

# INSTALLATION GUIDE DUOFUSE®

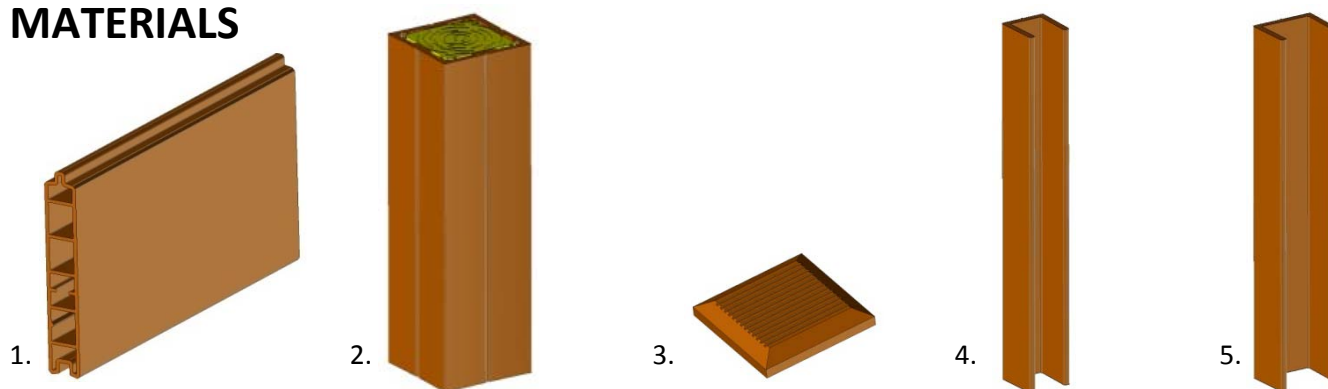
## TONGUE AND GROOVE BOARDS SYSTEM

The Duofuse® wood composite boards system is much more durable than wooden fences, and correct installation is necessary to enjoy the fences for years.

We recommend reading through the entire installation instructions before starting, and please **check the website for the latest installation instructions**. **Plastivan disclaims responsibility for damage caused by, or failure of, the product as a result of faulty installation caused by failure to follow these instructions**. Failure to follow these instructions will void Plastivan warranty. All fencing and profiles should be acclimatised for minimum 24 hours before starting the installation. Remove packing if present. Stack the boards horizontally and cover against rain and sunshine. Do not install the fencing in temperatures below 5°C. Wood composite cuts, drills and installs similar to solid wood using standard wood working tools. We recommend carbide-tipped saw blades. Use a drill with low speed and high torque. Wood Plastic Composite products can in no circumstances be used as structural elements. Wood composite cuts, drills and installs similar to solid wood using standard joinery tools. The colours and the surface brushing may differ slightly from production deliveries and are not contractual.

When the fences have been exposed to some showers, water circles and drips may occur. This is a temporary process which is caused by the release of lignin out of the wood. By rinsing the fences with a garden hose the water circles disappear temporarily. After some time this process stops and the water circles disappear completely.

### MATERIALS



- Boards (1.): 15x2.7x180cm (reinforced with galvanised steel - HxWxL).  
 Composite post (2.): 9x9x270cm (reinforced with an impregnated wooden core – class 4).  
 Cover cap (3.): 11x11x1.7cm (to avoid water infiltration in the composite post).  
 Small U-profile (4.): 2.7x3.5x182cm (fitting system for the boards and to use as finishing profile above the upper board).

In the installation guide we refer to the small U-profile as “horizontal U-profile” and “vertical U-profile” depending on the way it is used.

Stainless steel screws: minimum 4x45mm (to attach the U-profile to the composite post).

Stabilised sand: Semi-dry mixture of ballast, sand and concrete (200kg per m<sup>3</sup> mixture).  
 This mixture can also be bought ready to use at a specialised store.

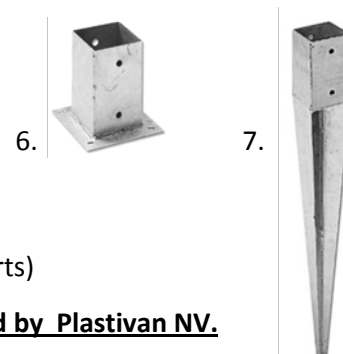
#### OR:

Concrete/Rapid concrete: Advised in cases of exposure to heavy wind (open field, ...)

