

DURABASE

Advanced Base and Wall Systems for Conservatories



Dwarf Wall Assembly Instructions

Including **Important Safety Information** to be read fully and understood before attempting assembly

Contents

Important Information	2
Health, Safety & Environmental.....	2
Tools & Equipment.....	2
House Wall	4
1. Wall Preparation	4
2. Setting Out	4
Dwarf Wall Base Assembly Instructions	5
Foundations	5
A. Concrete Pads.....	5
B. Steelwork Assembly	5
C. Fitting Brick Skirt.....	7
D. Fitting Modular Walls	9
E. Fitting Under Floor Insulation	10
U Values	10
U Value Information Table.....	10
Fire Regulations	10

Important Information

Please read this section of important information and ensure you understand it fully before turning to the step-by-step guide to the installation of your **DURABASE**.

Tools & Equipment

Bucket	Skill Saw (Optional)
Builders Shovel	Socket (17mm)
Cross cut saw	Soft Brush
Extension lead	Spirit Level (1.2m)
Pointing tool	Stanley Knife
Pointing Trowel	Tape Measure
Posi screwdriver bits	Tec Driver (8mm)
Silicone Gun	Wheel Barrow
Cordless Screwdriver (12v. Min)	
Electric Drill (Hammer Action)	
Masonry Drill Bits (8mm, 10mm, 16mm)	
Spanners (10mm, 13mm, 30mm or adjustable Wrench)	
Steel Drill Bits (8mm, 10mm, 16mm)	

Not Supplied:

- Brick Spacers (10mm)
- Packing Trims
- Pointing Bag/Gun

Health, Safety & Environmental

There are inherent dangers when assembling a conservatory base. The following supplement is a guide to 'best practise' but cannot be considered as comprehensive. You are advised to work safely at all times.

1. General Site Safety

All sites are different and have different hazards.

We recommend considering the following:

Security Make the construction site a restricted area. Particularly at risk are children and animals.

Organisation Don't open boxes haphazardly and leave components lying around that can get damaged, lost or pose a trip hazard.

Weather Wet conditions cause specific hazards.

Environment Protect the environment by disposing of your rubbish appropriately.

Steel Edges are sharp.

2. Personal Protective Clothing

Always ensure **Safety footwear** is worn and **arms and legs are covered** at all times.

Be prepared:

Safety glasses when drilling

Hearing protection when drilling

Dust mask if dust is likely to be generated

Gloves as applicable

Be aware of sharp edges on steelwork.

It is advisable to have a first aid kit accessible at all times.

3. Tools

The tools you use are your responsibility.

We advise:

Check the condition of your tools prior to use for obvious damage. Arrange for your tools to have a portable appliance test if necessary.

Electric hand tools are 110 volt or used in conjunction with a residual circuit breaker.

Use tools for their intended purpose only.

Follow manufacturer's guidelines as applicable.

Formal Procedure - Knives and Chisels

- Always keep your hands behind the blade.
- Always cut away from your body – NEVER towards yourself.
- Ensure that others are not in the way of the cutting direction.
- Keep the tooling in a sharp condition so you don't have to exert excessive force to cut.
- Always pick up the tool by the handle.
- Always ensure the tool is stored safely where a sharp edge cannot cause injury.
- Only use the tooling for its intended purpose.

DURABASE Modular Dwarf Wall Assembly Instructions

4. Manual Handling

All modular wall sections are a two man lift. We advise the following procedure for safe manual handling:

Plan the lift

1. **Arrange help.** All wall sections are a two man lift.
2. **Prepare for placement.** Remove any obstructions in the way and at the placement point.
3. **Rest point.** For a long lift, such as floor to shoulder, consider resting the load mid-way on a table or bench in order to change grip.

Execute the lift

1. **Place the feet.** Feet shoulder width apart, giving balanced and stable base for lifting. Place the leading leg as far forward as is comfortable.
2. **Good Posture.**
 - a. Bend the knees so that hands when grasping the load are as near level with the waist as possible.
 - b. Don't kneel or over flex the knees.
 - c. Keep the back straight and lean forward slightly over the load if necessary to get a good grip.
 - d. Keep the shoulders level and facing in the same direction as the hips.
3. **Firm Grip.** Try to keep the arms within the boundary formed by the legs. A hook grip is less fatiguing than keeping the fingers straight. If it is necessary to vary the grip as the lift proceeds, do this as smoothly as possible. The grip must be secure.
4. **Do not jerk.**
5. **Move** with the feet and not by winging the arms.
6. **Position the weight.** Close to the body
7. **Place down** If precise positioning of the load is necessary, put it down first, and then slide it into the desired position.

