

A FREE STUDIO GUIDE FROM RHETT PARHAM

Slab Construction

Roll it flat. Cut it clean. Build it up. A practical, start-to-finish guide to building with clay slabs, with printable templates.

INSIDE

- Tools & slab thickness
- Eight steps, start to finish
- Joints that hold & drying stages
- Four projects, four levels
- Troubleshooting
- Printable 100%-scale templates

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BEFORE YOU START

What slab building is

Slab construction means rolling clay into flat, even sheets, then cutting, joining, folding or draping those sheets into a three-dimensional form. A simple tray and a sculptural wall piece start the same way. Every slab project comes down to two decisions: how you make your slab, and how you join the pieces.

Soft slab

Freshly rolled and still bendy.

Best for: Curves, draping over molds, folds, cylinders, soft organic edges.

Hard (leather-hard) slab

Left to firm up until it holds its shape like heavy card.

Best for: Straight walls, crisp corners, boxes, architectural forms.

What you need

- **Clay —** any stoneware or earthenware body. About 3 lb (1.4 kg) makes a 6-inch tray.
- **Rolling pin + two guide sticks —** matching wood slats, 1/4 in (6 mm) thick, set either side of the clay so the slab rolls perfectly even.
- **Canvas or cotton cloth —** to roll on so the clay doesn't stick.
- **Needle tool or craft knife —** for clean cuts.
- **Serrated rib or fork —** for scoring joins.
- **Slip —** clay mixed with water to a yogurt-thick paste. Make it from your own clay.
- **Rubber rib + damp sponge —** to compress and smooth.
- **Cardstock, ruler, scissors —** for templates (or use the ones at the back of this guide).
- **Plastic bags or sheeting —** to slow drying between sessions.

How thick?

Small pieces (coasters, ornaments, small dishes)	**3/16 in · 5 mm**
Most projects (trays, boxes, cylinders)	**1/4 in · 6 mm**
Large platters, tall walls, wall pieces	**3/8 in · 9–10 mm**

Keep every piece of one project the same thickness and roll them all in the same session, so they hold the same moisture and shrink together.

THE PROCESS

Eight steps, start to finish

1. **Wedge your clay.**
   Knead it on a canvas surface for a minute or two to push out air pockets and even out the moisture. Trapped air can burst in the kiln.

2. **Make templates first.**
   Draw every piece on cardstock and cut it out. Measure twice, cut clay once. Templates are how matching walls actually match.

3. **Roll the slab.**
   Set the guide sticks either side of the clay. Roll from the center outward, lift and flip the slab between passes, and turn it 90° each time so it doesn't stretch in one direction.

4. **Compress both sides.**
   Drag a rubber rib firmly across the slab, then flip and repeat. This aligns the clay particles and is the single best defense against warping and cracks.

5. **Cut your pieces.**
   Lay templates on the slab and cut straight down with a needle tool held upright. For box walls, let the pieces stiffen to leather-hard before building.

6. **Score, slip, join.**
   Rough up both surfaces that will touch, brush on slip, press them together and wiggle slightly until the slip squeezes out. Every seam, every time.

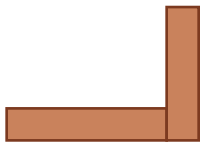
7. **Reinforce and clean up.**
   Press a thin coil of clay into each inside seam and blend it in. Smooth outside seams with a rib or sponge. Add texture, carving or handles now, while the clay is still leather-hard.

8. **Dry slowly.**
   Cover loosely with plastic for the first few days. Uncover gradually. Even, slow drying prevents most cracks. Fire only when the piece is bone dry and no longer cool to the touch.

JOINTS & DRYING

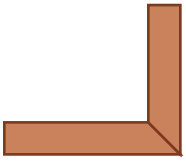
Joints that hold

Most slab pieces that fail, fail at a seam. A strong join needs three things: matching moisture, a scored surface and slip.



