YOUR FREE READER'S COMPANION

The Backyard Fire Pit Build Pack

A companion to The Backyard Fire Pit & Outdoor Fireplace Building Bible · by Cal Brandt

Thanks for picking up the book. This is the companion you keep on your phone at the stone yard and tack to the inside of the garage door once the pit's lit: the fire-feature chooser that matches what you want to what you can actually build, a clearance-and-safety table you check before you ever swing a shovel, the base-and-drainage recipe that decides whether your pit survives its first winter, a material takeoff for one starter pit so you buy it once, and a printable build-and-safety checklist. Print it, fold it, keep it in the truck. Two things run through all of it, and they're the same two things I say at the end of every chapter in the book.

Fire pits and outdoor fireplaces almost never fail from the flame. They failed from the ground up — set on bare topsoil, with water trapped underneath that froze and heaved them out of round by spring. Get the base right, give the fire room to breathe, and the rest is just stacking stone. — Cal

1. The Fire-Feature Chooser

There are four ways to put fire in your backyard, and they sit on a ladder from a one-Saturday build to a multi-weekend masonry project. Match it to your skill, your budget, and how permanent you want it before you buy a single block. Every one of these sits on a compacted, free-draining gravel base, and every one of them needs real clearance to anything that burns — those two details matter more than which type you pick.

Fire feature	Skill / time	Cost (2026)	Pick it when	Think twice when
Paver / block ring (trapezoidal wall block + steel insert)	Beginner, one day	~$300-500	Your first build; you want movable, no mortar, no curing	You want a built-in look or to burn hot against bare block
Mortared brick or stone pit (firebrick liner, refractory mortar, veneer)	Intermediate, 1-2 weekends	~$700-1,200	You want a permanent built-in that lasts decades	You've never laid mortar; build the ring first
Gas fire pit (burner, pan, media, plumbed line)	Build it; license the gas	varies + permit	You want clean, ember-free, on-demand fire near seating	You can't run gas legally yourself — most places require a licensed fitter
Outdoor fireplace (firebox, throat, smoke chamber, flue, chimney)	Advanced, multi-weekend	~$2,500-5,000	You want a vertical hearth that throws heat one direction and draws like an indoor fireplace	You're not solid on firebox and flue geometry — bad throat geometry smokes in your face

Read your situation first

- Wood or gas decides a lot. Wood is cheaper to build and needs open sky above; gas costs more and triggers a permit and a licensed gas fitter in most places, but runs cooler and throws no embers.
- A block ring is not a furnace. Standard retaining-wall block and pavers are not rated for direct, sustained fire. That's exactly why the ring build drops a steel fire ring insert inside — without it you spall and crack the inner faces.
- A fireplace is a different animal. It only draws clean if the throat, smoke chamber, and flue are sized and shaped right. If you're new, build a mortared pit first and come back to the fireplace.
- Call 811 before you dig, every time, even for a shallow ring. It's free and it's the law in every US state. A fire-pit footing is only 7 to 12 in (178 to 305 mm) deep, but gas and fiber can run shallower.

The honest trade-off: the ring saves you money and time and you can move it; the mortared pit and the fireplace cost you both but buy permanence and a built-in look. Gas buys convenience and clean air at the price of a permit. Match it to your hands, your wallet, and how long you want it to stand.

2. Clearance & Safety Quick Table

This is the table that keeps you out of trouble. A fire pit is only as safe as the air around it, and the one people fudge and regret is distance — to the house, to what hangs overhead, and to the dry grass at the edge. These are conservative, livable numbers. Where your local code or HOA is stricter, the local number wins, always. Confirm before you dig.

From the fire feature to...	Wood-burning	Gas (open)	Notes
House wall / siding	15-25 ft (4.6-7.6 m); 10 ft (3 m) min	10 ft (3 m) typical; per listing	Radiant heat warps vinyl from feet away
Deck, fence, shed (combustible)	15-25 ft (4.6-7.6 m); 10 ft (3 m) min	10 ft (3 m)	Wood deck under an open wood fire is a no in most codes
Property line	10 ft (3 m) min, often more	10 ft (3 m) min	HOA may exceed this
Overhanging branches / canopy	21 ft (6.4 m) clear to sky	10 ft (3 m) clear above	Open wood fire belongs under open sky
Eaves, soffits, pergola, awning	Not overhead at all	Per listing only	Radiant heat dries and ignites whatever hangs above
Low shrubs / dry grass	10 ft (3 m) ember zone	5-10 ft (1.5-3 m)	Clear a non-combustible apron
Gas meter / utility	36 in (915 mm) min	36 in (915 mm) min	Mark all buried lines via 811 first

Four calls before you build

- [ ] Building / fire department — does a permanent fire feature or open recreational fire need a permit, and what's the max size and clearance. Many towns cap open pits near 3 ft (914 mm) diameter.
- [ ] HOA, if you have one — many restrict open flame, dictate setbacks, ban wood in favor of gas, or require written approval. Get it in writing first.
- [ ] Gas permit — any plumbed gas line almost always needs a permit, a licensed fitter, and an inspection. Never tie into gas on a whim.
- [ ] Burn bans / red-flag days — never light on a high-wind or drought warning, ban or no ban.

