

# QUICK INSTALLATION GUIDE

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## 1. SETTING OUT

Use string lines to set out the outside line of the walls in the normal manner.

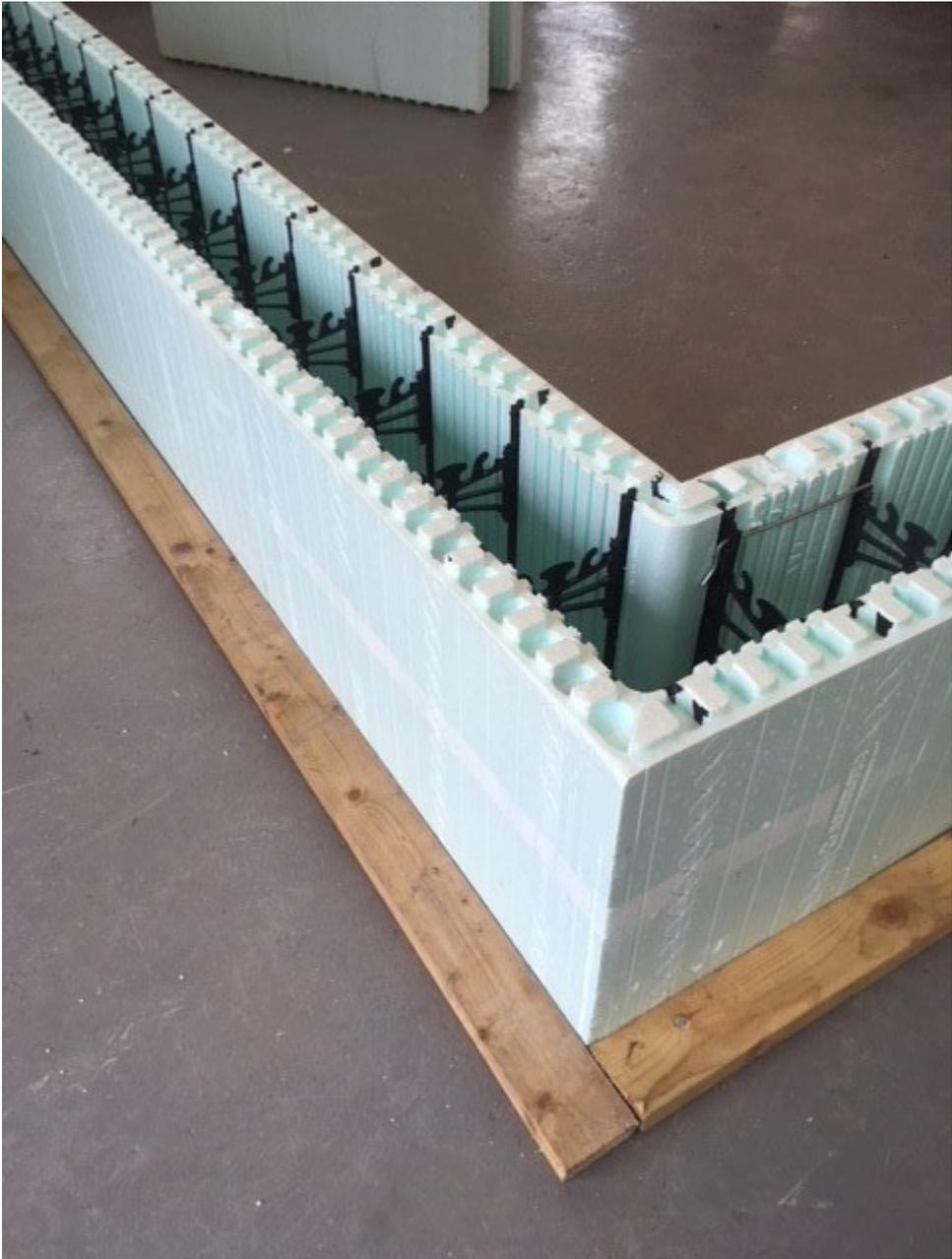
Set out the first course of NUDURA against the string lines.

Start with the corner blocks and work towards the centre of each length of wall.

If it is necessary to cut any of the blocks to fit, this should be done towards the centre of the wall.

**TIP:** If there is an opening (door/window) along the wall, try and place the cut here.

Fix a timber 'Kicker' (straight 4x2 timber is ideal here) to the footings, either internally or externally, which the first course of Nudura can be screwed to using the web fixings. This keeps everything in line. (Alternatively, steel channel from a dry lining or stud wall system, into which the outside leaf of polystyrene is inserted, can be screwed to the concrete).





**IMPORTANT:** For the first course of NUDURA, ALWAYS create a continuous unbroken run of block all the way around the building. Do not leave gaps, even where there are doorways. This will ensure continuity of alignment all the way up the building. The sections of block that fall within doorways can be trimmed out and re-used after the doorways have been built to full height including lintels.

