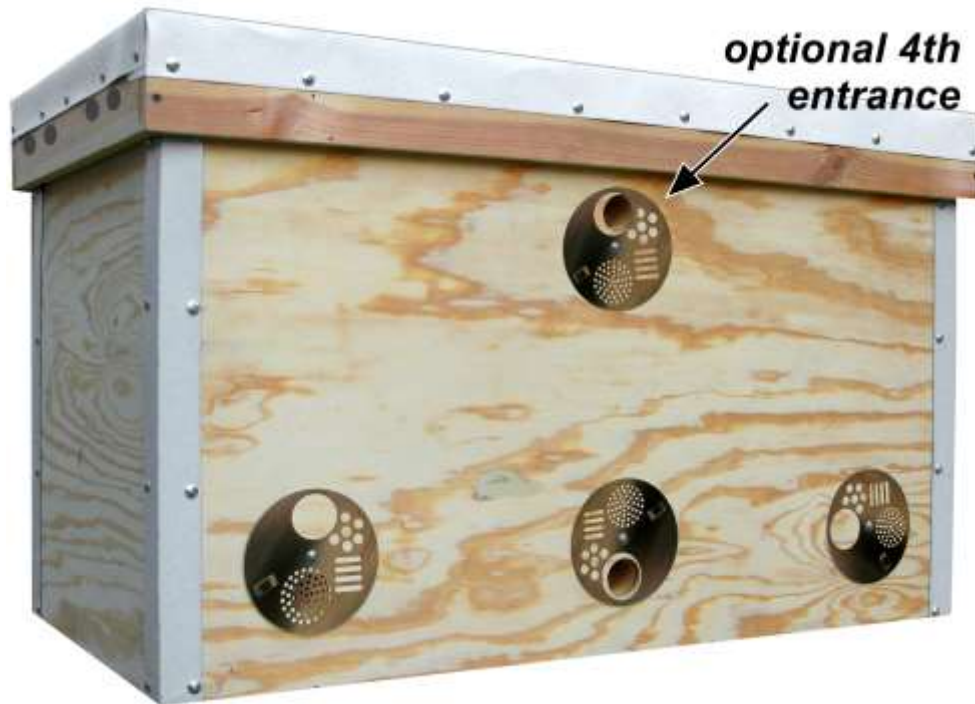


## LAYENS INSULATED HIVE – 20 FRAMES



### **\*\*\* IMPORTANT ! \*\*\***

1. Paint the hive before first use – see p. 2.
2. Prime all frames with wax foundation prior to use – see p. 2.
3. Don't let your hive overheat – shade it and use other precautions – see pp. 3 & 4.
4. Don't let the bees run out of room – make timely artificial swarms (splits) – see pp. 5-6.
5. Exclude mice and put an insulated pillow on the top bars for winter – see pp. 6-7.

## **PREPARING THE HIVE FOR USE**

### **1. PAINT THE HIVE**

Paint the outside of the hive (walls, bottom, and inside the entrance holes) and the weather-exposed part of the lid with flat exterior water-based (acrylic/latex) house paint. It is not toxic to the bees. Do one coat of primer and two coats of paint. Pay special attention to all edges and inside entrances. Light colors are preferable, white is best. If you live in the south, avoid dark colors to prevent overheating. A roller is the most convenient tool for painting hive boxes. Note: do not use oil-based paint or primer on your hive.

### **2. ATTACH EDGE PROTECTORS**

Once the paint is dry and started curing (preferably wait 24 hrs after the last coat), attach the metal edge protectors with 6 lath screws per corner (3 on each side – 1" from the top, in the middle, 1" from the bottom). These screws are designed to go through metal, no predrilling necessary. **CAUTION: SHARP EDGES! Wear work gloves and handle with care.**

### **3. ATTACH ENTRANCE GATE DISCS**

Position the entrance discs with the round hole over the entrance (like the central entrance in the picture). The screw hole can be centered over the entrance hole, or it can be to one side of the entrance. Attach with the silvery 1/2" lath screws (no predrilling necessary). Settings: fully closed; fully open; mouse guard (six 3/8" holes); queen excluder (four bars); ventilation.

