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Hygienic PVC wall cladding fitting installation guide

Hygienic PVC semi rigid extruded wall sheets can be used in hygienic environments and areas subject to wet usage. The walling system has excellent adhesion properties to all sound substrates used for internal wall construction. It is suitable for new and refurbishment building projects. A range of sheets are available in White, Satin and High Gloss finish.

The walling systems incorporate a range of colour coordinated jointing systems, including two part joint trims, welded and single part trims for use in secure environments.

Premium grade adhesives are supplied to fix all types of sheet. Sanitary sealants are available in co-ordinating colours.

Description

Sheets are 2.5mm thick and are available in 2500mm or 3000mm height x 1220mm width.

The sheets are supplied with a protective film on the face which can be left in place until the area is ready for use. This also helps protect the new surface from dust while other trades are working in the area.

Hygienic PVCu wall sheets have a maximum service temperature of 80°C.

Although the sheets can be applied in most areas, they should never be installed near to a direct heat source (cookers, oven ranges, wall mounted griddles etc) where naked flame or severe heat would cause distortion or damage to the surface. It is recommended that sheets are installed at least 30 cm from a heat source.

Surface preparation

All surfaces must be smooth, sound, dry and free of contamination. If necessary, the walls should be cleaned down prior to the Hygienic PVC wall sheet installation, and primed using 10 parts water to 1 part PVA.

The working environment must also be clean and dust free. Failure to comply with these conditions will reduce the bond strength between adhesive and substrate, and may cause the sheets to de-bond.

- All substrates to be dry to 16% WME (Wood Moisture Equivalent) on Protimeter 'Surveymaster' equipment.
- All loose flaking paint and dust to be removed.
- All surfaces to be free from grease. Ceramic tiles must be thoroughly cleaned, degreased, rinsed and left to dry.
- Loose tiles to be removed and the area made good.
- Depressions in the substrate should be filled.
- All electrical switches, power points etc should be in a first fix state where possible. All electrical equipment should only be moved or altered by a qualified electrician.
- If possible, plumbing and pipework should be removed to be at first fix state and "tails" left protruding from the substrate. Sheets can then be drilled and slid over the pipe "tails". All holes should be drilled 3mm oversize to allow for expansion. Plumbing should always be carried out by a qualified plumber.
- Hot pipes and steam pipes should be insulated and a 3-5mm expansion gap should be created when installing sheets around these pipes.
- All pipes, screw fixings, bolts etc: fixed through the sheet should have minimum 3mm expansion gaps and be sealed using sanitary sealant.

Two-part polyurethane adhesive.

The sheets can be fixed directly to most sound and dry substrates with Nu-Clad two-part polyurethane adhesive.

The adhesive is available in two tub sizes:-

- 1 x 6.5kg unit for 2440mm sheets
- 1 x 8.0kg unit for 3050mm sheets

Part A is a viscous cream coloured paste supplied in a plastic tub. Part B is a catalyst (hardener) supplied in a foil bag (separated within the tub).

Pour the liquid contents of the foil bag (Part B) into the plastic container holding Part A and mix thoroughly for approximately 2-3 minutes until a uniform consistency is obtained throughout.

A low speed electric drill with mixing paddle attachment should be used to ensure complete mixing.

Once mixed, the adhesive should be applied to the (pre-cleaned) back of the sheet with a 5mm x 5mm square notched trowel.

Health and Safety Advice

Before using this adhesive, users must refer to the MSDS (Material Safety Data Sheet) for correct safety advice and carry out a COSHH (Control of Substances Hazardous to Health) assessment and risk assessment.

Always wear appropriate PPE (Personal Protective Equipment) and RPE (Respiratory Protective Equipment) when handling adhesives and ensure the area is adequately ventilated.

In the case of contact with eyes or skin, rinse immediately with plenty of water and seek medical advice.

MS/HG Polymer Adhesive

The sheets can be fixed to most smooth, sound, dry and porous substrates with Nu-Clad single part high quality single component, high strength synthetic polymer emulsion adhesive that is based on MS-Polymer, chemically neutral and fully elastic.