## 2. CLIPPING THE BLOCKS TOGETHER





When the first course of blocks has been set out, each block is then clipped to the adjoining block.

VERTICAL JOINT CLIPS are placed at the TOP AND BOTTOM of the FIRST course at each joint.

For the second course of blocks, clip ONLY THE TOP of each joint.

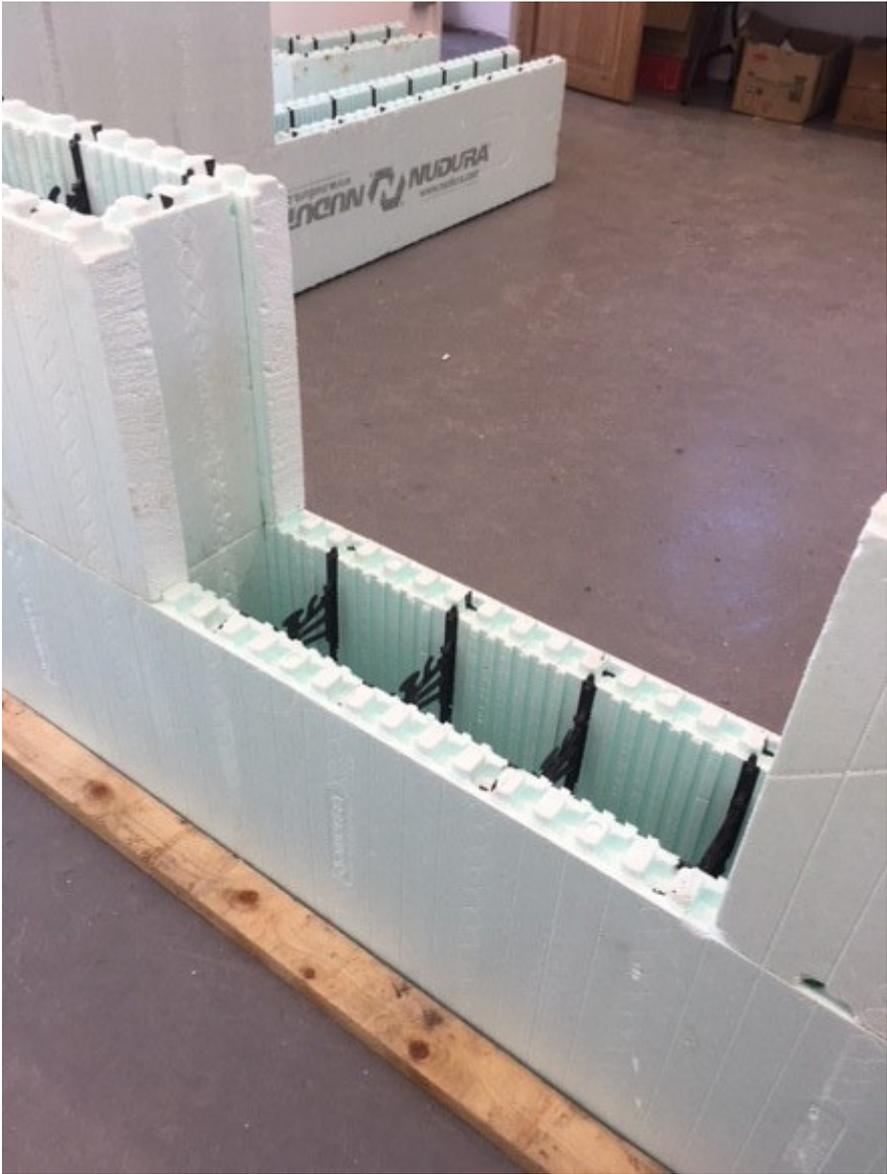
From the third course upwards it is usually only the corners that need to be clipped to the adjoining blocks.

**TIP:** If there are short sections of block at this level (eg. near a window), these can also be clipped.

ALWAYS clip every joint on the top course of blocks. This keeps the last course of blocks tight together which is especially important if more blocks are to be added on after the concrete pour.

Remember not all joints need to be clipped. On a long straight section of wall where there is good overlap to the course above and below, the blocks will hold themselves in place and therefore do not need Vertical Joint Clips. On short runs with changes of direction, they probably DO need clips.

### 3. SETTING OUT OPENINGS





When you have decided where your doors and window are to be placed within the NUDURA walls, mark them out by placing the End Caps within the blocks.

These End Caps create the vertical sides of the openings and are slid into the blocks and held in place by the dovetails on the inside face of the block. End Caps are the same height as a block and should be put in place as each course is built.

Do not try to slide them down more than one course of block. They are a tight fit and it is better to place them as you build each course.

