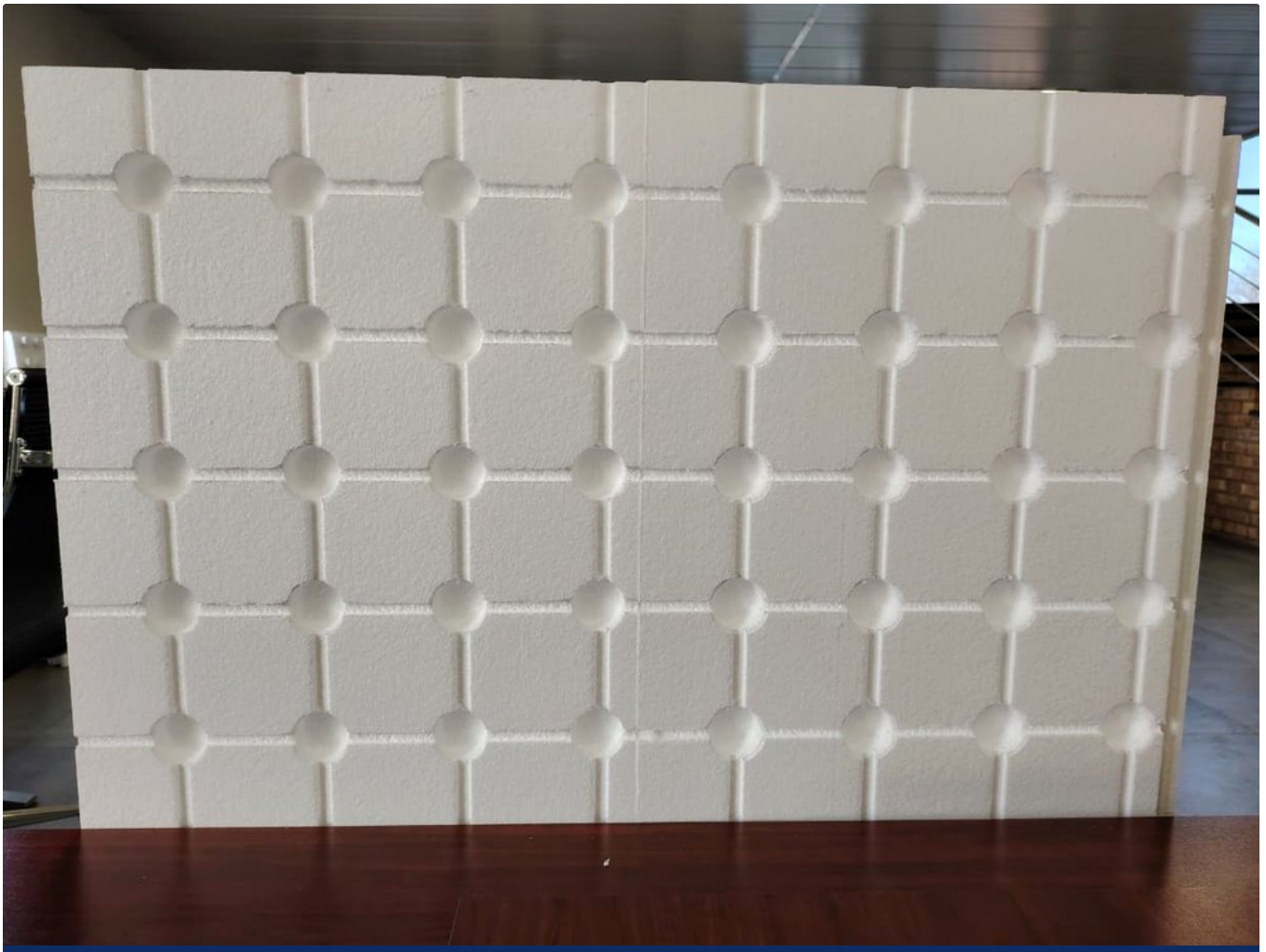




INSTALLATION GUIDE

LiteCel® CD — EPS Cavity and Drainage System

Moulded EPS cavity board with drainage knobs on one face, and the SANS 28 double-triangle tie that passes through it — insulation, a drained 25 mm cavity and the tie, specified and supplied as one system.

