

Repoint It Right

by Travis Nech

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Repoint It Right

The Field-Proven Method for Repointing Brick That Lasts — and Looks Original

How a Texas Mason Rebuilds Mortar Joints That Survive the Weather and Match the Wall

Travis Nech

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Chapter 1 — Why Mortar Joints Fail

Every brick wall you have ever admired is held together by something most people never think about. The brick gets the glory. The brick is the face, the color, the pattern, the thing the sun hits at five in the evening and makes the whole house look like it is worth the money. But the mortar is the workhorse. The mortar is what actually holds the wall together, what keeps the water out, what flexes when the ground moves and the Texas heat swells the wall and the cold snaps shrink it back down. Brick is the beauty. Mortar is the backbone.

And mortar fails. Not because it is weak, and not because somebody did something wrong on day one — although that happens too — but because mortar is a sacrificial material by design. That is a sentence worth sitting with: mortar is supposed to be the part of the wall that gives up first. A brick wall is a system of hard units and softer joints, and the joints are the flexible part, the part that moves, breathes, absorbs the punishment, and eventually wears down. A brick can last two hundred years without flinching. Mortar is not supposed to outlive the brick. It is supposed to protect the brick by being the weaker link.

So when you see a chimney with crumbling joints, or a 1960s ranch with mortar that turns to sand under your thumbnail, you are not looking at a defective product. You are looking at a product that did its job for thirty, forty, fifty years and is now asking to be replaced. The failure is the message. The wall is telling you it is time.

The number one killer of mortar in Texas is water, and it is not close. Water gets into the joint through the tiniest crack, the hairline you cannot see without getting your nose six inches from the wall. It sits in there. Then a cold snap comes — and yes, Texas gets cold snaps that will humble a Yankee, do not let anyone tell you different — and that water freezes. Ice expands. It pushes the joint apart from the inside. Then it thaws, the water runs a little deeper into the crack it just made, and the next freeze pushes a little further. Freeze, thaw, freeze, thaw. This is the slow-motion demolition of every mortar joint that was ever laid, and it is why the north side of a house and the top of a chimney go first: they stay cold longer, stay wet longer, and give the ice more nights to work.

Down here in Texas we get a second killer that the Northerners do not talk about as much: the drought cycle.

Our clay soils swell when they are wet and shrink when they are dry, and a brick wall sitting on a foundation that is heaving and settling is getting pulled and pushed in ways the mortar has to absorb. The joint flexes. Good mortar flexes a little and comes back. Old, tired mortar flexes and cracks, and that crack becomes a doorway for the next rain. The wall does not fail all at once. It fails one joint at a time, one hairline at a time, one freeze at a time.

Then there is age, which is the honest killer and the one I respect the most. Lime-based mortars — the soft, breathable stuff they used before World War II — carbonates over decades. Portland cement mortars hydrate and densify and then slowly, slowly deteriorate at the surface from weather and pollution and time. Fifty years is a full career for a mortar joint that was laid right and has lived a decent life. Some go sixty, seventy. Almost none go a hundred without help. If your house was built in the seventies and you have never touched the joints, you are not behind schedule — you are right on time. The wall is raising its hand.

Picture this: say a homeowner in Fort Worth calls me out because her chimney looks like it is shedding. She points up at the top eight feet of the stack, and sure enough, the mortar up there is gone — recessed an inch, crumbling, with little piles of sand on the roof below like the chimney is slowly melting. But the brick on the house walls, same age, looks fine. She wants to know why one part failed and the other did not. The answer is exposure. That chimney is the tallest, coldest, wettest part of the house. It takes the rain straight down, it freezes first, the flue gases heat and cool it in cycles the wall never sees, and nobody ever looks at it because nobody goes up on the roof. The chimney is the canary in the coal mine. It always dies first. When the chimney goes, it is the wall's way of telling you the rest of the house is a few years behind.