#### OPTIONAL:

Large U-profile (5.): 4.2x3.5x182cm  
 Only needed if a concrete gravel board is used at the base

Fence post support on base plate (6.): 9.1x9.1x15cm stainless steel or galvanised  
 Only needed when fixing the posts on a terrace, concrete floor or wall.



Fence post support with spike (7.): 9.1x9.1x75cm stainless steel or galvanised

Suitable plugs, stainless steel screws and L brackets (when fixing to a wall)

Stainless steel screws: minimum 4x60mm (when using fence post supports)

**Attention! L brackets, screws, plugs or post supports are never supplied by Plastivan NV.**

**Please buy these at specialized shops.**

## TOOLS

(depending on the way of fixing)

Garden spade / post hole auger  
 Water level  
 Mason rope or normal rope  
 Screwdriver  
 Drill  
 Wood drill (and stone drill)

Countersink  
 Measuring tape  
 Sliding mitre saw / Jig saw / handsaw  
 Carbide tipped saw for cutting the boards  
 Laser

## BASIC RULES

### Height fence

By using the Duofuse® tongue and groove system, multiple combinations of panel frame (heights of 15cm to 180cm) are possible depending on the number of boards used. The fences can also be built in cascade, e.g. first fence 120cm high, second 150cm high,...

The boards can be placed directly on the soil as they will not rot. The fences can swell as a result of moisture absorption in width and height, therefore make sure the post exceeds the screen by minimum 5.5cm in order to leave enough expansion space.

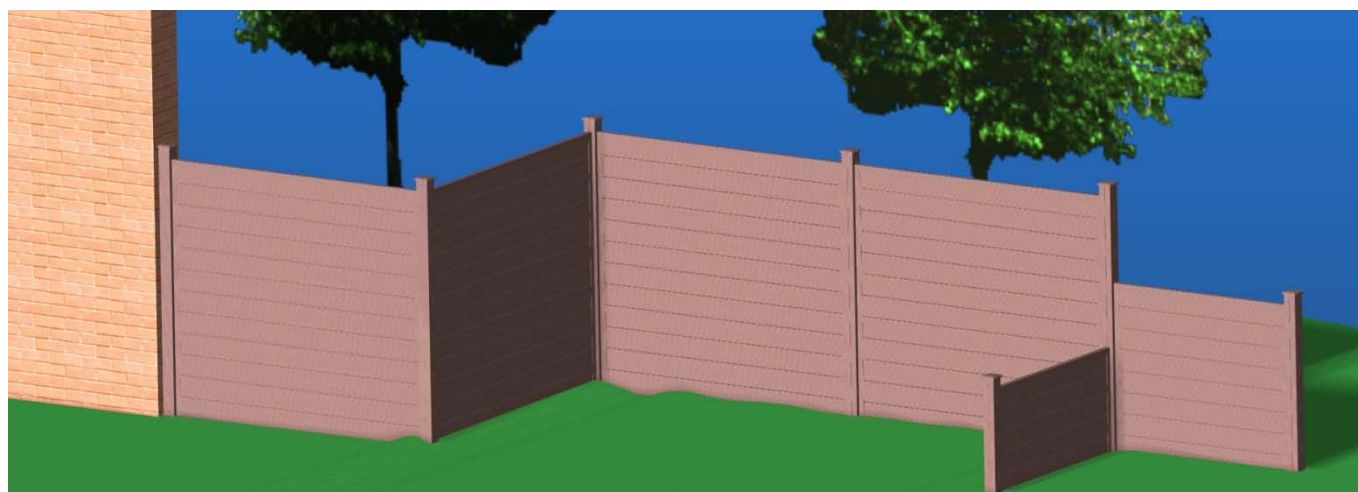
### Length fence

Standard length of the boards is 180cm but boards can be cut to any length. By the presence of reinforcement profiles in galvanised steel, carbide tipped saw is necessary to cut the boards.

A minimum of 1cm gap is needed to be left at both ends to allow for expansion of the boards. When taking into account the thickness of the U-profile (0.5cm), the boards need to be at least 2x1.5cm smaller than the distance between two posts.

For the standard length of the fences the distance between two posts is 183cm.

These values apply if installation is under dry circumstances with boards which were stored in a dry environment.