### **4. INSTALL WAX FOUNDATION INTO FRAMES**

**You MUST install wax foundation in each frame** (full sheet, half sheet, or at least 3" strip), otherwise the bees will build comb crosswise across several frames, making them impossible to remove/handle. I recommend using a full sheet of foundation in each frame for best results.

**Embed wires into foundation using an electric embedder sold at [HorizontalHive.com](http://HorizontalHive.com)**

As a DIY option, you can use a 12V to 24V DC current source, such as a tractor battery or an old laptop adapter (60W or more – but note that some adapters have overload protectors inside and may not work for this purpose).

- 1) Position the frame flat on the table with the frame's top facing you and its bottom raised 4" or so (e.g., put a mug under the frame's bottom bar).
- 2) Put a sheet of wax foundation on the wires so it touches the top bar.
- 3) Run 12 V to 24 V DC electric current through the wires (around 60W, that is 5 Amps at 12 V): for example, connect one pole of a tractor battery to one end of the frame-wire, and the other pole of the battery to the wire's other end. The electric current will heat the wire and embed it into wax. As soon as you see wires melting into the wax and "stitches" appearing on your side (wire half-through the wax), disconnect the power. Repeat on the remaining frames.

NOTE: If you want to run your hive as “foundationless”, you still MUST install at least a 3” strip of foundation in the top of the frame (or you can use 1/3 or 1/2 sheet per frame). If you use anything less than a full sheet of wax, make sure the hive is level left to right (or bees will build according to gravity and connect frames together). Again, I recommend that you use full sheets of foundation.

Premium-quality eco-pure Layens foundation from Europe is available at [HorizontalHive.com](http://HorizontalHive.com)

## 5. HIVE STAND

It is best to elevate the hive to the height that would be comfortable to work with. You can use:

- Concrete blocks (2 blocks high) – put slats of wood between the hive bottom and the blocks, otherwise water trapped between the concrete and the hive bottom will degrade the plywood. Position the slats correctly: the center of the hive’s weight-bearing frame inside the bottom is 2-1/4” in from the outer edge of the hive. You can see this line by looking at the staples that are driven through the bottom board. Your slats or stand should directly support that weight-bearing frame.
- Wooden stand – *Hive stand plans available at [HorizontalHive.com](http://HorizontalHive.com)*
- Metal stand, cross-braced (see color photos in *Keeping Bees with a Smile*) is a good option but you'd need to get a welder to make you one.
- Wood pallets make excellent hive stands in places with black bears. Use a sturdy ratchet strap to secure the hive in the middle of a heavy standard 40" x 48" pallet – this makes it impossible for the bear to open the hive or tip it over.

IMPORTANT: make sure the hive does not lean back (so rainwater doesn't run into entrances).

## 6. NO LANDING BOARD NECESSARY

Landing boards are not necessary with this hive model, but if you’d like to make them, you can attach small blocks of wood with the top surface slanted away from the hive to shed water.

## 7. ROOF OVERHANG

If your hive sits in full sun and you frequently experience temperatures over 85°F, a 4" roof overhang will shade the roof and the walls, helping prevent overheating and resulting comb sagging or comb collapses. The overhang also sheds rainwater away from the box, extending its life. The easiest way to add overhang: place two pieces of wood 1.5" x 1.5" x 26" along the right and left edges of the hive top, with the ends of these boards sticking out 3-4" in front and in the back of the hive. Cover with a piece of corrugated metal roofing (also called barn tin) 26" x 46" and weigh it down with several stones. We use barn tin over *all* our hive boxes that don’t have peaked roofs, and we highly recommend it. See more details and pictures at [HorizontalHive.com](http://HorizontalHive.com) under Plans > Peaked Roof. Also see more tips in the FAQ section. To add a peaked roof to your hive, see free plans at [HorizontalHive.com](http://HorizontalHive.com)

## 8. STONE ON TOP

If you experience strong winds in your area, put a rock on the hive cover so it doesn't blow off, or use a ratchet strap. You could also install hinges as an easy DIY project.