There are also the failures that are not the mortar's fault at all — the ones caused by somebody laying it wrong the first time, or by the wrong mortar being used in the wrong place. Mortar mixed too dry never fully hydrates; it looks fine for a year and then starts turning to powder because the cement never got the water it needed to cure. Mortar laid on a scorching August afternoon, raked and tooled by a crew in a hurry, can flash-dry before it sets — the surface looks smooth, but underneath it is weak. And the most common man-made failure I see in older Texas neighborhoods: hard Portland cement mortar smeared over soft, old brick. The mortar does not fail. The brick fails. The hard mortar traps moisture, and when the freeze comes, the face of the brick pops off in sheets — spalling — while the joint sits there smug and intact. The wrong mortar in the wrong wall does not just fail to protect the brick; it actively destroys it. I will spend a whole chapter

on this later, because it is the single most expensive mistake in repointing, and it is made by people who mean well.

Salt is another killer people forget about. Efflorescence — that white powdery bloom you see on brick — is salt crystallizing out of the masonry as water evaporates. A little of it is cosmetic. A lot of it, year after year, means water is moving through the wall carrying dissolved salts, and those salts are expanding inside the pores of the mortar, prying it apart grain by grain. If you are seeing heavy white bloom on a wall every spring, the joints behind it are fighting for their life. The bloom is the symptom. The water moving through the wall is the disease.

Vegetation gets its share too. I have pulled ivy and vines off walls where the tendrils had worked into joints and the roots had wedged cracks open wider than the day they formed. The plant is not evil — it is just a plant — but a joint full of rootlets is a joint holding water against the brick and mortar for months at a time. If you love the ivy look, love it on a trellis. Keep it off the mortar.

So why does all of this matter before we pick up a single tool? Because repointing is not cosmetic. I know it looks cosmetic — new joints, fresh lines, the wall looks better the day after than the day before — but repointing done right is structural maintenance. You are restoring the wall's weather seal. You are giving the brick its protection back. A repointed wall sheds water instead of drinking it. It flexes instead of cracking. It buys the brick another fifty years. A repointed wall is a wall that got a second career.

And here is the part that should make you take this craft seriously: repointing done wrong is worse than doing nothing. Sloppy joints trap water. The wrong mortar destroys brick. Ground-out joints that were cut too deep compromise the wall's stability. A bad repoint is not a wasted afternoon — it is damage that somebody like me will have to undo at three times the price. So this book is not a pep talk for weekend warriors. It is a field method, the one I have used for decades, laid out step by step so that whether you are doing it yourself or hiring it done, you know what right looks like. You will know when the joints are ready, what the old mortar is telling you, how deep to cut, how to match the color so the repair disappears, how to pack and tool a joint that sheds water like a duck, and when to put the tools down and call a professional.

The wall is talking. By the end of this book, you will speak its language.

Chapter 2 — Tuckpointing vs. Repointing vs. Repair — What Each Job Really Is

Ask ten contractors what tuckpointing means and you will get twelve answers, and at least four of them will be wrong. This is one of the most abused words in the masonry trade, and the confusion costs homeowners real money because people pay for one thing and get another. So let us settle it, plain and simple, the way I explain it standing in a driveway with a homeowner.

Repointing is the real work: removing deteriorated mortar from the joints and replacing it with new mortar. That is it. You cut out the old, you put in the new, you tool it, you are done. The word "repointing" describes the action — you are re-forming the points, the joints, the lines between the brick. When a mason says a house needs repointing, he means the joints are shot and the wall needs new mortar packed in. This is the job this book is about, and it is the correct term for what most people actually need.

Tuckpointing is something else entirely, and it is a historical technique most people will never actually see done. True tuckpointing is a decorative craft from old England: you rake out the joints, fill them with mortar that matches the brick as closely as possible, and then you cut a thin, precise line of contrasting mortar — usually a light lime putty — into the center of the joint to create the illusion of a fine, perfect joint. It was a way to make a wall look like it was laid with razor-thin joints when it was not. It is artistry. It is also almost never what a modern contractor means when he puts "tuckpointing" on a quote. In American practice, "tuckpointing" has become the casual, sloppy synonym for repointing — and the danger is that a homeowner hears "tuckpointing," pictures a light touch-up, and does not understand that the actual scope is full joint replacement. When you get a quote, make the contractor say "repointing" and describe the depth of the cut. If he says "tuckpointing" and waves his hand at the wall, ask what he means. Words matter when you are paying by the square foot.