## PROCEDURE INSTALLATION FENCE

### Avoid colour difference:

As the boards and the posts have been brushed, it is necessary to install the boards and posts in the same direction each time. The boards need to be inserted with the mark on the same side of the board (front or back). You can find the mark on every board (see red arrows).

At one of both sides of the post the wooden core is attached to the composite post by means of a screw. Make sure that the side of the post with this screw is always on the same side (i.e. always on the front or always on the back,...).



### Avoid damage of the wood composite materials:

- Use a slow drill speed when fixing a screw.
- Hammering on posts or boards is not allowed.
- Avoid installing wood composite material in temperatures below 5 °C.
- Counter sunk pre-drilled holes are essential for fitting

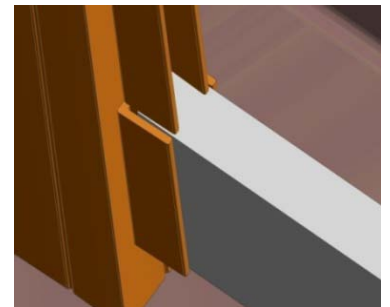
### Step 1 : Shortening the posts (optional)

When installing fences of less than 180cm or when using fence post supports, you will have to saw the posts to the correct height. At one of both sides of the post the wooden core is attached to the composite post by means of a screw. Always crop the post at the other side.

When you need a short post, you can choose to saw the post in two. Then you will have to screw the post to the wooden core using a 4.0x45mm stainless steel screw at the bottom of the post. Make sure that the fully treated end of the core is located at the bottom of the post.

### Step 2: When using concrete gravel board (optional)

When you want to use a concrete gravel board – up to 4cm thick – beneath the fence, you can attach it with the large Duofuse® U-profiles (width 4.2cm). Attach these U-profiles to the posts with at least 2 stainless steel screws of 4.0x45mm (max. intersection 40cm).

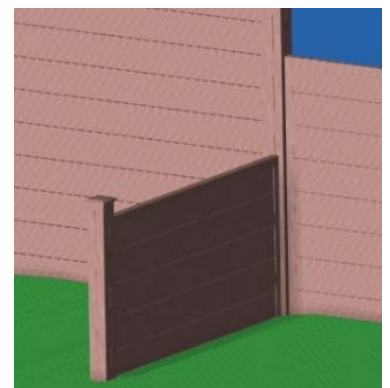


### Step 3: Assembly of the U-profiles

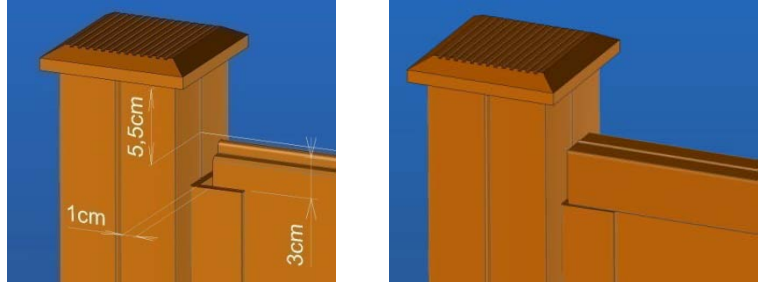
In order to create a corner or extra raised beds, you can attach at more than one side a U-profile (up to 4).

Attach the U-profile to the post with stainless steel screws of 4.0x45mm (max. intersection 40cm). Attach the U-profile each time at the same distance from the top of the post; e.g. 9cm.

- Attach the U-profiles to the posts before mounting the post in/onto the ground. This makes it easier.
- When using fence post supports you can attach the u-profiles to the post only after placing the post into the fence post supports.
- When using a concrete gravel board you can attach the small U-profiles (width 2.7cm) to the post only after that the gravel board has been placed between the large U-profiles.



When you want to finish the upper board with a horizontal U-profile (Step 7), make sure that the boards are 3 cm higher than the vertical U-profiles, so that the horizontal profile can be placed onto the upper board. Therefore you will have to cut the vertical U-profiles by 5cm before attaching to the posts (the boards are 180cm high, the U-profile is 182cm long and the vertical U-profile should be 3cm beneath the top board).