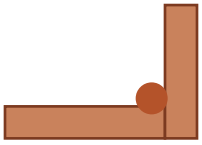
Butt joint

One wall sits against the face of the other. Simplest; reinforce inside with a coil.



Miter joint

Both edges cut at 45°. Clean corner, no end grain showing. Harder to cut accurately.



Coil reinforcement

A thin coil pressed into the inside seam and blended. Use it on every join.

Score & slip, the details

- **Score deep enough to see —** a crosshatch about 1/16 in (1–2 mm) deep on both surfaces.
- **Slip both sides, not one.** Thick slip, not water. Water alone makes a weak, slick joint.
- **Press and wiggle.** A little sideways movement locks the scored surfaces together.
- **Join at the same dryness.** A wet piece attached to a dry one will shrink away from it as it dries.

The stages of drying

STAGE	HOW IT FEELS	USE IT FOR
Soft / plastic	Bends freely, takes fingerprints.	Draping, folding, texture, cylinders.
Soft leather-hard	Holds its shape but still flexes slightly.	Joining, handles, attachments.
Leather-hard	Firm and cool, like a stiff wallet. Can be carved.	Box walls, carving, trimming, burnishing.
Bone dry	Pale, room-temperature, very fragile.	Ready to fire. No more joining.

PICK YOUR PROJECT

Four projects, four levels

Pick the level that matches your comfort with clay right now. A well-finished Level 1 beats a half-finished Level 4. When you finish one, try the next level up.

LEVEL 1 · FOUNDATIONAL

Slab tray or dish

Straight cuts, one flat base, low walls. The best first project for clean slab prep and your first score-and-slip joins. Template on page 7.

- Base at least 6 × 6 in, or a 6 in circle
- Wall strips scored and slipped to the base
- Optional: press lace, leaves or found objects into the base before cutting

LEVEL 2 · INTERMEDIATE

Draped bowl or slab cylinder

Soft-slab draping over a hump mold (an upturned bowl, a ball or a rolled towel), or a soft slab rolled into a cylinder vase or candle lantern.

- Drape a textured soft slab and trim the rim as it firms
- Cylinder: bevel both ends and overlap for a long seam
- Try sgraffito: carve through a layer of colored slip

LEVEL 3 · ADVANCED

Lidded box

Hard-slab construction with angled joins that all have to line up, plus a lid that fits. Templates on pages 8–9.

- Cut the full template set before you start
- Build at leather-hard so walls hold their angles
- A flange under the lid keeps it seated

LEVEL 4 · INDEPENDENT

Your own design

A sculptural form, architectural piece, wall relief or multi-part vessel, from your own template.

- Sketch it and note rough dimensions first
- Combine at least two techniques (draping + hard slab, texture + inlay)
- Plan internal supports so bigger forms don't slump while drying

WHEN THINGS GO WRONG

Troubleshooting

Seam cracked open while drying

Why: The pieces were at different dryness, or the join wasn't scored and slipped.
Fix: Join at matching moisture. Score both sides, slip both sides, add an inside coil. Small cracks at leather-hard: score, fill with soft clay, compress.

Base cracked in an S or line

Why: Uneven drying, or the slab wasn't compressed.
Fix: Compress both sides with a rib before cutting. Dry under loose plastic, and flip the piece onto a board once it's firm so the base dries evenly.

Walls slumped or leaned

Why: Clay too soft when built, or walls too tall for their thickness.
Fix: Let slabs stiffen to leather-hard first. Support curves with crumpled paper while they firm up. Go thicker on taller walls.

Slab warped or curled

Why: Stretched in one direction while rolling, or picked up by the edges.
Fix: Turn the slab 90° between passes. Move slabs by sliding a board or paper under them, never by lifting an edge.

Rim or edges cracked

Why: Edges dry fastest, so they shrink before the middle.
Fix: Wrap the rim in a strip of plastic for the first day or two. Compress and round edges with a damp sponge.