The adhesive needs to be applied generously to the first marked out section on the wall. Apply diagonal lines of adhesive approximately 400mm long with 50mm gaps, after each row alternate the direction of the lines. You should be using approximately 900ml of adhesive per a 8'x4' sheet and 1200ml per a 10'x4' sheet.

Health and Safety Advice

Before using this adhesive, users must refer to the MSDS (Material Safety Data Sheet) for correct safety advice and carry out a COSHH (Control of Substances Hazardous to Health) assessment and risk assessment.

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Suitable fixing methods

Substrate	Two-part polyurethane.	MS/HG Polymer Adhesive
Gypsum Board 12.5mm (e)	T	T
Minimum 9mm WBP Plywood*	T	T
Metal	T	
Ceramic Tiles (a)	T	
Plaster (b)	T	T
Cement Render (b)	T	T
Brickwork (b & c)	T	
Blockwork (b & c)	T	
Painted (d)	T	

(a) = Provided tiles are firmly bonded to the substrate and free from surface contamination, grease etc:

(b) = Surface should be dry. If in doubt test with a Protimeter, which should give a maximum reading of 16% wood moisture equivalent (WME). Plastered surfaces must be sealed with diluted PVA (or similar) before installation of the PVC wall sheet.

(c) = Brickwork and Blockwork should be of good quality and joints should be flush and dry.

(d) = A bond test is advisable to check adhesive does not react with paint.

(e) = 1 Part MS/HG Polymer Adhesive should not be used for bonding to moisture resistant substrates

* = Plywood must comply to EN 13986: 2004
 BS EN 636: 2003
 BS EN 315
 BS EN 314-2

Glue bond quality class 3 's' grade

Suitable substrates

- Good quality fair-faced brick or blockwork with well aligned joints all bagged up flush and all cement spots removed. They must be straight to within 3mm over 2 metres and brick / blocks flush with those adjacent. Not a suitable substrate for welding.
- Sand and cement rendering 1:3 mix with a steel trowelled finish.
- 12.5mm thick plasterboard.
- Minimum 9mm see specification details resin bonded plywood.
- Minimum 9mm MDF dense wood based sheets.
- Ceramic tiles, which must be securely bonded to the substrate and thoroughly cleaned.
- Most sound painted surfaces (an adhesive test is advisable to ascertain suitability).
- New pink finishing plasters. These surfaces are generally dusty. They should be brushed and thoroughly sealed with diluted PVA primer (1:10) dry to 16% WME.

Installation temperatures

NUWP Limited recommends the PVCu wall sheets are installed at approximately the same ambient 'service temperature' at which the area will be used when commissioned.

A minimum temperature of 14°C/57°F is recommended for all installation areas.

Nu-Clad adhesive must never be used below +5°C.

Sheets should be stored flat and be pre-conditioned for up to 24 hours to attain the ambient room temperature prior to the installation.

The sheets must be stored on a level flat surface off the ground (risk of condensation on the sheets if stored on damp surfaces).

Storage on un-even surfaces could cause the sheets to distort prior to installation.

Tools and equipment

In general, the main tools required are similar to carpentry hand tools. Below is a list of tools that you may find an advantage to have for the installation.

- 1 metre & 2 metre spirit levels
- stanley knife
- square
- chalk line
- laser level
- adjustable block plane
- 5m tape measure
- hammer
- carpenters bevel
- cold chisel
- rubber mallet
- carpenters 19/25mm wood chisels
- screwdrivers
- files (round & square)
- hole cutters
- hacksaw
- sharpening stone
- Scrapers
- metal snips
- 50mm paint brush
- good quality mastic gun
- mixing paddle
- 5mm x 5mm square notch steel trowel
- biro pens and pencils
- water based markers
- hand roller
- 3000mm rigid straight edge
- electric Jigsaw (with 'fine tooth' cutting blades)
- circular saw with T.C.T fine tooth blade and pressure guide for cutting
- 750 watt electric drill (for mixing adhesive)
- if required (on site) - 110 transformer (including 110v leads)