Then there is repair, which is the honest word for the other stuff: replacing broken brick, rebuilding a section of wall, fixing a leaning chimney, resetting loose units. Repair is when the problem goes deeper than the joints. Repointing fixes the mortar. Repair fixes the masonry. A wall with a stair-step crack running through the brick is not a repointing job — that is a structural conversation, maybe a foundation conversation, and no amount of fresh mortar in the joints will fix what is moving underneath. I have seen homeowners pay for a full

repoint on a wall that was separating from the house, and six months later the new joints cracked in the exact same stair-step pattern because the wall was still moving. The mortar was never the problem. The mortar was the symptom.

So how do you tell which one you need? Start with your thumbnail. Walk the wall and drag your thumbnail across the mortar joints. If the mortar powders under your nail, if you can scratch a groove in it, if sand falls out when you poke it with a screwdriver — the mortar is deteriorated, and repointing is on the table. Now look at the pattern. Is the deterioration spread across the wall, or is it following a crack? Scattered, patchy deterioration — worst at the top of the chimney, along the coping, under the windowsills — is classic weather wear, and repointing is the fix. A single crack running in a stair-step through brick and mortar, doors sticking, windows binding — that is movement, and that is a repair conversation, possibly a foundation conversation. Do not repoint a moving wall. You would be painting over a check-engine light.

There is also a middle category worth naming: spot repointing versus full repointing. Spot repointing is exactly what it sounds like — you cut out and replace only the joints that are bad. It is the right call when ninety percent of the wall is sound and the damage is concentrated in one area, like the windward side of a chimney or the joints under a leaking gutter. Full repointing is the whole wall, or the whole chimney, every joint. The rule I use: if more than about a third of the joints on a wall are failing the thumbnail test, spot work is false economy. You will be back in two years doing the next third. Do it all once, do it right, and do not think about it for decades.

One more term you will hear, and it is worth knowing so nobody sells you something you do not need: "sealing" or "waterproofing" the brick. There are products that claim to waterproof a masonry wall with a spray-on treatment. Some have their place — a breathable water repellent on a sound wall can slow water absorption — but no sealer fixes bad joints. Sealer over deteriorated mortar is like putting a raincoat on a man with a broken leg. Fix the joints first. Then, if the wall is sound and exposed, talk about repellents. And never, ever let anyone sell you a non-breathable coating — a film-forming sealer that traps moisture inside the wall will destroy it from the inside out. Masonry has to breathe. That word will come up again in this book, and every time it does, it means the same thing: water gets in, and water has to be able to get out.

Now, the question every homeowner asks, and I will answer it straight: can you repoint yourself? Yes — with caveats that fill the last chapter of this book. Repointing a garden wall, a

mailbox, the lower courses of a porch pier: that is honest do-it-yourself territory if you are careful, patient, and willing to learn the technique. Repointing a two-story chimney from a ladder is not. The craft itself is not mysterious — cut, mix, pack, tool — but the stakes are real, and the difference between a joint that lasts fifty years and a joint that fails in five is in the details: the depth of the cut, the hardness match, the water content of the mix, the timing of the tooling. This book gives you all of it. But it also gives you the humility to know when the job is bigger than a Saturday. There is no shame in that. The shame is in the wrecked wall I have to fix because somebody watched a twelve-minute video and attacked their 1920s chimney with a grinder.

Know what the job is. Name it correctly. Then do it right, or hire it done right. That is the whole philosophy of this book in three sentences.

Chapter 3 — Reading the Old Mortar: Sand, Lime, Portland, and Hardness Tests in the Field

Before you touch a wall, you read it. A good mason can walk up to a house, scrape a joint with a screwdriver, rub the crumbs between his fingers, and tell you roughly when the mortar was laid, what it is made of, and what should go back in its place. That is not magic. It is pattern recognition built over years, and I am going to hand you the pattern right now so you can do a working version of it on your first try.