DOCUMENT
TP-IG-LITECEL-CD

ISSUED
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PRODUCT
litecel-cd

STATUS
Issued for use

BEFORE YOU START

The inner leaf of a masonry cavity wall, built true and clean, with the DPC and the weep holes already set out. For drainage-board use, a sound and cured waterproofed surface — vertical or horizontal — with the drainage outlet established before the boards go on.

TOOLS

- Hot-wire cutter, hand saw or fine-tooth panel saw for cutting boards
- Tape, line and level
- Cavity batten to catch mortar droppings
- Trowel and a soft brush for keeping the cavity clean

SEQUENCE

1 • Confirm the tie before the first board is laid

The LiteCel build-up is a 60 mm cavity. SANS 10164-1 5.2.1.4(a) requires 50 mm of embedment in each leaf, so the tie is the 200 mm double triangle. The 150 mm tie is for a 50 mm cavity and must not be used here. If the design stacks two boards, the cavity becomes 95 mm and a wire tie may not be used at all — stop and refer that back to the designer before building.

CHECK BEFORE MOVING ON

- The ties on site are the 200 mm double triangle, not the 150 mm.
- Each bundle is 100 ties of a single type, length and material, tagged with the manufacturer's mark, the count and the nominal length.
- If the design stacks boards, the tie question has been referred back and answered before building.

2 • Set out from the DPC

The board is 425 mm high, which is five brick courses, and the tie course is the board course. Start the first board off the DPC so that every board joint lands on a tie course and the set-out runs true to the top of the wall. Confirm the weep holes are at 600 mm centres in the vertical joint at DPC level, because that is where the water this board collects has to leave.

CHECK BEFORE MOVING ON

- First course is level off the DPC.
- Weep holes are open and at 600 mm centres in the vertical joint.
- The board joint and the tie course coincide, and the set-out runs true to the top of the wall.

3 • Lay the boards in series, knobs facing the outer leaf

The knobs face outwards — they hold the drained cavity open against the outer leaf. Bring each board up against the last so the half-lap closes: the boards sit snug and the knob pitch runs unbroken across the joint. Do not force a board; if it will not close, the fault is nearly always mortar on the lap. Cut boards with a hot-wire cutter or a fine-tooth saw and keep the cut edge to a corner or an opening.

CHECK BEFORE MOVING ON

- Every half-lap is closed - no open joint at the board-to-board line.
- Knobs are proud and facing the outer leaf.
- Any board that would not close has been lifted and the lap cleaned, not forced.

4 • Build the ties in as the wall rises

The tie passes through the board and into both leaves, bedded in the mortar with at least 50 mm of embedment each side, and laid level or with a slight fall to the outer leaf so it never carries water inwards. Field spacing is 425 mm vertically by 600 mm horizontally. Add the extra ties SANS 10164-1 5.2.1.4(a) requires at not more than 300 mm of height beside every opening and at every movement joint — those are additional to the field spacing, not part of it.

CHECK BEFORE MOVING ON

- At least 50 mm of embedment in each leaf.
- Every tie is level or falling towards the outer leaf - none falling inwards.
- Extra ties are in beside every opening and at every movement joint, at not more than 300 mm of height.
- Field spacing suits the leaf actually built: 3,92 ties/m² is not sufficient on a 65 mm leaf.

5 • Keep the cavity clear — the step that decides the outcome

Run a cavity batten on the ties and lift it as the wall rises, so mortar droppings are caught rather than left to bridge the 25 mm gap. A bridge carries water to the inner leaf and puts the drainage path out of service above it. Clean off the ties as you go and brush the cavity down at the DPC before the work closes up.