**TIP:** Ideally, all End Caps should be placed somewhere between the webs. It means that no extra bracing is required as openings are formed. The End

Caps are simply slid into place and the block trimmed to suit the opening. If you have to cut a web to meet a dimension it must be well strapped.

#### 4. BUILDING UP THE COURSES



Build up the courses of NUDURA block to the required height remembering to place End Caps either side of openings on each course.

The NUDURA corner blocks have a long and a short side and when stacked alternately create a natural bond of two web spacings. This means that blocks placed along a wall also have this bond.

#### 5. CUTTING BLOCKS

If the blocks need to be trimmed to suit a specific measurement, they should always be cut on the vertical cut lines found along the length of the block at two inch intervals.

By cutting on these lines, you will be cutting down the side of the castellations at the top and bottom of the blocks.

Where ever possible cuts should be made along the centre line between 2 webs. This leaves both parts of block reusable, reducing waste and the need for extra bracing.



6. OPENINGS



When forming openings, once the end caps are in place on either side, the Lintel Closers need to be added into the block which will form the top of the door or window.

The Lintel Closer should be trimmed so that it bears on the top of the End Caps on either side of the opening.

This creates an unbroken thermal barrier between the concrete and the opening.

Once the block above the opening has been fixed in place, the lintel section can be temporarily propped for the concrete pour.



TIP: Offer up the block to be used as a lintel and work out where the lintel closer will fit to give cover over both end caps. Cut and fit the lintel closer to the block whilst it is on the ground.

## 7. THE ALIGNMENT SYSTEM

As the walls are built up, they will need to be propped in position using the temporary Alignment system.



The alignment system consists of the following:



1. A 3 metre galvanized channel section which is fixed in an upright position to the wall and screwed directly to the webs of the block.
2. A long green 'Turnbuckle' section which is adjustable for length and is attached to the upright channel with a 'gravity pin'. It has a screw thread one end which allows for minor adjustment to upright the wall.
3. A green cantilever section which hangs from the above gravity pin. This forms the base for the working platform and can take three scaffold boards in width.
4. An upright 'handrail' section which slots into the top of the cantilever and is held in place with a D-pin.

**Warning:** Walls should be propped as soon as possible to avoid wind damage. (Ideally at placement of the third course).







To fit the Alignment system:

Place the galvanised Channel upright against the wall in the centre of the marked vertical webs using the vertical lines marking each side of the web as a guide. These lines are 4 inches apart and should both be just visible either side of the channel when the channel is in the right position.

Use the supplied NUDURA Hex head screws to fix the channel to the blocks. Do not overtighten the screws. The Channel should have one screw in each course of block.

Once the channel is secured to the wall, the long green Turnbuckle section can be offered up to the channel with the screw thread at the top. Ensure there is at least 4 inches of thread visible to allow for adjustment. The Turnbuckle is fastened to the channel using the Gravity Pins

**IMPORTANT:** The gravity pins must ALWAYS be slid into place from the LEFT HAND SIDE ensuring that the curved end of the pin is pushed down into the channel so it cannot slide back out.

The baseplate of the turnbuckle has small and large holes in it. If the site has a concrete slab floor, the baseplate can be fixed down using 2 concrete screws fixed diagonally through the small holes. If the turnbuckle is not sitting on concrete, the baseplate can be fixed to the ground using larger metal pins driven through the larger holes.

Once the Turnbuckle section is securely fixed to the upright channel, the Cantilever section can be attached. The gravity pin at the top of the turnbuckle is used to hang the cantilever section from.

A second gravity pin then secures the lower part of the cantilever to the galvanised channel. This gravity pin also slides in from the LEFT HAND SIDE and is secured in the same way so it cannot slide back out.

Once the cantilever is securely held in place, the hand rail can be slotted into the top and held in place with a D-pin.

The alignment system is now ready to have scaffold boards fitted to create the working platform.

**IMPORTANT:** The Alignment system should be placed at 1.2 metre intervals along the length of the wall. This is to ensure the scaffold boards are properly supported and it also allows for the walls to be kept straight

#### 8. PRIOR TO THE CONCRETE POUR

Now the walls are fully propped make sure that there is continuous and safe staging and handrail.