Lid won't fit after firing

Why: Lid and box dried or fired separately and shrank differently.
Fix: Dry the lid on the box. Make both from the same slab. Fire them together, with a little kiln wash or wadding between if glazed.

Piece blew up in the kiln

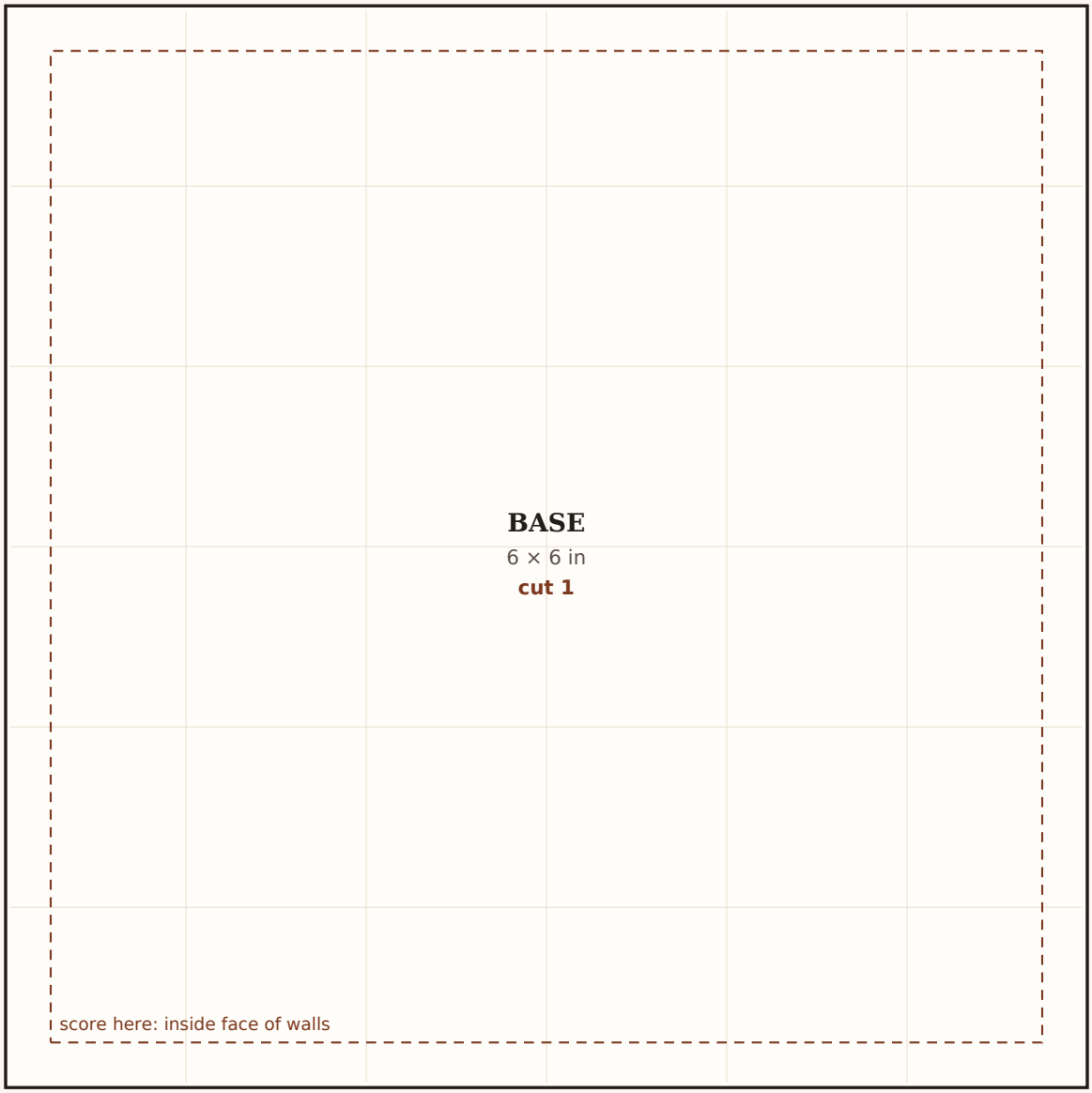
Why: Trapped air, or the piece wasn't fully dry.
Fix: Wedge well. Pierce enclosed forms with a small vent hole. Fire only bone-dry work and heat slowly at first.