Team Lifting

It is important that team members are physically evenly matched. One person should take responsibility and co-ordinate their actions.

Vision

Clear vision may mean multiple trips with smaller loads, but it is safer.

5 Control of Substances Hazardous to Health

The following substances needed to be treated with due care and consideration:

Pointing Mortar & Concrete

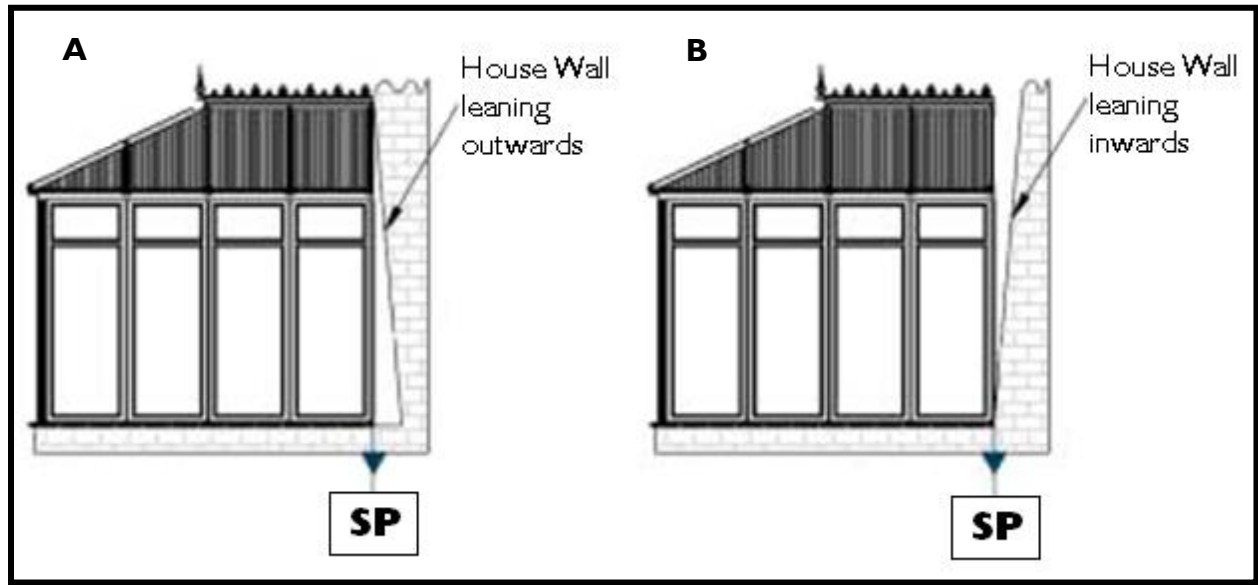
Portland and other cements when mixed with water can cause skin irritation. If eye contamination occurs wash out with copious amounts of water and if irritation persists seek medical advice.

Bond and Seal Brick Adhesive and Sealer

You are advised to follow the guidance on the packaging.

House Wall

This section explains the necessity to ensure that your base is assembled in the correct position from the parent wall. Any discrepancies should be noted and measures taken to adjust as necessary.



*NB: Please note in diagrams SP refers to the **Setting out Point**.*

1. Wall Preparation

The wall(s) you are going to fix the conservatory against must be of sound construction and flat.

2. Setting Out

As the conservatory will need to be built at 90° to the ground it is important to check the angle of the wall you will build your conservatory against. Setting out solutions shown right:

A. If the wall leans outwards:

1. A plumb line should be fixed to the highest point where the roof will touch the wall. Where the plumb line meets the ground is where the base should be set out from (SP).
2. The gap will need to be filled with packers (not supplied) so that the wall bar can be attached vertically. The base and dwarf wall size will need to be started from this point.

B. If the wall leans backwards:

1. The base should be started against the wall (SP).
2. The gap in this situation is at the top therefore packers (not supplied) will be needed to ensure the wall bar is attached vertically.

Please note: Any additional trims to cover large gaps are not included with the base or conservatory and should be purchased separately.