Mortar in American residential work is basically three ingredients in different proportions: Portland cement, lime, and sand — plus water to make it workable. Portland cement is the hard, strong, modern binder. Lime is the old binder — softer, more flexible, and self-healing in a way Portland never will be. Sand is the aggregate, the body of the mortar, and — this is the part most people miss — sand is what gives mortar its color. The cement is gray. The lime is white. But the sand is the paint. Two mortars with identical cement-to-lime ratios can look completely different if one was mixed with a red Texas sand and the other with a white plaster sand. Remember that. It is the key to the whole color-matching craft later in this book.

The history of American mortar is the history of Portland cement taking over. Before about 1930, most residential mortar was lime mortar — sometimes pure lime and sand, sometimes lime with a small amount of natural cement. It was soft, it was breathable, and it moved with the building. Then Portland cement became cheap and available, and by the 1950s the standard residential mortar was a

Portland-lime-sand blend, harder and stronger and faster-setting. Modern Type N and Type S mortars are Portland-dominant. Stronger is not always better — we will get to that — but that is the timeline: old wall, soft mortar; newer wall, hard mortar.

So the first test, and the one that matters most, is hardness. You need to know how hard the existing mortar is, because the cardinal rule of repointing — the rule that overrides almost everything else — is this: the new mortar must be equal to or softer than the old mortar, and it must never be harder than the brick. Write that on the inside of your toolbox lid.

Here is the field hardness test, and it costs nothing. Take a standard flat-head screwdriver and drag it across a mortar joint with firm pressure. If the screwdriver digs in and the mortar crumbles and powders, you have soft mortar — old lime mortar or a deteriorated Portland mix. If the screwdriver scratches a line but does not dig in, you have medium mortar — typical mid-century Portland-lime blend. If the screwdriver barely marks it and skates across, you have hard mortar — modern Portland-dominant mix. Now do the same test on the brick face. The brick should always win. If the mortar is harder than the brick — if your screwdriver marks the brick easier than the joint — you are looking at a wall that is in danger, because the next freeze will pop the brick faces instead of the joints. That wall needs the mortar softened on the next repoint, not matched.

The second test is the crumb test. Scrape out a spoonful of loose mortar from a deteriorated joint and rub it between your thumb and forefinger. Soft lime mortar crumbles into fine powder and feels almost chalky, and you will see the sand grains clearly — the binder has weathered away and the sand is what's left. Hard Portland mortar breaks into gritty chunks that resist crushing. If the crumbs are white and chalky and dissolve almost to dust, you are holding old lime mortar, and that tells you two things: the wall is probably pre-1930s or built in a traditional style, and the replacement mortar needs to be lime-based. Do not put hard Portland mortar in a lime-mortar wall. I will say it again in the historic chapter because it is that important: hard mortar in a soft wall destroys the brick.

The third test is the acid test, and you can do it in the kitchen. Put a few mortar crumbs in a glass and cover them with plain white vinegar. If it fizzes, there is lime or Portland cement carbonate present — both contain calcium compounds that react with acid. A vigorous fizz means a high lime or cement content. No fizz at all means you might be looking at something unusual — a clay-based or gypsum mortar, rare in Texas residential work but not unheard of in very old

construction. The vinegar test will not tell you the exact recipe, but it confirms you are dealing with a standard lime or cement mortar versus something exotic that needs a specialist.

The fourth reading is color, and it is the one that takes practice. Look at a fresh-broken piece of the old mortar — not the weathered surface, which is always grayer and duller than the original, but a piece broken open to show the interior. The interior color is closer to what the mortar looked like the day it was laid. Is it warm tan? Gray? Almost white? Pinkish? That color comes overwhelmingly from the sand. A warm buff mortar means a buff or tan sand. A stark white mortar means white sand and high lime. A gray mortar means gray sand, or a high Portland content darkening it. Take a photo of the broken piece in natural daylight — not direct sun, not shade, just open daylight — and keep it. That photo is the start of your color match.

