SHEEHY & PARTNERS
PTY LIMITED
CONSULTING ENGINEERS
STRUCTURAL AND CIVIL
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SM:/PK7306.005

June 2011

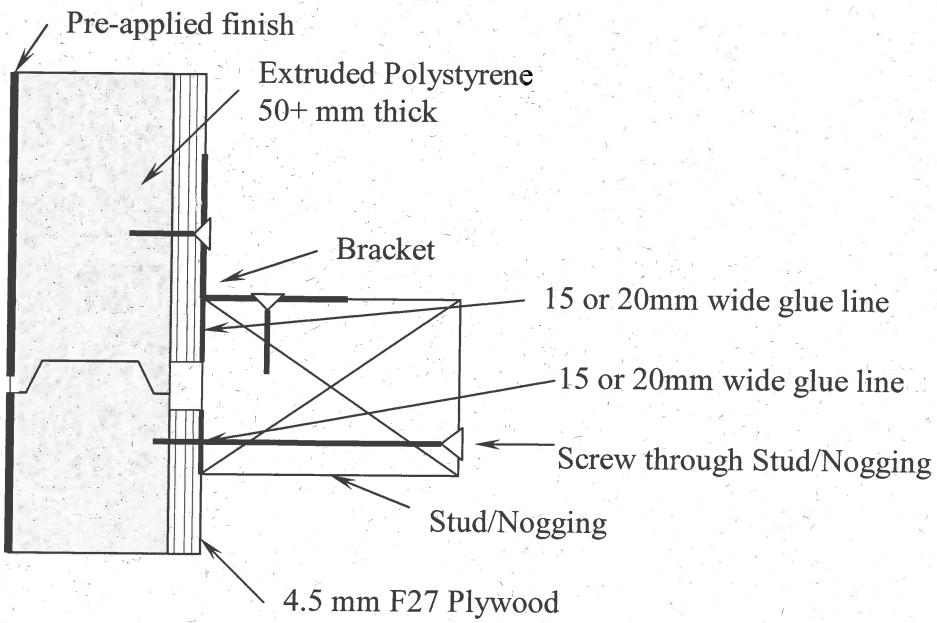
TO WHOM IT MAY CONCERN

POLYTEK WALL CLADDING PANEL
CYCLONIC WIND REGIONS

This is to certify that Sheehy & Partners have designed the fixing system for the wall panel known as "Polytek Enviro Panel" for use:

1. As a cladding panel in accordance with AS 1170-2:-2002 and AS 1720.1-1997.

POLYTEK WALL PANEL GEOMETRY



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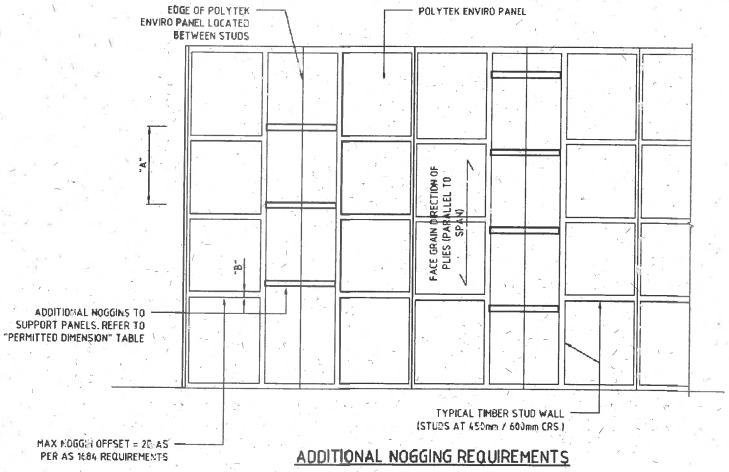
The Polytek Enviro Panel parameters and design capacities are summarised below.

DESIGN ASSUMPTIONS

The design has been based on the following panel characteristics as agreed with Polytek:

- The plywood backing is a 4.5 mm thick 3-layered F27 Plywood sheet (manufactured to AS2269.0:2008) glued to a Polystyrene sheet (of 50mm minimum thickness). It is assumed that the flexural strength/stiffness of the Polystyrene sheet is enough to prevent the Plywood sheet from buckling when in-plane shear is applied to the plywood sheet.
- Bond between the panel and wall framing is achieved using the Fuller Toolbox adhesive sealant (or approved equivalent) for structural applications, with a continuous 15mm wide glue line on each stud.
- The minimum shear strength between a grade F5 wall stud and the F27 plywood sheeting when using the glue is in excess of 0.21 N/mm^2 (based on a 15 mm wide glue line).
- The minimum tensile strength between a grade F5 wall noggin and the F27 plywood sheeting when using the glue is in excess of 130N/mm^2 (based on a 15mm wide glue line).
- The structural capacity of the glue when used with the above mentioned pieces of timber is guaranteed by the glue manufacturer to achieve the above minimum shear and tensile strengths.
- The long-term integrity and bond of the glue is guaranteed by the manufacturer.
- The minimum continuous glue line width between a panel and the stud wall is 15 mm for all wall studs and noggings.
- Maximum building height is 10m
- The building is not adversely affected by local topography and is not situated on a hill, ridge or escarpment i.e. M_t as defined in AS 1170:2 is equal to unity.
- When used as a cladding panel,
    - When the panels are placed horizontally, the maximum panel overhang past a stud is 225mm.
    - When the panels are placed vertically, additional noggins are placed between studs across the panel edge as noted in the table below to suit the wind region of the building location.



ADDITIONAL NOGGING REQUIREMENTS

N.T.S.

PERMITTED DIMENSIONS		
WIND CLASSIFICATION	MIN GLUE LINE WIDTH PER STUD/NOGGIN (mm)	MAX. NOGGIN SPACING "A" (mm)
C1	2 X 15	700
C2	2 X 15	600
C3	2 X 20	550
C4	2 X 20	475

CONSTRUCTION METHOD

The structural capacity of the walls is reliant on the quality of the glue interface between the panels and the studs and is therefore directly correlated to the quality of workmanship by the builder.

In order to ensure that the wall panel and the studs or noggins are properly pulled together after glue is applied, the use of a number of mechanical fixings is necessary.

The aim of the construction method is to ensure that after the glue bead is placed and the two members are pulled together the resulting minimum glue line width of 15 or 20 mm is achieved. It is important that the glue is placed immediately before the joining of the members to ensure that the glue achieves its full bond capacity. The glue shall also be placed as per the manufacturer's specifications.

The total number of mechanical fixings needed, will vary depending on the alignment of the plywood sheet and the arrangement of studs and noggings and it will be the responsibility of the builder to provide an adequate number of mechanical fixings to ensure proper contact between the wall studs, noggins and the plywood sheet however there shall be a minimum of 4 mechanical fixings per panel (one at each corner) and mechanical fixings shall be placed at no more than 1.5 m apart. Mechanical fixings may be either brackets or screws.

CERTIFICATION

Provided the above design assumptions and construction method are adhered to, we hereby certify that the Polytek Enviro Panel is suitable for use as a cladding panel, subject to wind loadings in accordance with AS 1170:2 – 2002.

The undersigned is a Registered Practising Engineer in Queensland (RPEQ No. 8023)

Yours faithfully

S McDonald for and on behalf of
SHEEHY & PARTNERS PTY LTD
Consulting Engineers