

DIY: Kewl Floor (underfloor entrance)

By Steve Davies

Compared to solid floors, open mesh floors provide improved ventilation and varroa management, but not all open mesh floors are the same...

Kewl floors are similar to the Dartington long hive (and probably others), where the bees gain access through the floor emerging underneath the frames.

The design of these floors appealed to me for several reasons; a) the underfloor entrance is protected from the weather, b) the entrance gap is too narrow for mice to gain access and c) they can provide additional protection from wasps (especially with a Correx entrance reducer).

Materials:

Timber (22mm x 94mm x 2.4mtrs) - £8

National Open Mesh Floor Correx (budget) - £3.60

Expanded Galvanised Mesh 18" x 18" - £8.60

Metal Frame Runners - £1.60 (stainless steel £3.50)

Total material cost £24

New unit purchase price £60

Preparation:

From the 22mm x 94mm timber, cut the following pieces:

Sides - 2 x 460mm long

Landing board - 460mm (length) x 70mm (width) x 10mm (thick)

Landing board back plate - 420mm (length) x 70mm (width) x 20mm (thick)

Top entrance - 460mm (length) x 62mm (width)* x 20mm (thick)

Back plate/varroa tray - 420mm (length) x 70mm (width) x 20mm (thick)

Top edging strips (20mm x 20mm) - 2 x 460mm and 2 x 420mm

* Top entrance width is approximate, cut at 70mm and full details will be given within the construction.



Construction:

• First, cut a notch on both side panels to match both the width and thickness of the landing board.



• For simplicity, I will be using frame runners for the varroa tray but, if you have a router, then you could route a 10mm groove along the bottom edge of both sides (opposite edge to the notches).

• With the back plate section, measure down 40mm along one long edge and cut this off. Save the off cut as this will form the back plate to the varroa tray.

• Glue and pin the landing board to the notches of both side panels. This will be the bottom edge.

• Turn the frame over then glue and pin the 40mm back plate to the other end of the side panels but at the TOP.

• Check to make sure the framework is square. Measure diagonally between corners, if one measurement is different, slightly push the appropriate corners until true. NOTE: this is easier to do than explain 😊



- Position the landing board back plate behind the landing board. Glue and pin the back plate to the rear edge of the landing board and to both sides making sure it is perpendicular to the landing board.



- Next is the varroa mesh. For simplicity, you could place the mesh on the top of the unit, but you will need to cut a section out for the entrance gap. You may also need to seal the mesh edges afterwards to prevent rain ingress.

- The landing board top plate will now need to be cut to size, hence the * in 'Preparation'. The optimum gap for the entrance is 8mm so reduce the top plate to the necessary width to obtain this gap (mine worked out at 62mm).
- Glue and pin the top plate to the front edge of the framework ensuring you keep the 8mm entrance across the full width.
- Again, check the unit is square and adjust accordingly.



- I prefer to secure the mesh inside the hive and therefore routed out a groove around the inside edges.



- In both cases, staple the mesh firmly into place along all edges.
- Next, pin the edging strips around the outer edges of the framework. Do not glue these as they will be subject to the most wear and may need replacing at some stage.



All that remains are a few finishing touches.

- Cut two frame runners to length and pin these 1 – 2mm from the bottom edge of the side panels.



- Cut a piece of Correx sheeting to size but not too tight as you want to be able to slide the tray in/out smoothly.
- With the Correx in place, position the wooden off cut from the back plate, mark then trim to size. Again, leave a little space for movement.
- Glue and pin them together, screw a cup hook into the wood and you're done!