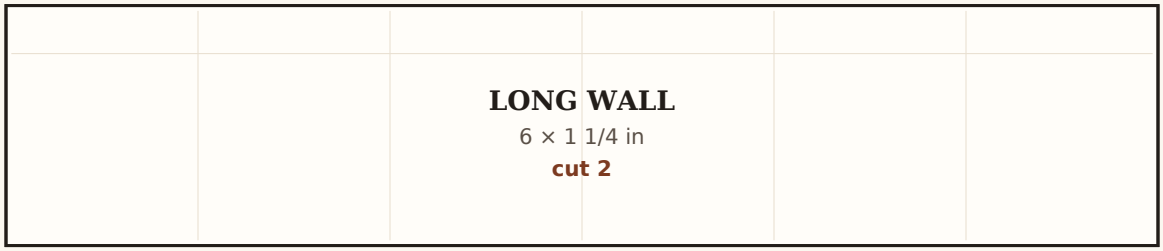
TEMPLATE · LEVEL 1

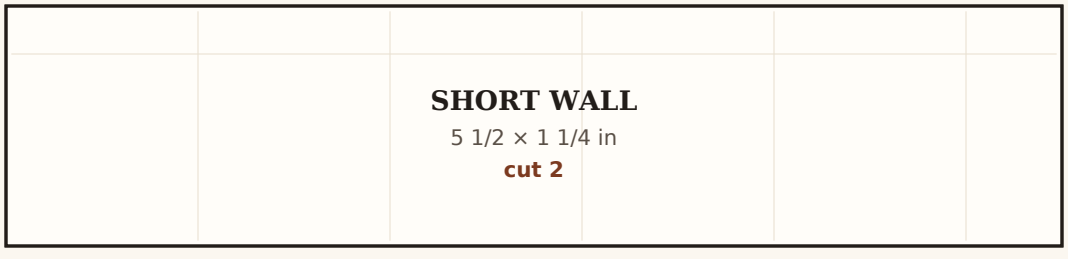
6-inch slab tray

Base plus four walls, 1 1/4 in tall. Butt-jointed walls sit on top of the base.

1 inch check square
print at 100%







The two short walls fit between the long walls, so they're 1/2 in shorter (two wall thicknesses). If your slab isn't exactly 1/4 in, adjust the short walls to fit.

cut line

score line

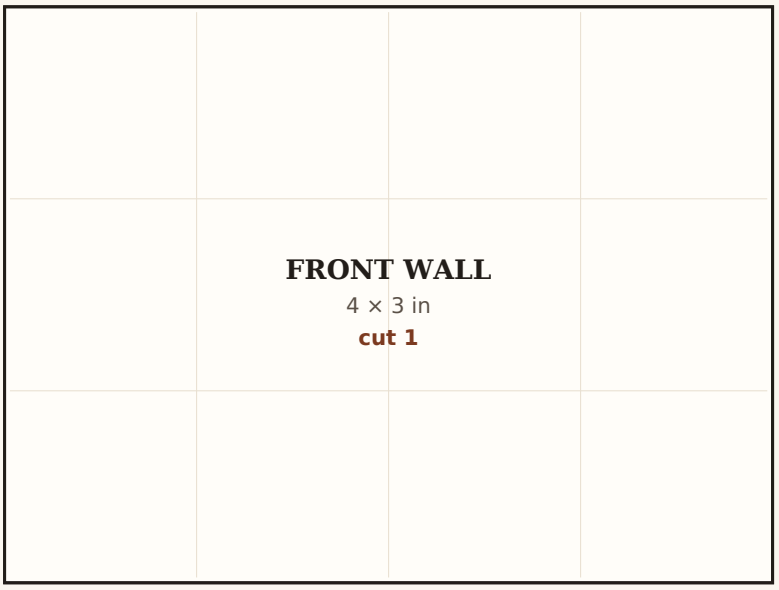
Light grid = 1 inch. Trace onto cardstock, cut out, lay on a 1/4 in slab and cut around it.