Special hinges are available at [HorizontalHive.com](http://HorizontalHive.com)

## 9. DIVIDER BOARD

You may sometimes need to use a divider board in your hive. A divider board (included) is simply a piece of plywood or hardboard 13-5/8" wide x 17" tall. Two layers of thick cardboard fully wrapped in shipping tape works great as well. Leave a 1/2" to 3/4" gap under it by putting a small stick under it or by screwing two drywall screws into the bottom edge of the divider board, to serve as legs (let the screws stick out by 1/2" to 3/4").

## 10. GAP AFTER THE LAST FRAME IS GOOD

The top bars of the frames touch. When the hive is full of frames, there's a small gap after the last frame or divider — this makes removing the last frame easier and aids ventilation; this gap is best left open. The bees will have access to the space above the top bars, which is OK, but if you want to exclude them, cover the gap with a wooden slat (not included).

## 11. ENTRANCES & USE A POLLEN COLLECTOR

Under normal operation, only one entrance is used (the others are in fully closed position). Please see *Keeping Bees With a Smile* on the use of multiple entrances in managing horizontal hives. Multiple entrances also allow you to house two or three small colonies in the same box. If your model comes with the 4th entrance (top central), open the upper entrance when three conditions are met: 1) strong colony; 2) hot weather; 3) abundant nectar flow. If bees beard outside the entrance, this is a sign that the top entrance should be opened. Note that it can also mean that the hive is getting overpopulated – see #16 "Before bees run out of room" below. **A second entrance can also be open in combination with a pollen collector from [HorizontalHive.com](http://HorizontalHive.com)** – a great way to harvest bee pollen – a valuable natural superfood.

## 12. PREVENT OVERHEATING

See detailed illustrated guide at [HorizontalHive.com](http://HorizontalHive.com) (in the FAQ section).

Even the insulated hive can overheat to the point that combs melt and collapse. Please read and follow the detailed advice at the above link. Basically:

- 1) Put your hive in partial or full shade.
- 2) Paint your hive in light colors.
- 3) Shade the roof (see #7 above if no natural shade).
- 4) Don't put the hive near large sinks of heat (e.g., over pavement) or in front of the south-, west-, and east-facing walls that will reflect heat onto them.
- 5) Open the top entrance.

## **MANAGEMENT SUGGESTIONS**

### **13. INSTALLING A COLONY**

When installing a new colony, place several frames against one wall, then a feeder (*available from [HorizontalHive.com](http://HorizontalHive.com)*), then a divider board to cut off the unused empty space, leaving 3/4" gap between the divider and the bottom. How many frames to start with depends on the strength of the swarm, on the ambient temperature, and on whether you have small hive beetles in your area. A very large swarm needs 6-7 frames, medium swarm (4 lb) – 4-5 frames, small swarm (2-3 lb) – 3 frames. You can give a bit more than that if a) you don't have small hive beetles where you live and b) the weather is reliably warm. We do not recommend package bees at all, but if you install package bees, give them 3-4 frames initially. If you purchased a "nuc" (starter colony) on conventional American (Langstroth) frames, convert them to the Layens size so they fit this hive – see FAQ on [HorizontalHive.com](http://HorizontalHive.com)

### **14. FEEDING A SWARM OR PACKAGE**

Complete feeding guide is available in the FAQ section of [HorizontalHive.com](http://HorizontalHive.com)

Feed your swarm IF unfavorable weather prevents bees from foraging; they will starve to death or will be severely weakened if you don't feed. Package bees *must* be fed.

OPTION 1: give them a frame of honey from your other hive or from your reserve.