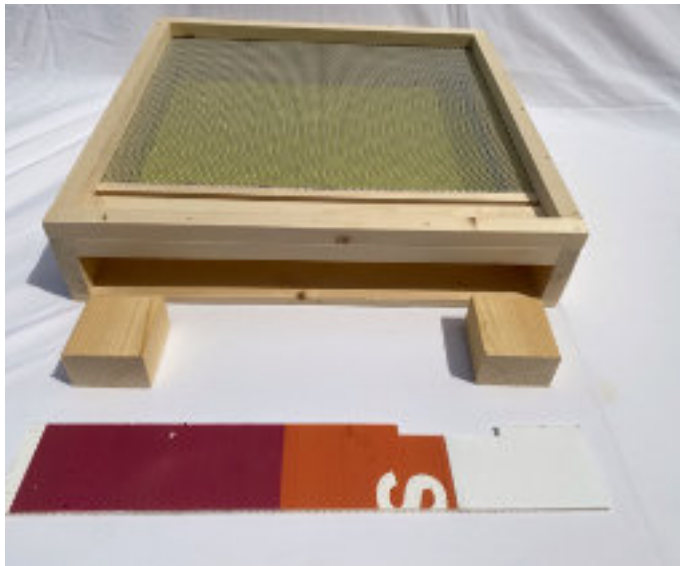
Note: Varroa trays are often made from 6mm plywood, but these need painting on a regular basis. I now use Correx as it is light and easy to clean. One caveat, a variety of insects (including wax moth) take up residence in the hollows so I would recommend sealing these with tape or filler.

If your carpentry is anything like mine, then the final task is to fill any gaps with good quality wood filler, sand down and stain.

Added Extras:

Although the entrance is more 'secure', some of my hives are in an area with mice and several wasp nests. Also, I prefer not to have the entrance fully open throughout winter. The solution to both is simplicity itself.

- Firstly, cut another piece of Correx to size so that it covers the complete length and width of the landing board.
- With the Correx placed on the landing board, cut two small blocks to size ensuring a reasonable fit but without restricting moving the Correx in/out.
- Remove the Correx, screw the blocks to each side (and the landing board below). Do not glue as you may need to remove the blocks for cleaning.
- Slide the Correx on top of the blocks and mark out a notch to correspond with the entrance gap. The notch can be whatever length you decide, mine tend to be around 70mm. Cut out with a sharp knife and consider sealing the tube gaps as per varroa tray.

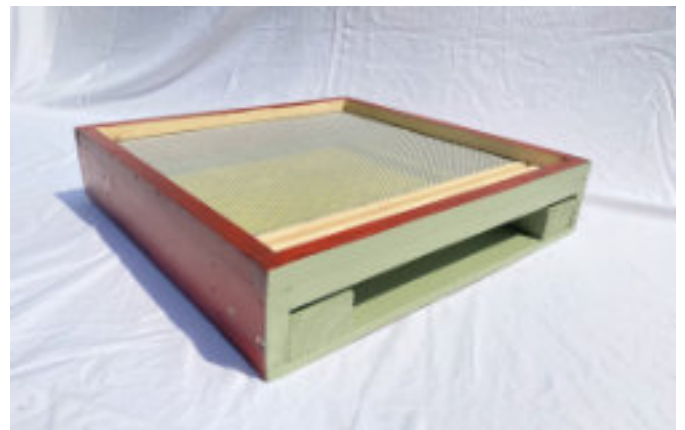


That's it. The Correx is left out during the season but inserted during winter. If I need to move a hive, or sublimate, the Correx is simply reversed blocking the entrance completely (pin/tape the Correx if moving a hive).

The next 'improvement' is for those who sublimate using a Gas-Vap device. Instead of sublimating from the varroa tray (and all the issues involved in sealing the gap), drill an 8mm hole in the wooden edging above the mesh. When not in use, this hole can be sealed with either gaffer tape or an appropriate sized cover cap. This method does not disturb the bees and all of the sublimation fumes are dispersed throughout the hive with none adhering to the mesh.



Final product, painted and ready to go.



One of the concerns with this type of floor is that the entrance can become blocked with hive debris/dead bees. All hives have this issue but, as the actual Kewl entrance is not clearly visible, checking for blockages requires high tech intervention – a bent piece of wire, in this case, a coat hanger!