Dwarf Wall Base Assembly Instructions

Foundations

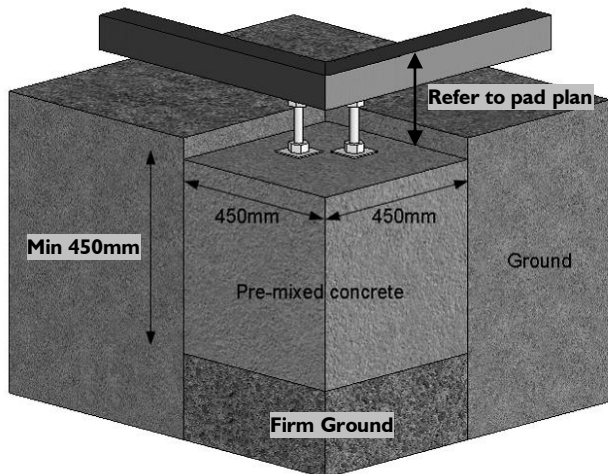
The modular base requires concrete pads for each load bearing leg unless the existing patio or concrete area provides adequate foundations. (If this is the case for you, skip to B. Steelwork Assembly)

A. Concrete Pads

Refer to Concrete Pad Layout Plan

1. Layout pad positions.
2. With reference to the layout plan calculate required excavation depth for a minimum 450mm deep pad allowing for stated measurement from desired finished floor level to top of concrete. (Minimum depth subject to local building regulations).

If the base of the hole is not firm it will be necessary to dig deeper until you reach firm ground.



Traditional Concrete Mix:

1 part cement, 2.5 parts concreting sand and 5 parts 10mm gravel.

Mix together thoroughly.

Slowly add clean water, mixing continuously to make the mix workable. *Too much water can weaken the mix.*

Pre-Blended Concrete

Alternatively purchase concrete pre-blended to BS 5835 Part 1. You will need 9 x 25 Kg bags for each 450mm cube. *Use as instructed on the bag.*

Harden

Leave the pads to harden for one day.

In winter months pads must be protected from frost by covering with polythene or sacking.

4. It is advisable to lay a strong permeable membrane on the ground beneath the base to ensure adequate drainage.

B. Steelwork Assembly

1. Screw lock nuts onto all adjustable legs. (Fig. 1 - 1.)
2. Screw adjustable legs into the nuts welded onto the underside of the back sill section. (Fig. 1 - 2.)

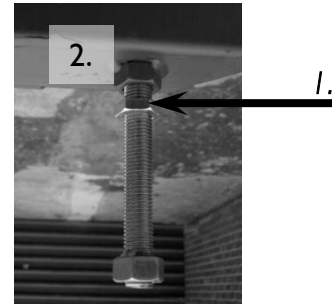


Figure 1

3. Position the back sill section against the house wall in the required position (the ends will be 25mm short of the overall base size).
4. Rest the legs on something firm to prevent them sinking.
5. Adjust the jacking legs to the required level; *remember to allow 18mm for the thickness of the floorboards plus the floor finish that you intend to use.* (Fig. 2)



Figure 2

6. Pilot drill through the fixing holes using a 10mm masonry drill bit. (Fig. 3)



Figure 3

7. Remove the sill section and re-drill pilot holes to a depth of 70mm using a 16mm masonry drill bit.
8. Insert the Rawl bolts into the holes and remove the bolts.
9. Replace the back sill section, tighten the Rawl Bolts and fix using a 17mm socket.

DURABASE Modular Dwarf Wall Assembly Instructions

- 10. Screw fixing down legs (Fig. 4) into the nuts welded onto the underside of the two side sections.

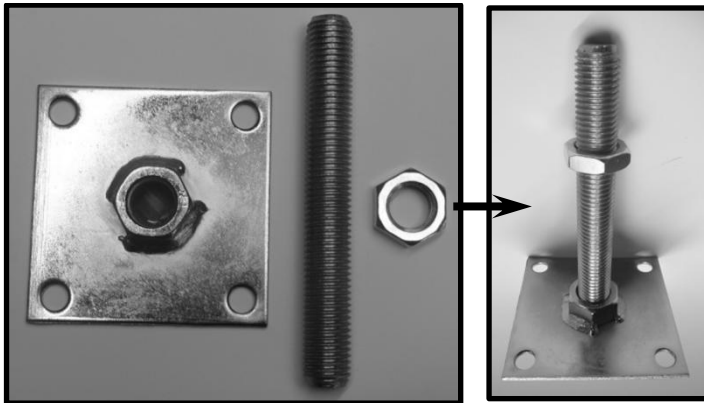


Figure 4

- 11. Fit to the rear section by inserting the pre-welded internal flange inside the rear sill section. Then push back towards the wall until the forward projecting bolts locate in the corner fixing bracket. Fix with nut supplied but do not fully tighten at this stage. (Figs. 5 and 6)