CHECK BEFORE MOVING ON

- The cavity is clear from DPC to wall plate.
- No mortar droppings bridge the 25 mm gap between the knobs.
- Ties are clean and the cavity has been brushed down at the DPC.

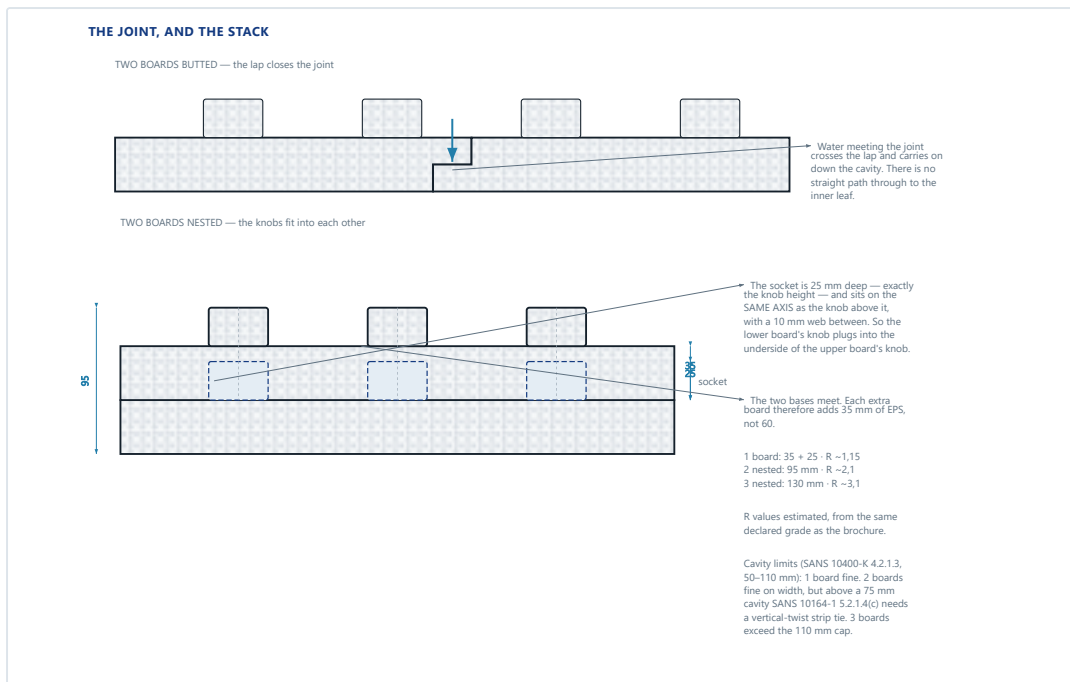
6 • Close up and check the drainage path

Before the cavity is closed, look through the weep holes at DPC level and confirm the path from the board face to the outside is open. That is the last moment the drainage path can be inspected. Cover the boards within the construction programme — EPS is not for permanent UV exposure.