OPTION 2: Otherwise feed using the Layens frame feeder and follow all precautions in *Keeping Bees in Horizontal Hives*, particularly: 1) give the feed in the evening to prevent robbing; 2) cover the feed with a layer of small wood chips or bits of twigs, to serve as floats and minimize bee drowning; 3) only give as much as bees can consume overnight (to prevent robbing) – about 1 cup (more for strong colonies), 4) reduce the entrance to 1/2" wide during feeding. Best feed is 1 part honey to 1 part water, as long as the honey is genuine and from a source that is free of foulbrood (that is, your own honey from healthy hives). Do not feed bees somebody else's honey or you can introduce foulbrood – instead, use 1 part organic sugar to 1 part water. See *Keeping Bees With a Smile* for details on feed preparation and feeding. Remove the feeder when done feeding, or bees will build comb from the feeder's bottom. Feeding is rarely needed for more than a week to 10 days maximum.

### **15. EXPANDING THE HIVE SPACE**

Check your new colony periodically (every 1-2 weeks). If they've built out the initial frames at least 2/3 down, time to add more frames.

### **16. BEFORE BEES RUN OUT OF ROOM...**

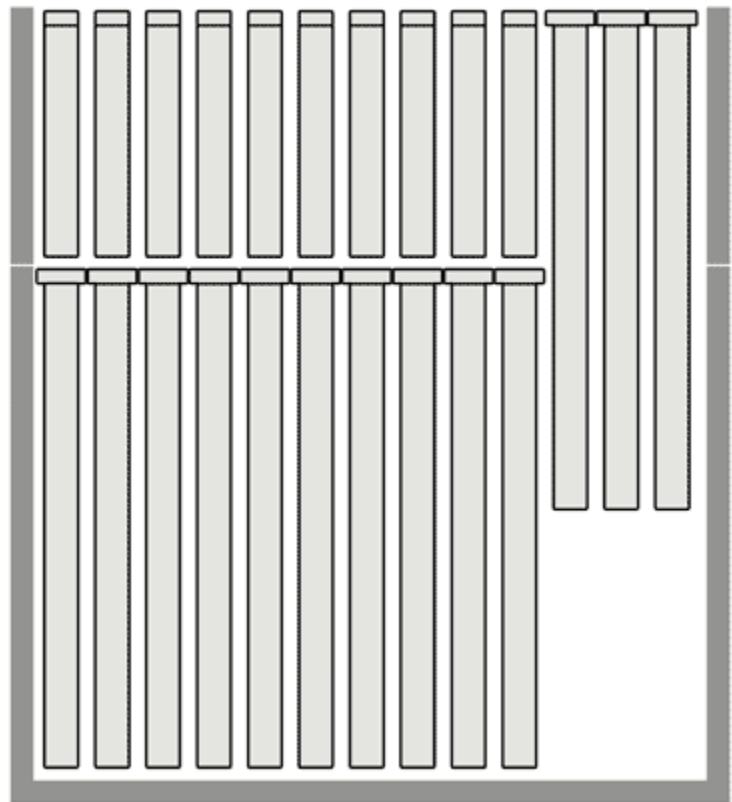
See the complete discussion of this topic in the FAQ section of [HorizontalHive.com](http://HorizontalHive.com)

Despite the relatively large volume of this hive, a strong overwintered colony may run out of room. If you do nothing, the bees will *swarm* (possibly more than once), meaning the loss of bees and smaller honey production. Also, as bees bring in a lot of nectar, the hive may

become *honey bound* (i.e. most cells are used for honey and the queen has nowhere to lay, weakening the colony). So for best results stay ahead of the bees and don't let them run out of room. You have several good options for that:

**a) Make artificial swarms** (splits) in a timely manner. **Best option, highly recommended.** Many excellent simple techniques are described in our books. In particular, see "artificial swarming with two hives" in *Keeping Bees in Horizontal Hives* (p. 185), which works really well. If the colony has at least 7 frames of brood early in the season and the weather is reliably warm, making an artificial swarm with one hive (*Keeping Bees in Horizontal Hives*, p. 258) is another good option. You may be able to repeat artificial swarming twice during the season and double or triple the number of your colonies. See more in the book *Raising Honeybee Queens*. Also see information on "even splits" in the Afterword to the 2020 edition of *Keeping Bees with a Smile*.