While you are reading, read the brick too. Soft, handmade-looking brick — irregular faces, sandy texture, maybe some chips and color variation — is old and relatively soft, and it wants soft mortar. Hard, smooth, uniform extruded brick — the kind on most houses built after 1970 — can take harder mortar. Press the screwdriver to the brick face the way you did the joint. You are calibrating: mortar softer than brick, always. If you cannot tell how hard the brick is, assume it is softer than you think. Caution here is free. Arrogance here costs a wall.

One more field reading, and it is the easiest: look at how the old mortar failed. Did it turn to sand and fall out, leaving the brick intact? That is normal weathering of a properly matched mortar — the sacrificial system working as designed. Did the mortar stay hard while the brick faces popped off? That is the hard-mortar-in-soft-wall failure, and it tells you the last person who touched this wall used the wrong mix. Did the mortar crack in a pattern that follows the building's movement — stair-steps, vertical cracks at corners? That is not a mortar problem at all; that is movement, and repointing alone will not fix it. The failure pattern is the wall's autopsy report. Read it before you prescribe.

Write all of this down. Seriously — get a notebook, or the notes app on your phone, and record: house age, screwdriver test result, crumb test result, vinegar fizz, interior mortar color, brick hardness, failure pattern. Five minutes of notes now saves you from the most common repointing disaster there is: guessing at the mix. A mason who reads the wall first almost never gets the mortar wrong. A mason who skips the reading is just hoping. Hope is not a trade skill.

Chapter 4 — Grinding Out Joints: Depth Rules and the Tools That Don't Chew Brick

The removal is where repointing jobs are won or lost, and it is where most of the damage happens. I have fixed more walls ruined in the removal stage than in any other phase of the work. A joint that is cut clean and true will take new mortar beautifully. A joint that was chewed up by a careless grinder, cut too deep, or widened into the brick faces will fight you all the way through the job — and the wall will show the scars forever.

The depth rule first, because it is simple and non-negotiable: cut the joint to a minimum depth of three-quarters of an inch, or to sound mortar — whichever is deeper — and never deeper than necessary. Three-quarters of an inch is the minimum bite the new mortar needs to bond and stay put. Less than that and the new joint is a veneer, a skin of mortar sitting on top of old material, and it will pop out in a few seasons. But depth beyond need is just as bad. Every extra quarter inch of grinding is extra vibration, extra dust, extra risk of widening the joint and nicking the brick. Cut until you hit solid, sound mortar, then stop. If the old mortar is sound at half an inch in one section and crumbled to two inches in another, your cut depth varies — and that is correct. The wall tells you how deep to go. You listen.

For width: the new joint should match the original joint width. Do not widen the joint to make your life easier. A widened joint changes the look of the wall — the brick-to-mortar ratio is part of what makes a wall look right — and it removes brick face that you cannot put back. The grinder blade should be sized to the joint, not the other way around. Standard brick joints run about three-eighths of an inch. Use a blade that fits the joint you have.

Now the tools. The angle grinder with a diamond tuckpointing blade is the workhorse of modern repointing, and it is also the most dangerous tool in this chapter — dangerous to the wall, not to you, although it demands respect on both counts. A four-and-a-half-inch grinder with a thin diamond blade will cut mortar fast and clean. The key word is control. The blade cuts whatever it touches, and it does not know the difference between mortar and brick. The technique: score the center of the joint first, a shallow pass to establish the line, then deepen it in passes. Keep the blade centered. Keep it moving. Never park it in one spot and lean — that is how you gouge. And keep the grinder flat and steady; tipping it digs the edge of the blade into the brick arris, the crisp edge of the brick, and a chipped arris is visible forever.

Here is what I tell every young mason and every homeowner who asks: the grinder is for the long, straight, easy joints. The hammer and chisel are for everything the grinder should not touch. Around windows, at corners, in tight spots, on soft old brick, on historic walls — put the grinder down and pick up the hand tools. A plugging chisel and a mash hammer will remove mortar as fast as anything in short runs, and they cannot run away from you the way a grinder can. On soft brick, hand tools are not the careful option — they are the only option. A grinder on soft 1920s brick will chew the faces before you have finished your second pass.