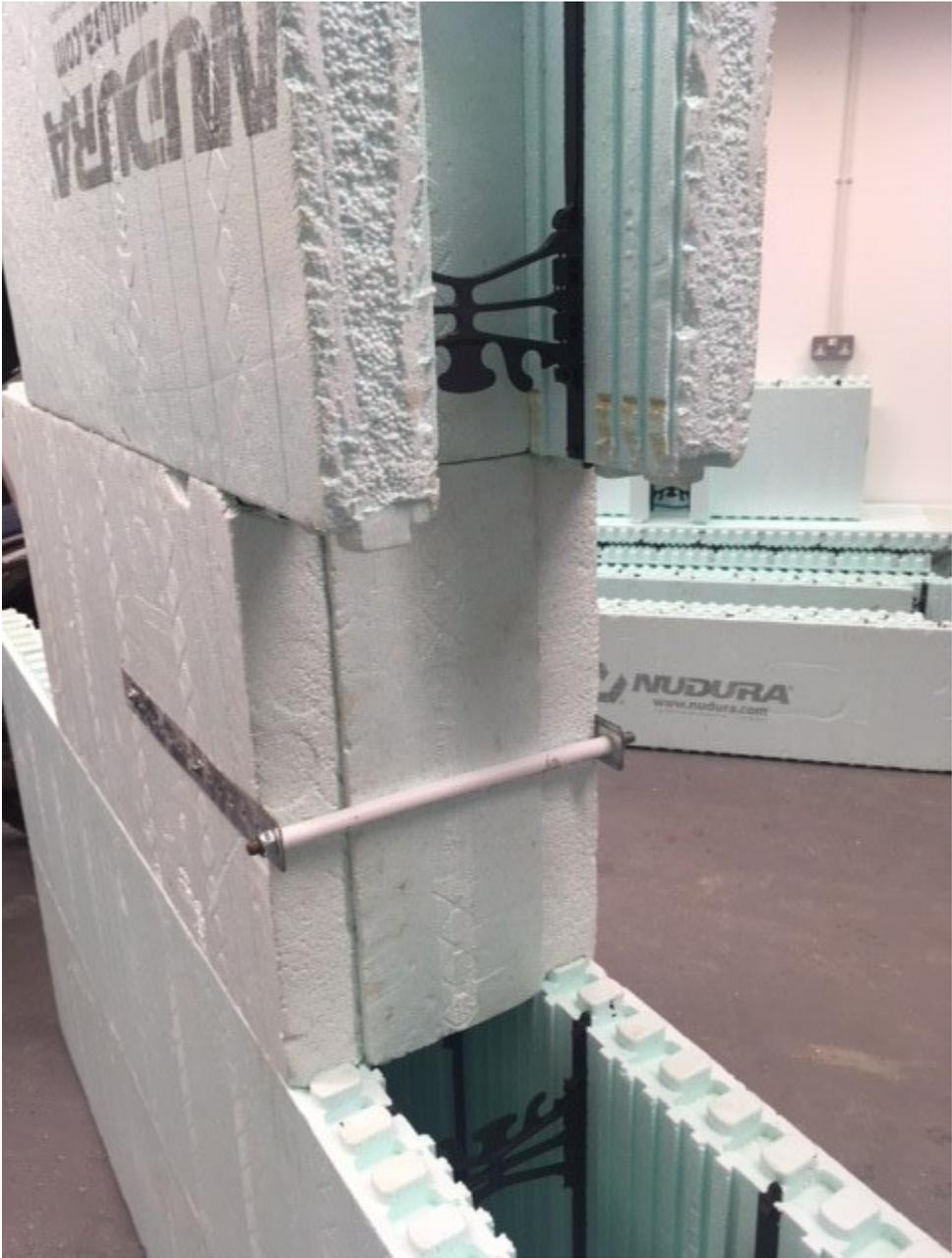
Lean all of the props in  $\frac{1}{2}$  a turn.

All lintels need to be braced with timber supports bearing across the webs at the bottom of the opening. By ensuring that the timbers sit directly on the webs any compression of the polystyrene is eliminated.





Check that all of the end caps are within two bars of a web or have been strapped (pictured below).





Top Tip: Use protective tape to cover all castellations, particularly if there is another course to be built post-pour, keeping the top of the block clean for the next lift.

#### 9. THE CONCRETE POUR

- Concrete should be ordered as a pump mix. 10mm aggregate, C25, 100 slump unless the strength has been specified by an engineer.
- Make sure that the pump can reach the whole of the site. Be aware of overhead cables and obstructions.
- The cavity should be clean with any water able to drain out of the blocks as you pour.
- Fill ground floor window areas first.

- Pour at a rate of no more than 1.2m in height per hour evenly distributed. (eg. If there were 6 courses and 3 loads of concrete then pour 2 courses per load)
- Consolidate the concrete with a 1" vibrating poker with a wand long enough to reach the lowest point. Insert the poker quickly without forcing it (approximately 5 seconds) and remove slowly. Do this every other web spacing always keeping one web back from the corners and openings.

If the wall is to be built higher do not fill the block to the top, this helps to keep the castellations clean.

- Check the wall for straightness using a string line and level and adjust using the props.
- Wet set starter bars for the next lift.
- Clean up waste concrete and all of the equipment including the props.
- Leave the wall to cure.

This guide is intended as a reminder to compliment the Official Training Course and is in no way designed as a replacement. Anyone working with NUDURA should be trained or under the guidance of an Authorised Installer.