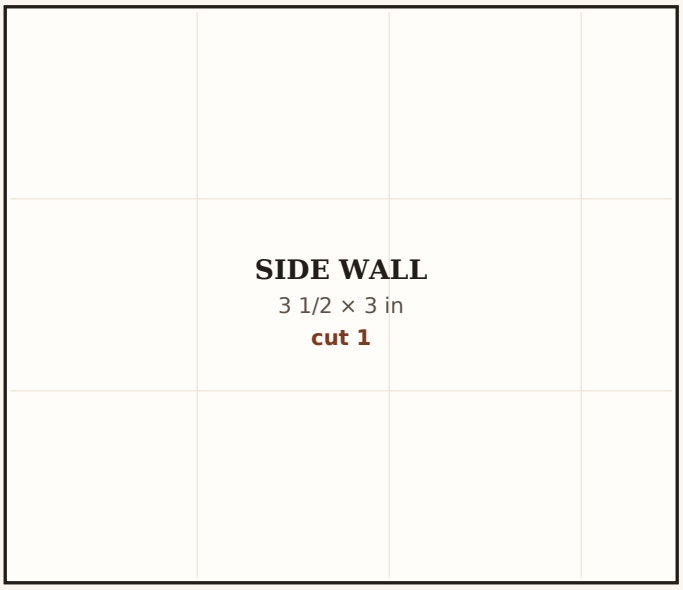
TEMPLATE · LEVEL 3 · SHEET 1 OF 2

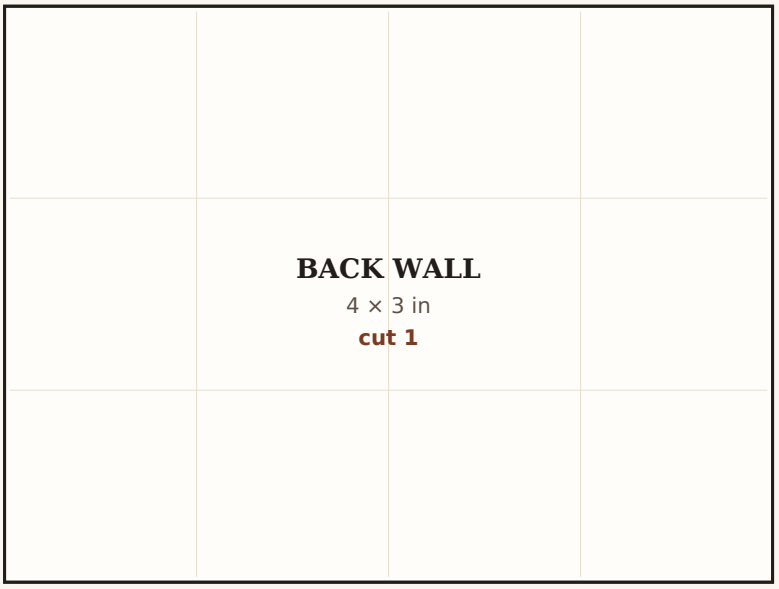
4-inch lidded box: walls

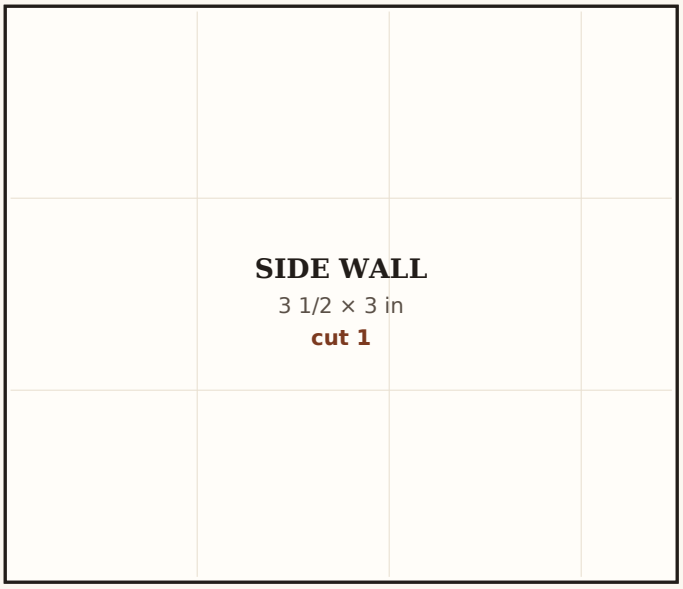
Four walls, 3 in tall. Build at leather-hard. Long walls overlap the short walls at the corners.

1 inch check square
print at 100%









Side walls are 1/2 in shorter than front and back because they fit between them (two 1/4 in wall thicknesses). Score