The non-combustible apron

Build a non-combustible apron of pavers, flagstone, or compacted gravel out 3 to 5 ft (0.9 to 1.5 m) from the pit wall. It catches stray embers before they hit grass, gives chairs stable footing so nobody tips back into the fire, and keeps a muddy ring from wearing around your work. On a wood pit, that apron is part of the safety system, not just looks.

Keep a hose or an extinguisher within reach of the pit, always, and a spark screen on a wood fire. Stand at your marked-out center before you dig and look around like a fire marshal: anything in the ember zone that burns, clear sky straight up, far enough from the house that a bad-night gust won't matter. If

any answer makes you uneasy, move the pit. Block is heavy, but moving it on paper costs nothing.

3. The Base & Drainage Build

This is the chapter that earns the whole book. Three forces try to wreck a pit from below — settling, water, and frost heave — and a compacted, free-draining gravel base beats all three. It won't compress, and it lets water drain down and away instead of sitting and freezing under your masonry. I've torn down beautiful stonework that was set straight on topsoil and heaved 2 in (51 mm) out of round in one winter. The half of the job you can't see decides whether the half you can see survives.

Excavate: dig out the bad stuff

- Strip all the soft, organic topsoil down to firm subsoil — it holds water, rots, and compresses unevenly. If you hit soft muck, dig deeper and add more gravel; never build on muck.
- Dig 7 to 12 in (178 to 305 mm) below finished grade. In hard-freeze country (the Dakotas, Minnesota, northern Iowa) go to the deeper end, 10 to 12 in (254 to 305 mm).
- Dig 6 in (152 mm) wider than the wall all the way around. That overdig keeps every block fully on gravel, not half on gravel and half on soft soil.

Buy the right rock and compact in lifts

- Use angular 3/4-inch minus (a.k.a. "3/4 minus," "crusher run," "Class 5," "paver base") — crushed stone with fines that locks rock-hard when compacted. Never round pea gravel or river rock as the structural base; it just rolls and the pit shifts.
- Add it in 2 to 4-inch (51 to 102 mm) lifts. Lightly mist each lift — slightly moist gravel compacts far better than bone-dry — then compact it fully before adding the next. Don't dump the whole base in and tamp the top; the bottom stays a sponge.
- A rental plate compactor ($70-110/day in 2026) is the right tool. A hand tamp works for a small pit if you keep lifts to 2 in (51 mm) max. Build up to 6 to 8 in (152 to 203 mm) of compacted base.
- You'll know it's right when you can walk across it leaving no footprints and a heel-stomp doesn't dent it.

Drainage: don't let water sit

- Drain the base downward. Under the fire bowl, add a few inches of loose pea gravel or leave the center open to bare, well-draining subsoil so rain that falls in soaks away instead of standing. A pit full of standing water cracks faster from thermal shock.
- Drain the surroundings away. Set the finished pit so the grade falls away on every side — even a slight 1/4-inch-per-foot (2%) slope. Never let the pit sit in a bowl that collects the yard's runoff.
- In clay or wet soil, lay non-woven geotextile fabric in the bottom of the hole first (about $0.50-1.00 per sq ft in 2026). It keeps clay from pumping up into your base.
- For a gas pit, add a weep hole or drain in the burner pan so rain can't fill the enclosure.

Level it dead true

After the final compacted lift, check across the base with a 4-foot level on a straight board, rotating it like a

clock hand around the circle. Scrape highs, patch and re-tamp lows. A pit even 1/2 in (13 mm) out of level looks wrong and sets every course leaning. Spend real time here — every course you stack inherits the level, or the error, of this surface.

4. Material Takeoff — One Starter Pit

Use this to turn a plan into a stone-yard list. These numbers are the 36-inch (914 mm) inside-diameter paver ring with a steel insert — the weekend build to do first. No mortar, no cutting if you buy trapezoidal block made for fire pits. Adjust for your footprint, and round up on consumables, because running short of gravel or one block on a Sunday with the truck unloaded is its own special misery.