**b) Put a super** over your hive. When bees cover all frames but before they get congested (bearding outside the entrance or covering the inside of the lid), add a bottomless box (super) on top of your hive. The super should measure 13-11/16" inside, front to back, with 3/8" W x 7/16" deep rabbets to hold the frames. It is 8-3/16" deep and as wide as your hive box. Raise 3 last frames, containing no brood, into the super (they will be hanging half-way down into the hive body), fill the rest with Layens half-frames 7-13/16" deep - available at [HorizontalHive.com](http://HorizontalHive.com). Since this option requires additional equipment, making timely splits as described above may be your preferred method.



**c) When the hive is really full, harvest honey frames**, extract, then return extracted frames to the bees to refill. This option is not as good as making a timely split. When you pull honey in mid-season, you'll have to regularly take frames from very active hives boiling over with bees, and many honey cells may not be capped yet. Also this option may not be enough to prevent swarming or the nest becoming honey bound.

## 17. WINTERING

See detailed Wintering Guide at [HorizontalHive.com](http://HorizontalHive.com) (in the FAQ section).

**EXCLUDE MICE** – in the fall when bees are still active (before the first hard freeze), turn the active-entrance disc to mouse guard setting (six 3/8" holes). Do not use the queen excluder



setting (four bars) as mouse guard – bees must be able to freely go in and out at all times! Rotate back to open position when bees start actively flying in the spring.

The best wintering setup is shown in Layens's book, Chapter 24. Basically, for a strong colony, at harvest time leave up to 7 frames at least 1/2 full of honey, plus (in cold climates with springs that can be cool or rainy) two full frames of honey, one on each end of the nest. (Fewer frames are required for smaller colonies or in southern climates with short winters.) Then insert the divider with the 3/4" gap underneath. Finally, cover the top of the frames with a wool pillow. A pillowcase filled with natural wool is best and has far better insulation value than other materials such as wood shavings. Leave at least 1/2" air space around and above the pillow to aid ventilation. Raw wool and pillows are available from [HorizontalHive.com](http://HorizontalHive.com)

Additional winterizing tips for climates with very cold winters:

- Position the wintering cluster in the middle of the hive, with divider boards on both sides. The empty chambers will provide additional insulation. In extreme climates, place a pillow after each divider board (don't let the pillow block the gap under the divider).
- Make sure only the bottom entrance is open.
- Provide a good windbreak to minimize wind chill.

## 18. DRILLING ADDITIONAL ENTRANCES

Adding 4th top entrance to 3-entrance models: If you need to make an additional entrance for ventilation (only relevant for very hot climates with 90°F weather), drill a 1" to 1-1/2" hole in the center of the front wall 3" on-center from the top edge. There's a stud there behind the plywood, so you won't hit the wool insulation. (A hole saw 1-1/2" diameter and at least 2" long offers a very clean cut with little tear out. Drill at a slight incline so the hole sheds rainwater. Paint the newly drilled entrance.) If you need to drill additional entrances or vents elsewhere, drill the plywood on the outside and in a corresponding spot on the inside, spread the wool with your finger, and insert a PVC pipe of the right diameter to exclude any bee and pest access to the insulation. Glue the PVC pipe in and trim flush with the wall on the outside and on the inside using an oscillating saw or, barring that, a metal saw blade held in a gloved hand.

## READ LAYENS AND LAZUTIN BOOKS

*Keeping Bees in Horizontal Hives* by Georges de Layens and *Keeping Bees With a Smile* by Fedor Lazutin are essential for successfully managing this hive. Both are exceptional resources on natural beekeeping and are available from [HorizontalHive.com](http://HorizontalHive.com)

## NATURAL BEEKEEPING SEMINARS AT DR LEO'S BEE FARM

To see these hives in action and to learn all nuances of their use, consider attending one of the Natural Beekeeping workshops at our apiary in Missouri. You'll have all your questions answered, saving you years of trial and error. Seminar schedule is available at [HorizontalHive.com](http://HorizontalHive.com) Hope to see you there, or at one of Dr Leo's other talks around the country.

We love these insulated Layens hives are I hope you will, too!

Thank you and with best wishes – *Dr Leo Sharashkin, Beekeeper and Editor*