and slip every vertical edge, then the bottom edges where they meet the base. Reinforce every inside seam with a thin coil.

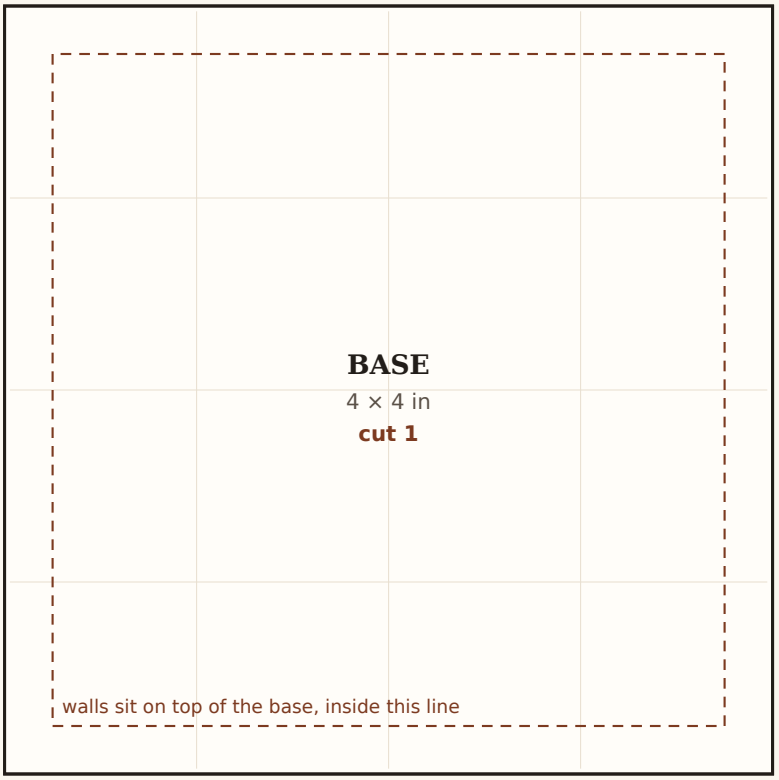
——— cut line - - - - score / placement line Light grid = 1 inch. Trace onto cardstock, cut out, lay on a 1/4 in slab and cut around it.

TEMPLATE · LEVEL 3 · SHEET 2 OF 2

4-inch lidded box: base, lid, flange

Cut from the same slab as the walls. Dry the lid sitting on the box.