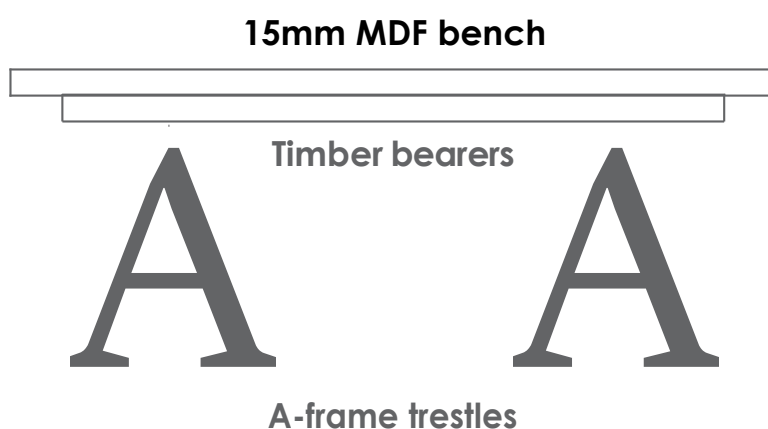
Ensure all electrical equipment is PAT tested.

Safety equipment:

- barrier cream
- goggles / safety glasses
- protective gloves
- face mask (nose / mouth protection)
- hard hat
- safety boots
- hi-viz safety vest

Other essential equipment:

You will also need a 2.5 x 1.22m workbench made from 15mm MDF board (or similar), with support bearers to prevent the MDF from bowing in the middle. The bench provides an excellent work surface for the sheets which are 1.220m x 3.000m.



Safety information

Apart from the normal health and safety rules employed within the construction industry, the following points should be noted:-

- Safety information displayed on the tubs and containers supplied by NUWP Limited must be strictly adhered to.
- Safety eye wear must be worn during cutting of materials, mixing of adhesive, cleaning and preparation of site, and where necessary to adhere to site regulations.
- Use face masks
- Display prominent safety signs when using hazardous materials, and to warn of a working area.
- Ensure good ventilation within the work area.
- Remove and dispose of all waste sensibly and carefully as per site instructions. Contact NUWP Limited on 0800 1804228 for all MSDS (Material Safety Data Sheets).
- Apply barrier creams, and wear protective gloves when mixing and applying Nu-Clad adhesives.
- Keep the working area clean and tidy.

Before starting work, users must refer to the relevant MSDS (Material Safety Data Sheet) for correct safety advice and carry out COSHH (Control of Substances Hazardous to Health) assessments where necessary. Contact NUWP Limited on 0800 1804228 for further advice.

Please ensure you follow the installation guidelines carefully to ensure best results.

Workstation

Set up a 'workstation' in close proximity to the area to be clad. A minimum area of 4m x 3m will be required to set up your work bench area.

Adjacent to the workstation, set up a 'glue-station', where all the mixing of adhesive takes place. The floor area in this location needs to be protected with cardboard (or similar) to prevent splashes of adhesive getting onto the floor.

If an existing or new floor has been laid prior to the installation of the wall sheets, it is essential to protect the floor around the work bench and the 'glue-station' where adhesive may get spilt.

The 'glue-station' is also where the trowels and mixing paddles are cleaned regularly to prevent a build up of excessive adhesive on the tools.

Please note: If the adhesive gets on the floor and is allowed to set, removal can be difficult, if not impossible. Therefore if a spillage or splashes occur, they should be wiped up immediately.