Dust is the part nobody warns you about, and it is serious. Grinding mortar produces silica dust, and silica dust destroys lungs. This is not a suggestion — wear a respirator, not a paper dust mask, a real half-face respirator with P100 filters. Wear goggles that seal. If you are working on a house where people live, seal the windows, cover the plants, warn the neighbors, because the dust goes everywhere and it is fine enough to hang in the air long after you stop cutting. A grinder with a dust shroud hooked to a vacuum captures most of it at the source. Without one, you are making a cloud. I have been in this trade fifty years and I can tell you the old-timers who laughed at masks are the ones coughing now. Do not be a tough guy about your lungs.

After the grinding comes the cleaning, and this step gets skipped more than any other. The joint has to be clean before new mortar goes in — and I mean clean. Blow it out with compressed air or a blower. Brush it with a stiff brush. Then wet it down. A dry, dusty joint will suck the water out of your fresh mortar before it can bond, and you will get a joint that looks fine and falls out in two years. The joint should be damp — not running wet, not dripping — when the new mortar goes in. Damp joint, workable mortar, proper bond. That sequence is the difference between a fifty-year joint and a five-year joint.

There is one more removal mistake I see constantly, and it is a quiet one: feather-edging. That is when the old mortar is only removed in the center of the joint and the edges are left thin, so the new mortar feathers out to nothing at the brick faces. A feather edge has no strength. It cracks, it flakes, it lets water in behind the new joint. The cut needs to be square — full depth across the full width of the joint, with clean, square shoulders where the new mortar meets the brick. Square cut, full depth, clean shoulders. Say it like a mantra while you work.

And a word about what NOT to remove: sound mortar stays. If the screwdriver test says a section of joint is hard and solid, leave it alone. Repointing is not a beauty treatment where every joint gets redone for uniformity. It is surgery. You

remove the diseased tissue and leave the healthy tissue. A wall with thirty percent of its joints repointed and seventy percent original and sound is a correct wall. A wall where somebody ground out every joint "while we were at it" is a wall that took unnecessary punishment. Restraint is a trade skill too.

Finally, protect the brick during removal. Masking is not just for painters. If you are grinding near windows, cover the glass — a grinder throws sparks and grit that will pit glass permanently. Cover plants, cover the AC unit, lay drop cloths where the dust and chips will fall. The cleanup after a careless removal job can take longer than the removal itself. Work clean, work controlled, and the wall will never know you were rough with it — because you were not.

Chapter 5 — The Mortar Bucket: Travis's Color-Matching System and How It Works

Here is the question that separates the men from the boys in repointing: after you cut out the old joints and mix up fresh mortar, will the repair disappear into the wall — or will it stand out like a patch on a pair of jeans? A repoint that does not match is not a repair. It is a billboard advertising that something was wrong. Homeowners do not pay good money to have their house look like a quilt. They pay to have it look like nothing ever happened.

Color matching is the part of repointing that most contractors skip, rush, or fake. I have seen entire chimneys repointed in bright gray Portland mortar on houses where the original joints were warm buff — the repair was structurally fine and visually a disaster. The homeowner hated it. The neighbors noticed it. The house lost curb appeal the day the "repair" was finished. And the tragedy is that matching is not mysterious. It is a system. I built the Mortar Bucket system over years of trial and error because I got tired of guessing, and I am going to lay it out for you here the way I teach it to my own crew.

The Mortar Bucket is exactly what it sounds like: a bucket-based sample system for dialing in a mortar color before you commit to a wall. The principle is simple — you never mix a full batch of mortar for a wall until you have made small test batches, let them cure, and confirmed the match in daylight against the original. Mortar changes color as it cures. Wet mortar is always darker than dry mortar. A mix that looks perfect in the bucket at noon will dry a shade or two lighter by the next day. If you skip the test and go straight to the wall, you are gambling with the most visible part of the job.