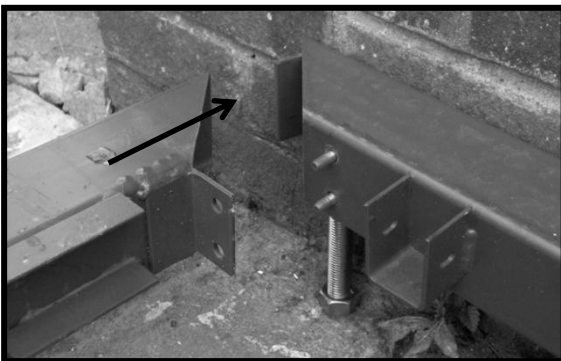


Figure 5

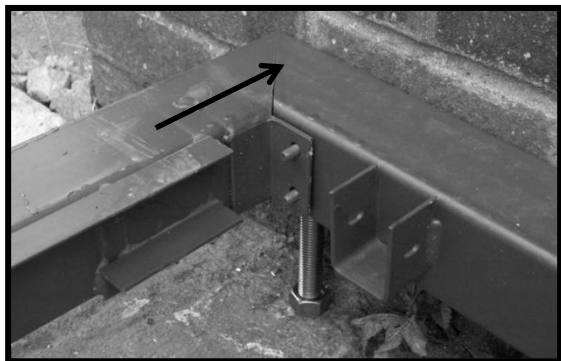


Figure 6

- 12. Screw adjustable legs into the nuts welded onto the underside of the front sill section. Attach to the side sill sections in the same manner.
- 13. Position the load bearing plates (75mm square washers) under all jacking legs except those on the back sill. Working your way around, adjust the legs to the required height and level using a spirit level.
- 14. Check that the base is square and tighten all joints. Re-check levels and tighten lock nuts on the jacking and fixing down legs.

- 15. Slot the floor joists into the 'u' support brackets, and secure using M6 x 60 bolts and nuts supplied. Tighten with 10mm spanner.

If the base is a shaped design the floor joists will differ in length depending on their position.

- 16. Intermediate joist supports should be fitted and the legs adjusted and locked at this stage. Legs should be placed on something firm to prevent sinking. (Fig. 7)



Figure 7

Check

At every steel frame join, apart from at the house wall, leg formation should look as below. (Fixing down leg as shown with one bolt into the pad and one jacking leg). (Fig. 8)



Figure 8

C. Fitting Brick Skirt

Refer to Skirt and Wall Layout Plan

1. Lay out the skirt sections in the order they are to be fitted.

The panels are marked alphabetically to correspond with the layout plan.

2. Starting from the external corners and working towards the house wall fit panels so the top edges line up with the top edge of the steel base sills. There is no overlap at the corners. (Fig. 9)

Working towards the house wall allows you to trim off any excess skirt board length should a slight tweak be required.



Figure 9

3. When you are happy that everything is correctly positioned, fix in place with self drilling screws supplied. Fix where brick slips are still to be fitted and through perpendicular mortar joints if extra fixing is required. (Fig. 10)



Figure 10

D. Fitting Modular Walls

Refer to Wall and Skirt Layout Plan

1. Lay a line of bond and seal along the joint between the steel frame and the back edge of the skirt panel.

(Fig. 11)



Figure 11

2. Layout the damp course membrane so that the outer edge lines up with the outer edge of the skirt panels. Cut to length to suit and press into the bead of adhesive. (Fig. 12)



Figure 12

3. Lay another bead of bond and seal along the top edge of the damp course membrane approximately 15mm back from the outer edge. (Fig. 13)

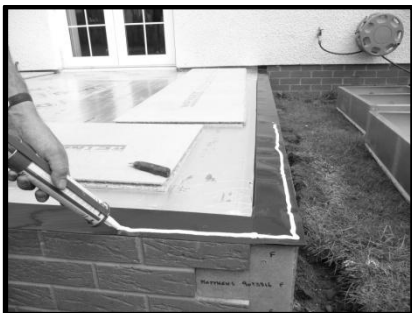


Figure 13

4. Lay out the wall sections in the order they are to be fitted. The panels are numbered to correspond with the plan.

Caution
The wall panels are heavy on the outer side and will tip over easily. Be careful to ensure that they are propped until fixed.

5. Starting at the house wall place a bead of mastic approx 15mm from the outer edge of the wall to seal the end that butts against the house.