Setting out

- Firstly, check out the room which is to be clad, paying particular attention to the corners, window reveals, and door entrances. These need to be inspected to ensure they are straight, and free of any building waste which could prevent the sheets laying flat to the substrate after the adhesive has been applied and the sheet is installed.
- The wall surface must be clean prior to installation.
- Once preparation has been completed a datum line must be installed. The datum line is used for the calculation of measurements to ceiling height, sockets and pipes etc: and to ensure the sheets are 'plum' as the installation proceeds.
- The datum line should be installed at approximately 'eye level' on the wall and should be done with a laser for accuracy.
- The datum line height (from subfloor) should be calculated to allow for the appropriate skirting height where the bottom of the PVCu sheet meets the specific floor finish (sheet pvc flooring, quarry tiles, pvc sit-on skirting etc). **Note:** Quarry tile coving must always be installed before the wall sheet is fitted.
- A series of 'check measurements' should be taken around the room from datum to subfloor to ascertain the 'average' height of the datum line.
- The datum height (minus the appropriate floor skirting height) will eventually be transferred on to the face of the PVCu wall sheet. This will enable all subsequent measurements to be processed from the datum line on the sheet.
- Once all measurements have been taken from the wall, they can then be transferred on to the sheet. When the sheet is eventually fitted to the wall, the datum line on the sheet must line up with the datum line on the wall.
- After installing the datum line and calculating the average height, you must then plan the 'layout' of the PVCu sheets. This ensures the best layout of the sheets and minimises the number of joints used in the system.
- If hidden transition detail to be used apply to substrate prior to application of sheets.

Double sided tape primer application

- Prior to the installation of PVC Hygienic wall sheets, double sided tape primer should be applied in three locations to the substrate with a 50mm paint brush. The primer 'lines' should correspond to the double sided tapes which will subsequently be fitted on the reverse side of the sheet - at the top, the middle (normally just below datum height) and at the bottom of the sheet. The double sided tapes hold the sheet firmly to the substrate whilst the adhesive cures. Allow the 'tape primer' to dry to a tacky finish, (approximately 10 minutes). **Note:** The tape primer remains permanently tacky and never dries out totally.
- Before priming, the type of floor finish must be taken into account. With a sheet vinyl floor finish incorporating a self-coved skirting, the 'tape primer' (and subsequent double sided tape) must be applied high enough (i.e. min 20mm) to allow for a PVCu 'transition strip' to be fitted at the bottom of the sheet*. In the case of the sheet overlapping a sheet vinyl floor skirting (such as shower areas) where the vinyl has been installed first, a minimum height of 50mm from the bottom of the sheet is required. See diagram showing the double sided tape layout on the back of the sheet.
- When using two-part (snap-on) internal / external corner profiles, prime the wall corners with 'tape primer' sufficiently enough to cover the area that the corners are to be installed. This should be done at the same time as the priming out for the double sided tape, allowing primer to dry to provide a tacky surface.
- When the walls are ready for application, double sided tape should be applied to the back of the PVCu corners in four strips of approximately 150mm long down the corner length. Remove the protective cover from the tape and apply the corner to the substrate.
- If a PVCu 'transition strip' is to be fitted (at a later stage) to the bottom of the sheet (where wall sheets meet the sheet vinyl floor skirting), the corner profile 'back section' must be fitted 20mm shorter than the overall length.

* Note: The transition trim should never be used in wet areas such as showers and wet room adaptations.

Installation procedure

Once all preparation has been carried out, walls are cleaned and free from dust, any possible contamination from grease (in kitchen and shower areas) has been removed, the datum line and 'tape primer' have been applied, you are now ready to install the Hygienic PVCu wall sheets.

- Place sheet on the workbench and inspect for any damage. Carefully, on the front face (with the protective film), mark your datum with a biro pen, taking care not to press too hard, thus damaging the surface of the sheet.
- Take measurements from the wall, and then transfer these to the sheet. Cut the sheet making sure the sheet is well supported to reduce any risk of stress in the material when being cut.
- After the final cutting, plane the edges with your adjustable block plane to remove burrs and to leave a clean smooth finish.
- Offer the sheet to the substrate to check your work (dry fitting), ensuring you have a 2-3mm expansion joint at all abutments and pipe work.
- When the sheet has finally been made to suit the required wall finish detail, lay this face-down on the workbench and clean the back of the sheet.
- Apply double sided tapes at the top, middle and bottom of the sheet - to correspond with the primer (DO NOT remove the tapes' protective paper at this time).