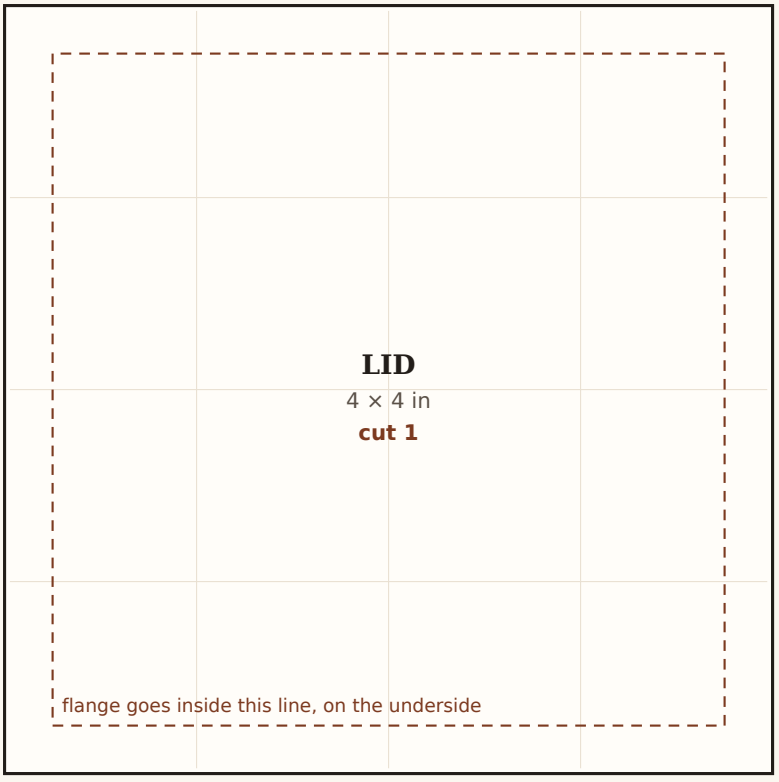
1 inch check square
print at 100%



FLANGE
3 3/8 × 5/8 in
cut 2

FLANGE
2 7/8 × 5/8 in
cut 2

KNOB
optional



The flange is a short inner rim on the underside of the lid. It drops just inside the box walls and keeps the lid from sliding. Attach the four strips about 1/16 in inside the dashed line so the lid still seats after shrinkage. The knob can be any shape: a pinched form, a coil loop or a small stamped slab.

cut line score / placement line Light grid = 1 inch. Trace onto cardstock, cut out, lay on a 1/4 in slab and cut around it.

STUDIO HABITS

Safety, firing & next steps

Keep your studio clean and safe

- **Clean wet, never dry.** Wipe surfaces and mop floors with water. Dry sweeping lifts fine clay dust, which contains silica you don't want to breathe.
- **Reclaim your scraps.** Keep trimmings in a lidded bucket with water. They become usable clay again.
- **Keep clay out of drains.** Rinse tools in a bucket first and let the sediment settle; it clogs plumbing.
- **Cover unfinished work.** Wrap pieces in plastic between sessions so they don't dry unevenly and crack.
- **Wash your hands** after working, especially before eating.

Getting your work fired

Slab pieces need two firings: a bisque firing to harden the clay, then a glaze firing. If you don't have a kiln, community ceramics studios, college art departments and clay supply shops often fire work for a small fee. Ask what temperature (cone) they fire to and buy a clay body that matches it.

- **Bone dry only.** If a piece still feels cool against your cheek, it's still holding water.
- **Vent enclosed forms.** Any sealed hollow space needs a small pin hole so expanding air can escape.
- **Expect shrinkage.** Most clays shrink around 10–13% from wet to fired. A 6-inch tray comes out a bit over 5 inches.

FROM THE STUDIO

Clay from this earth. Fire that decides.

Every piece I make starts as a slab or a coil on a lava lot in Ocean View, on the southern flank of Mauna Loa. Build something, then build the next one a level harder. See the work and more guides at rhettparham.com.