CHECK BEFORE MOVING ON

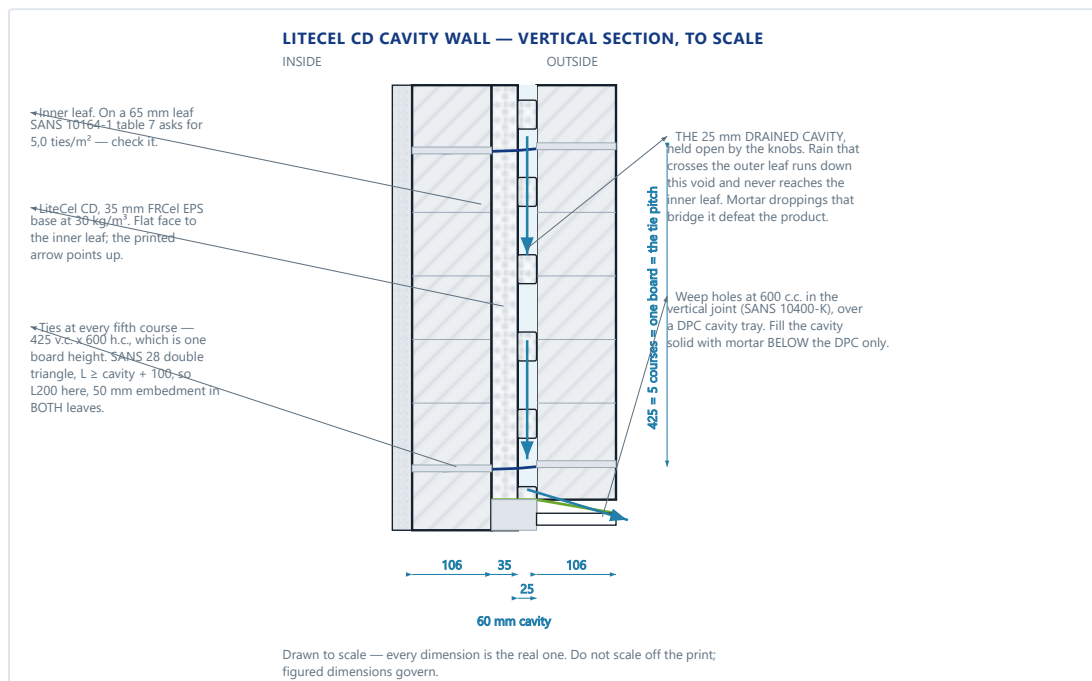
- The path from the board face to the outside is open, checked through the weep holes at DPC level.
- The drainage path is unobstructed - this is the last moment it can be inspected.
- Boards are covered; no permanent UV exposure.

In a cavity wall	No separate fixing. The board is held by the ties that pass through it and by the leaves either side.
Tie	SANS 28 Table 4 double triangle, 200 mm, 4,3 mm galvanised mild steel (or 4,0 mm stainless where specified). 50 mm embedment in each leaf.
Tie spacing	425 mm vertical × 600 mm horizontal = 3,92 ties/m², subject to the SANS 10164-1 Table 7 minimum for the leaf being built — 5,0 ties/m² on a 65 mm leaf.
Extra ties	At not more than 300 mm of height beside every opening and at every movement joint (SANS 10164-1 5.2.1.4(a)).
As a drainage board (vertical or horizontal)	Fixed or ballasted to the project engineer's specification. The fixing must not puncture the waterproofing behind it.



Board-to-board joint, and stacking for a higher R-value

Boards sit snug in series: the half-lap closes the joint and the knob pitch runs unbroken across it. Stacked, the knob of the lower board seats into the socket moulded under the knob above, so each added board contributes its 35 mm base - not 60 mm.



Typical cavity wall

The board against the inner leaf, the 25 mm drained cavity held open by the knobs, and the double-triangle tie passing through the board into both leaves. Water that penetrates the outer leaf runs down the channels between the knobs to the DPC and out through the weep holes.

WHAT ACTUALLY GOES WRONG ON SITE

- Using the 150 mm tie. It is the 50 mm-cavity tie; the 60 mm LiteCel cavity needs 200 mm to keep 50 mm in each leaf.
- Reading the tie length as the cavity width. The tie length is the cavity plus 100 mm.

- Mortar droppings bridging the cavity. This is the failure that gets blamed on the board and is caused on site — use a cavity batten.
- Laying the boards knobs-inwards. The knobs make the drained cavity and must face the outer leaf.
- Ties laid falling towards the inner leaf, which walks water inwards along the tie.
- Spacing ties at 3,92/m² on a 65 mm leaf. Table 7 asks for 5,0/m² there — the LiteCel field spacing is not automatically sufficient.
- Stacking two boards in a cavity wall and keeping the wire tie. At 95 mm the cavity is past the 75 mm wire-tie limit.
- Quoting the estimated R-values into an XA submission without confirming them first.

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