Item	Qty	2026 unit cost	Line total	Use
Trapezoidal fire-pit wall block (kit, 36 in, 3 courses)	36-45 blocks	kit ~$180-260	$220	The ring
Steel fire ring insert, 36 in, heavy-gauge	1	$70	$70	Shields block from flame
Paver base gravel (3/4-in minus)	8 bags	$5	$40	Compacted base
Paver / leveling sand	3 bags	$6	$18	Setting the first course
Masonry construction adhesive (caulk tube)	2 tubes	$7	$14	Bonds courses 2 and up
Landscape fabric (optional, under base)	1 roll	$20	$20	Clay / wet soil
Total			~$382	

Most kits bundle the block, so real spend lands in the $300-500 window depending on block finish. Tools you'll want: tape measure, string and stake, spade and tamper (or plate-compactor rental), 4-ft level, torpedo level, rubber mallet, caulk gun, gloves.

Three takeoff rules that save real money

1. Pay for the steel insert. A heavy 30-36 in (762-914 mm) insert is the single best dollar in this build. Cheap thin rings warp into a taco in a season or two. Size it so there's about a 1 in (25 mm) air gap to the block all around — that gap lets the steel expand without pushing your joints apart. Set it on the base and let it float.

2. Buy trapezoidal block, not rectangular pavers. The wedge shape closes a circle with no cutting. Rectangular units mean trimming every block to a taper on a wet saw — a whole different afternoon, and a mess of silica dust. Skip it.

3. Round gravel up, not down. You'll lose volume to compaction, and running short mid-base means a second trip and a half-compacted bed. A few dollars of spare crushed stone is cheap insurance.

5. Printable Build & Safety Checklist

Work this list top to bottom. Don't order a block until the top section is done.

Before you design

- [ ] Picked the right feature for your skill and budget (ring / mortared pit / gas / fireplace).
- [ ] Made the four calls: building/fire dept, HOA, gas permit (if plumbed), burn-ban status.
- [ ] Wrote down the answers with the date and the name of who you talked to — that note is your record.
- [ ] Confirmed clearances: 10 ft (3 m) minimum to any structure, deck, fence, and property line; 21 ft (6.4 m) clear sky above a wood fire; nothing overhead at all.

Before you dig

- [ ] Called 811 and waited for the marks. Hand-dig near any paint or flag.
- [ ] Picked high, dry ground that drains, not the low corner where rain pools.
- [ ] Marked the footprint with string and stake, plus the 6 in (152 mm) overdig all around.
- [ ] Planned the non-combustible apron, 3-5 ft (0.9-1.5 m) of pavers or gravel.

Building the base

- [ ] Stripped topsoil down to firm subsoil; dug 7-12 in (178-305 mm) deep (deeper in freeze country).
- [ ] Laid geotextile fabric if the soil is clay or wet.
- [ ] Used angular 3/4-in minus, not round pea gravel.
- [ ] Compacted in 2-4 in (51-102 mm) lifts, lightly misted, each lift tamped before the next.
- [ ] Built to 6-8 in (152-203 mm) compacted base; topped with ~1 in (25 mm) leveling sand if setting block.
- [ ] Leveled dead true with a 4-ft level on a board, all the way around, before a single block.
- [ ] Set the grade to fall away from the pit on every side (1/4 in per foot / 2%).

Stacking the pit

- [ ] Spent patience on the first course — every course above copies it; off by 1/4 in (6 mm) shows as a tilted cap three courses up.
- [ ] Staggered the joints course to course, running bond, so the ring acts as one piece.
- [ ] Glued courses 2 and up with masonry-rated construction adhesive (dry-stack the first so you can level it).
- [ ] Dropped in the steel insert with a ~1 in (25 mm) air gap, sitting on the base and floating free.
- [ ] Set caps with a ~1 in (25 mm) outer overhang for a shadow line and to shed water off the joints.

Before and after the first fire

- [ ] Gave glued courses a full day to set (longer in cold or damp).

- [ ] Hose or extinguisher within reach; spark screen on for a wood fire.
- [ ] Kept the first fire modest — let the steel and block come up to temperature gradually, no inferno on night one.
- [ ] Never lit on a red-flag or burn-ban day.

Seasonal care

- [ ] Swept out ash after use (wet ash holds moisture and stays acidic against the steel).
- [ ] Pulled the insert yearly, knocked off scale, re-coated with 1,200 degF paint if rusting.
- [ ] Checked cap stones each spring for any worked loose over the freeze-thaw winter; re-glued.

That's the pack. The one habit worth more than any tool in the truck: get the base right, on compacted gravel that drains and below the worst of the frost, before you set a single block — and give the fire real room to breathe, around it and above it, so it draws clean and stays well clear of anything that burns. Build the easy paver ring first to learn the moves, then step up to a mortared stone pit or a full outdoor fireplace when you're ready — all three are drawn up complete with material lists in the back of the book. When you've lit your first fire in a pit you built on your own pad, I'd love to hear about it, and in a couple of emails I'll tell you how a quick word from you helps this book reach the next person standing in their backyard with a pile of block and an idea.

Build the base right. Give the fire room to breathe,

Cal Brandt