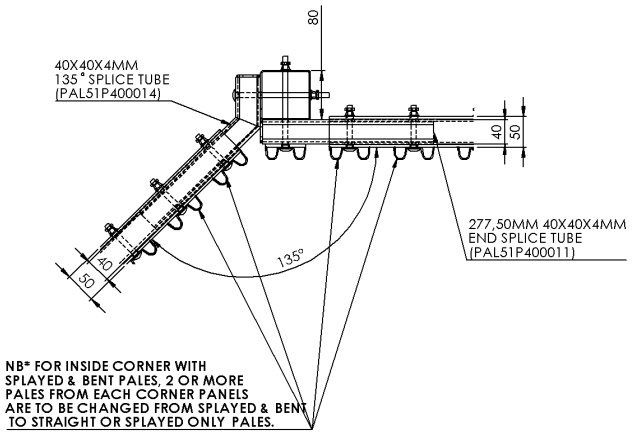
90° CORNER (INSIDE)



135° CORNER (OUTSIDE)



135° CORNER (INSIDE)



Installation Guide: Completion/Sign-off

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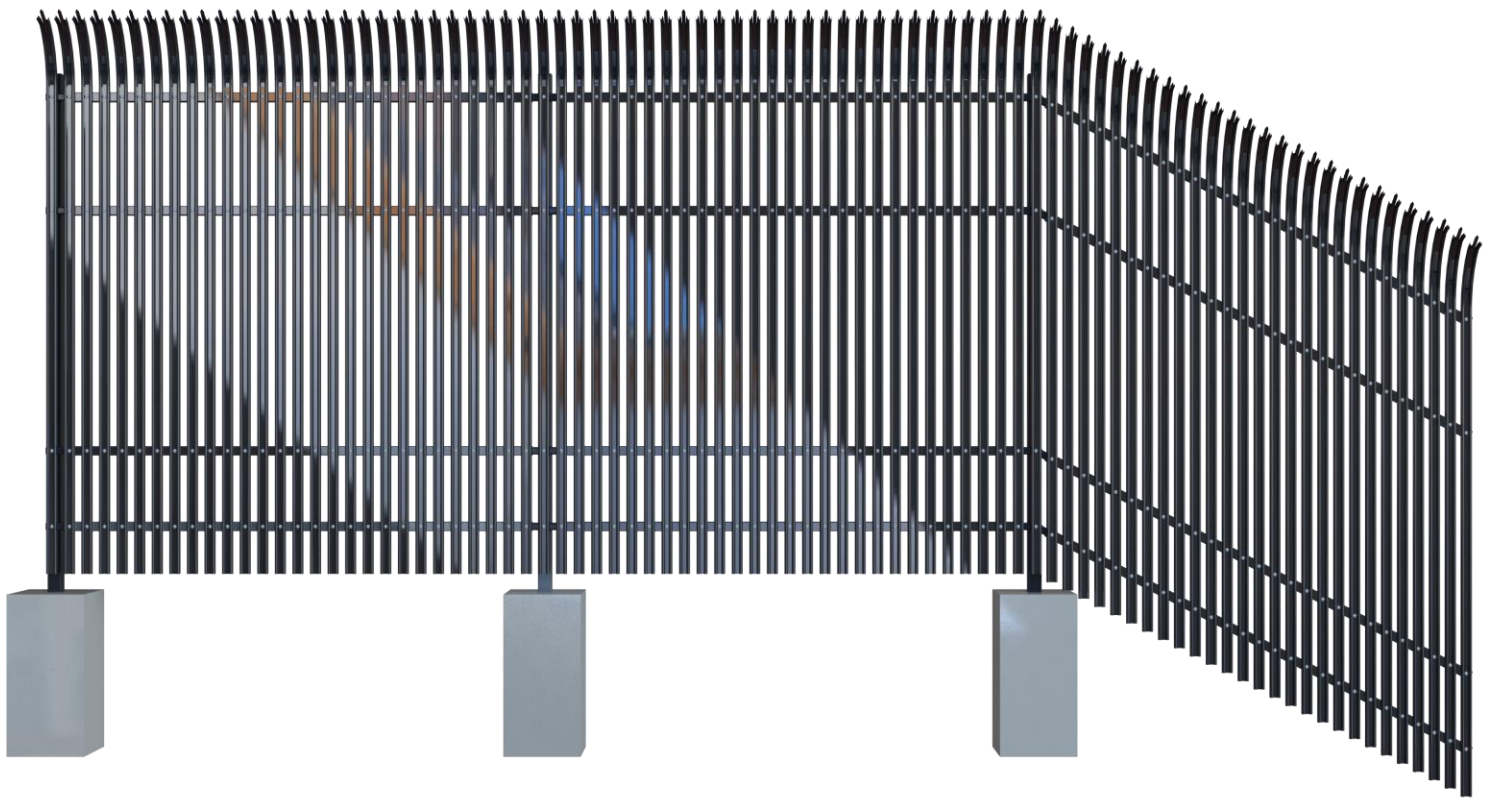
- Ensure all Panel Cross Rails, Pales and Posts are levelled and aligned.
- Ensure all Pales are fixated to the Cross Rails and to Posts
- Ensure all Bolts are secured with Washers and Self-Breaking nuts.
- **Torque and Shear-off all Nuts**.
- **Damage the "thread" of the bolts fixing the pales to the horizontal rales. This will make it impossible to remove the break off nut, & is mandatory to benefit from the LPCB certification.**



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