Applying Nu-Clad adhesive

- Wear appropriate safety equipment before handling materials.
- For two-part adhesives carefully mix parts A and B together using a large mixing drill and paddle for a minimum of 3 minutes, until an even colour is acquired.
Note: Adhesive must be mechanically mixed.
- Apply the adhesive to the back of the sheet, using the recommended 5mm x 5mm notched trowel. The adhesive should be applied approximately 15mm from the edge of the sheet (where joint strips are to be fitted), and right up to the double sided tapes.
- The working time of Nu-Clad 2 part adhesive is approximately 40 minutes depending on the ambient temperature of the room.
- The trowel must be held so that the adhesive is applied to an even finish, and the trowel notches are replicated to the same depth over the sheet.

Health and Safety Advice

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Always wear appropriate PPE (Personal Protective Equipment) and RPE (Respiratory Protective Equipment) when handling adhesives and ensure the area is adequately ventilated.

In the case of contact with eyes or skin, rinse immediately with plenty of water and seek medical advice.

Fitting Hygienic PVC sheets

- After applying the adhesive, carefully remove the double sided tape 'protective film' and place into a rubbish container. Lift the sheet and install to the required location, ensuring the datum line on the sheet corresponds to the datum line on the wall.
- Once fitted to the substrate, apply pressure to the whole of the sheet face to ensure the adhesive has been transferred and will be fully bonded to the substrate (this is normally done with a hand roller or block of timber covered with a material to prevent the surface being damaged).
- Failure to ensure a good transfer of adhesive to the substrate could result in the sheet debonding.
- Ensure any adhesive residue is thoroughly cleaned off the surface of the sheet or joint trims (and other adjacent surfaces). This must be done immediately, before the adhesive sets.

Fitting two part PVCu joint trims

- Once the sheet is in position, the 'back' section of the two-part PVCu vertical joint strip should be fitted. This should be slid behind the leading edge of the sheet until it is approximately 3mm from the central spine.
- If a PVCu 'transition strip' is to be used to create a joint between the sheet and the sheet vinyl floor finish, the back part of the vertical strip should be cut back (by 20mm) to allow the horizontal transition strip to be fitted at the base of the sheet (at a later stage). To find the correct length of the vertical section required, use a small piece of transition strip (as a template) and fit this to the bottom of the sheet.
- When fitting the next sheet, ensure the datum lines are aligned correctly and then position the sheet on top of the back section of the PVCu joint strip, approximately 3mm from the central spine.
- A 2-3 mm gap either side of the central spine will allow the sheets adequate room to expand and contract underneath the 'front' face of the two-part (snap-on) cover trim.
- Carry out this procedure throughout the installation and then finish by installing the 'front' face of the two-part (snap-on) cover trim, cut to the appropriate length. **Note:** the 'front' face cover trims can be installed as the work proceeds, or left until all sheets have been installed.
- The 'front' face joint strip covers should initially be positioned by hand pressure. They can then be fully located by tapping with a rubber mallet or small hammer and wooden block.