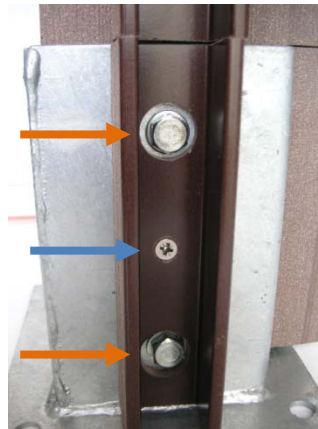


When using fence post supports, cut the U-profiles to the length of the support (see picture 1). The post should be secured to the supports using either large screws or bolts in the pre drilled holes in the support. Depending on how you place the supports, there's two possibilities:

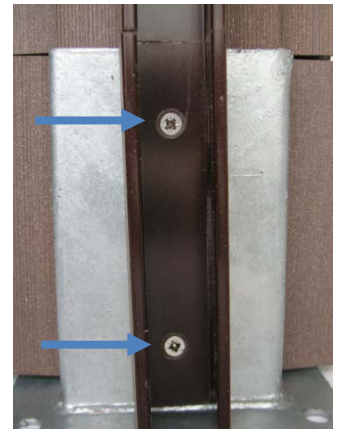
- If you want to fix the cut U-profile to the side where the post is fixed to the support, attach the U profile to the support ensuring that it is flush with the support. This will mean that holes will have to be drilled in the U profile to allow the U profile to pass over the top of the bolts/screws (see picture 2). The U profile can then be attached to the support by means of a single screw through a pre drilled hole.
- If you want to fix the cut U-profile to the other sides of the support, predrill the cut U-profile and the support with two holes so that you can attach the U-profile with two screws to the support (see picture 3).



Picture 1



Picture 2



Picture 3

## Step 4: Mounting of the posts

There are 4 possibilities to attach the posts:

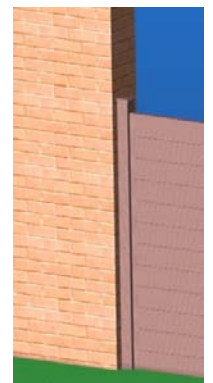
- Against a wall
- Into the ground without fence post supports
- Into the ground with fence post supports
- On a terrace, concrete floor or wall by using fence post supports

### 4.1 AGAINST A WALL

- Saw the post to the desired length
- Drill the post so that the mounting screws can be placed through the post.
- Place the post on the right place, water level to the wall and drill the holes through the post into the wall.
- Withdraw the post, drill the plug holes into the wall and place the plugs.
- Attach the post with screws against the wall and make sure it's vertical.

If the wall is not vertical, you can place a small wedge between the post and the wall. Make sure the head of the screw is levelled with the post.

Alternatively you can use stainless steel L brackets to mount the post to the wall instead of direct fixing.

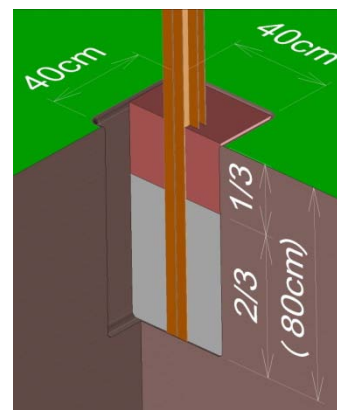




#### 4.2 INTO THE GROUND WITHOUT FENCE POST SUPPORTS

1/3 of the length of a post needs to be into the ground. For a fence of 180cm, 80 to 85cm into the ground is sufficient.

- Dig a hole of 40x40cm and 80cm deep and (if necessary) place a tile in the hole to avoid sinking of the post.
- Place the post in the hole.
- Fill the hole completely or at least for 2/3 with stabilised sand, concrete or rapid concrete. When using (rapid) concrete, wait until the concrete has become hard. Fill the rest of the hole with soil which you press hard. In doing so you can sow or plant against the pole.
- Use a level to make sure the post is standing 100% straight.



#### 4.3 INTO THE GROUND WITH FENCE POST SUPPORTS

- Dig a hole of 40x40cm and 60 to 80cm deep (depending on the length of the post support; the upper square part should be above the surface).
- Place the supports straight into the hole and fill it with stabilised sand, concrete or rapid concrete (see 4.2).
- Place the post straight into the post support and fix it with the suitable stainless steel screws. If the support is larger than the post, then use some small wedges between the post and the support.