6. Offer panel up to the house wall but do not fix in position.

The outer edge of the bricks should line up with the outer edge of the bricks on the skirt panels. (Fig. 14)



Figure 14

7. Following the layout plan place the next wall panel so that it continues on from the first, seal joins with a bead of mastic approx 15mm from the outer edge.
8. Insert the 4 no. M8 x 20 bolts supplied to fix the panels together. Do not fully tighten at this stage. (Fig. 15)

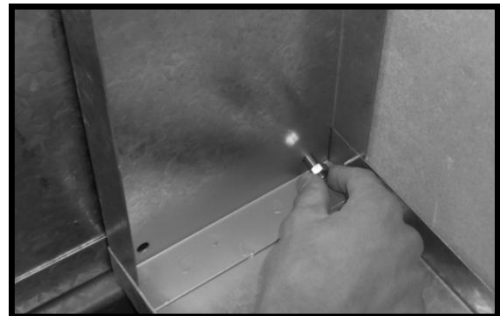


Figure 15

9. Repeat until all wall panels are in place.
10. Once all panels are correctly sited, you can secure to the house wall.
Check: *Are all mortar lines lining up with each other? Is the brick surface flush between joins and between walls and skirt?*

11. Check that the panel is upright before drilling an 8mm diameter hole x 80mm deep through the holes provided into the house wall. If you cannot utilise the holes provided drill a 10mm dia hole through the metalwork in the required position. Secure with the frame fixings supplied. (Fig. 16)



Figure 16

DURABASE Modular Dwarf Wall Assembly Instructions

12. Once fixed to the house wall, fully tighten all panel joins. The panels can now be fixed to the steel base using the 16mm hexagon headed tec screws supplied. (See Fig. 17)



Figure 17

13. Fix as close to the flange edges as possible and fix through double flanges where possible.
It will help to pre-drill the wall panels with a 5.5mm dia. drill, taking care not to drill through the steel base.

14. Once fully constructed, seal the joints in the brick backer panels with the adhesive supplied. Use the same adhesive to stick the spare brick tiles in place. (Fig. 18)

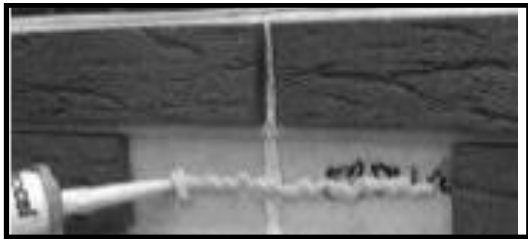


Figure 18

15. You will need to use some 10mm spacers (not supplied) to position the brick slips on the skirt panels. Press bricks firmly into place. (Fig. 19)



Figure 19

16. To point the joints, mix the mortar supplied to a smooth paste being careful not to add too much water and completely fill the joints around the bricks. (Fig. 20)

Note: Pointing tools not supplied.



Figure 20

Important for Correct Finish

Allow the mortar to dry until almost firm.

It should have a **dull finish whilst still moist and gritty but not wet.**

Use a curved pointing tool to finish off the joint and remove any remaining mortar with a soft brush. (Figs 21, 22)



Figure 21



Figure 22

It is advised to fit the conservatory at this stage

When fitting the conservatory please follow your conservatory supplier's instructions. If conservatory sills are to be secured to the base sill, use the 60mm long self drilling screws provided. Seal around the underside of the conservatory sill with mastic.

E. Fitting Floor Insulation

1. Place top hat insulation securing brackets at suitable intervals over the floor joists. (Fig. 23)



Figure 23

2. Cut to size and lay the polystyrene to fill the gaps between the joists. *The polystyrene can be cut using a long bladed Stanley knife or a wood saw.* (Fig. 24)



Figure 24

3. Start laying the floor boards from the left hand side of the conservatory, looking towards the house.
4. Lay the sheets the correct way up as marked. Use the off-cut from the last run to start the next. Always trim the boards to ensure the joins fall on a joist.

If your floor spans manholes or drains, it is advisable to glue the joins with a waterproof wood glue.

5. Your kit includes 'Floor Edge Strips', they are small angle sections approximately 1200mm long. They have to be tucked under the edge of the chipboard flooring where it is unsupported by steelwork. E.g. where the joists disappear under the modular wall. They can be cut to length as required.
6. Secure flooring to the joists using the 38mm self drilling screws supplied.

U Values

Upon final completion your Pre-fabricated **DURABASE** is designed to deliver the following heat retention performance:

U Value Information Table

Wall

Standard Brick Clad Wall (with no additional insulation)
- 0.94 W/m²K

Adding insulating materials as detailed will give the following u values:

100mm Rocksilk Flexible slab or equivalent:
- 0.40 W/m²K

150mm Polyfoam Floorboard Standard or equivalent:
- 0.25 W/m²K

150mm Crown Rafter Roll 32 or equivalent:
- 0.28 W/m²K

Further improvements can be achieved by introducing a layer of 25mm liner board (polyfoam) laminated to the reverse side of the plasterboard.

Floor

Standard Floor:
-0.50 W/m²K

Fire Regulations

A minimum of 12.5mm thick plasterboard should be fitted to the inside of the wall panels.

Thank you for choosing **DURABASE**