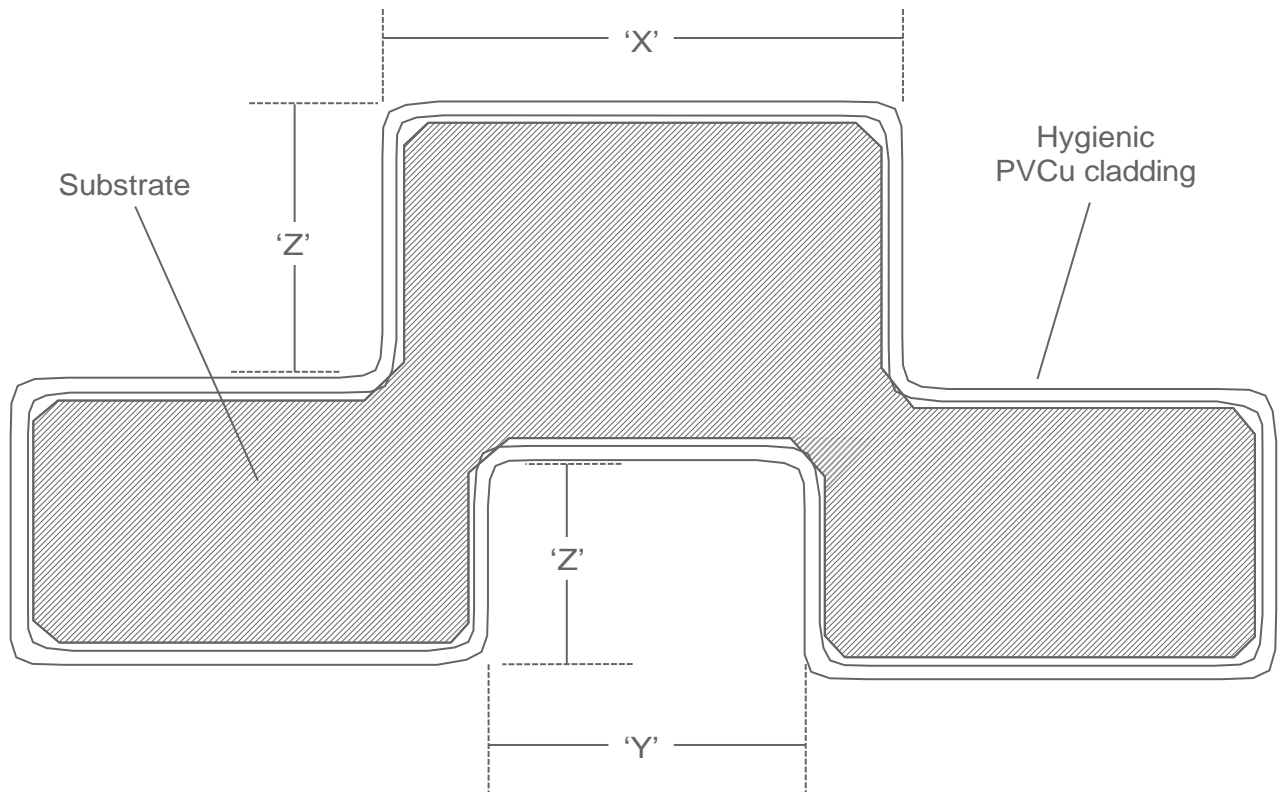
Fitting single part PVCU joint trims

- The process of the single part joint strip is much the same as the two-part trim except, during the preparation of the sheet a small chamfer will need to be applied to the edges of the sheet. This will enable the single part joint strip to be fitted more easily to the sheet. The joint trim has a moisture resistant gasket seal on the inner edges which could be damaged if forced onto the sheet.
- Once the first sheet has been installed, the single part joint strip is fitted onto the 'leading' edge which meets the next sheet. After the next sheet has been prepared and adhesive applied, a bead of sanitary sealant should be applied alongside the joint strip prior to that subsequent sheet being installed. The joint strip must then be knocked over the second sheet edge to achieve a sealed joint detail. By applying sanitary sealant to the back edge of the joint strip, it prevents the strip being moved at a later stage and the sheet edge becoming visible and open.

Thermoformed corner detail

NUWP Limited recommends, wherever possible, to use a thermoformed internal / external corner detail when installing the sheets. This is achieved by heating the sheet on a thermoformer unit and manually forming the sheet to the desired angle.

Hygienic PVC wall sheets thermoformed corners



'X' - External to External corners = + 8mm

'Y' - Internal to Internal corners = -8mm

'Z' - Internal to External / or External to Internal corners - Is the same measurement as substrate

All measurements to be marked on 'face' of PVCu sheets and taken from outside of previous corner



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