If the spike of the post support is made of straight ribbons, we advise to make some dents into it or to attach an anchor in it (drill a hole and place a screw, nail or similar through the hole). Smooth ribbons could get lose from the concrete.



#### 4.4 ON A TERRACE, CONCRETE FLOOR OR WALL BY USING FENCE POST SUPPORTS

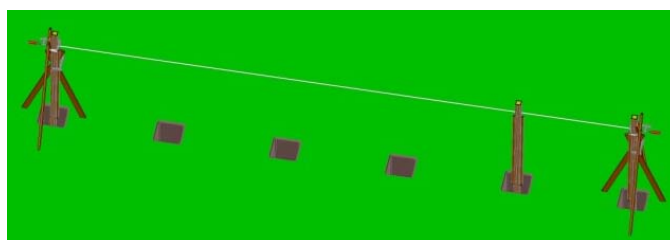
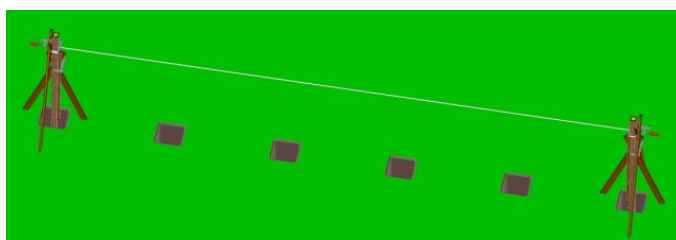
- Mount the post supports with the suitable screws to the ground.
- Place the post into the post support 100% straight onto the terrace, concrete floor or wall.
- Fix the post into the post support with the suitable stainless steel screws. If the support is larger than the post, use some small wedges between the post and the support and fix with the suitable stainless steel screws.

If the mounting holes of the supports are hidden under the post, the supports need to be fixed onto the terrace, concrete floor or wall before placing the post in the support.



### Step 5: Order of placing the posts

If applicable always start against the house, shed or other fix point. After installing the first post, install the last post. Anchor sturdily the first and the last post. Fix the last post temporary. This can be done by using 2 temporary struts. When installing the last screen the last post can be fixed permanently with concrete, stabilised sand,... . In this way a slight miscalculation or deviation can still be corrected. To be sure that all posts are as high you can use a transparent flexible hose filled with water or a laser. Stretch a (mason) rope between the first and the last post. Then place the second post and install the first fence.



## Step 6: Installation of tongue and groove boards



Place the boards from above into the U-profiles.

**To avoid colour differences, the boards need to be inserted with the mark at the same side of the board (front or back). You can find the mark on every board (see red arrows).**

Press the boards to each other. An expansion space of min. 1cm at both sides needs to be respected. Avoid damaging of the boards.



Be careful when installing the lowest two boards if you use fence post supports. Make sure they slide down horizontally.

Then place the next post and build the next fence. Do not place all posts, but build fence after fence. Check during and after sliding the boards that the next post is still vertical.

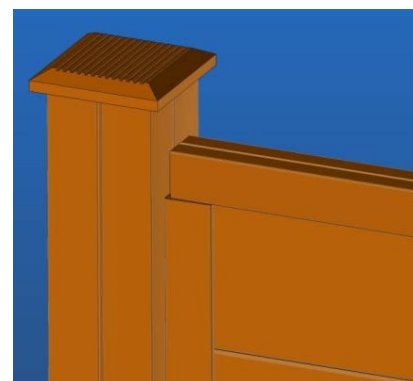
When placing a corner or an extra intersection, repeat the above steps.

## Step 7: Finishing

### Horizontal U-profile

You can finish the fence by placing the small U-profile on top of the upper board. For a nicer finish you can sandpaper this profile manually.

When each fence has been completed, add the horizontal U-profile. In this way you can verify whether the used distances of the boards, posts and vertical U-profiles are correct. Make sure the U-profile is level on top of the upper board. You can achieve this by placing long level on top of the U-profile and adjust carefully with a rubber hammer.



### Cover cap

The posts are to be finished by screwing the cover caps in the middle on to the post or by gluing the inside edges of the cap to the post. By doing so a natural air flow inside the post can be ensured.

Attach the cover caps after all horizontal U-profiles have been put in place.

For posts placed against a wall, the cover cap needs to be cut at one side.