Here is the system. You need five-gallon buckets — clean ones, not the ones with dried concrete in the bottom — a kitchen scale or a scoop you trust, sample cups or small containers, a trowel, a piece of brick or a test board, and your candidate sands. The sands are the whole game. As I said in Chapter 3, sand is the color. The cement is gray, the lime is white, but the sand is the paint. So the Mortar Bucket starts with sand.

Step one: collect your sand candidates. For Texas work, you are looking at the sands available to you — the local masonry sand from the yard, a white plaster sand, a buff sand, maybe a red sand if you are matching older work. Get a handful of each. Put each one in a separate labeled container. Now make your test pucks: for each sand, mix a small batch of mortar — same cement-to-lime ratio you intend to use on the wall — and form it into a puck about the size of a hockey puck, an inch thick. Label each puck with the sand name and the mix ratio. Set them on a board in the shade and let them cure for at least 48 hours. Forty-eight hours is the minimum. A week is better. Mortar keeps lightening as it cures, and a puck that matches at two days might be too light at seven.

Step two: read the pucks against the wall. Take your cured pucks out to the wall in natural daylight — not direct sun, not deep shade, just open daylight, morning or late afternoon. Hold each puck against an original joint. You are looking for the one that disappears. Not the one that is close. The one that disappears. And here is the discipline that makes the system work: if none of them disappear, you do not pick the closest and hope. You go back and blend. That is what the Mortar Bucket is really for — blending.

Blending is where the craft lives. Say your buff sand puck is too yellow and your white sand puck is too pale, and the original joint sits right between them. You blend: three parts buff to one part white, make a new puck, cure it, check it. Still too yellow? Two to two. You work it until the puck vanishes against the wall. I have blended as many as four sands to hit a match on old work — a little red, a little buff, a little white, a touch of gray. There is no shame in a four-sand blend. The shame is in a bad match.

Step three: lock the recipe. When a puck disappears against the wall, you write down the exact recipe — the sands, the proportions, the cement, the lime, the water. You write it in the bucket. Literally. I keep a grease pencil in the truck and I write the winning recipe on the side of the Mortar Bucket in big letters: the job name, the date, the blend. That bucket becomes the reference for the whole job. Every batch mixed for that wall gets measured against the bucket recipe, not from memory, not from feel. Memory drifts. The bucket does not.

Now, a word about the curing lie — because this is where most matching attempts die. A test puck cured in the shade for two days is not the same color as mortar tooled into a wall joint and cured in the sun and wind. The joint mortar dries faster, and faster drying means slightly lighter color. The wall joint also has the brick wicking moisture out of it, which changes the cure. So the Mortar Bucket system has a final step: the wall test. Before you repoint the whole chimney, repoint a small, inconspicuous section — the back of the chimney, a low corner, somewhere nobody looks — with your bucket recipe. Let it cure a week. Check it in daylight. If it disappears, you have your match and you proceed with confidence. If it is off, you adjust the blend and test again. One week of patience on a test patch saves you from a lifetime of staring at a mismatch every time you pull into the driveway.

I want to be honest about the limits. Some matches are not achievable with off-the-shelf materials. Very old lime mortars have a texture and a softness that modern Portland blends cannot perfectly replicate. Mortars with unusual aggregates — crushed shell, brick dust, odd local sands that are no longer quarried — may not have a modern equivalent. In those cases, you get as close as the materials allow, and you tell the homeowner the truth: this is the closest match available, and here is why. Honesty about a 95-percent match beats a confident lie about a 100-percent match every time. The homeowner will respect the honesty. The wall will respect the effort.

The Mortar Bucket is not complicated. It is buckets, pucks, patience, and the discipline to test before you commit. But it is the difference between a repair that vanishes and a repair that advertises. Every wall I have repointed in the last twenty years went through the bucket first. Every single one. It is the cheapest insurance in the trade — a few dollars of sand and two days of waiting — and it is the reason my repoints do not look like repoints.

Chapter 6 — Sand Is the Color: Sourcing and Blending Sands That Match Texas Brick

If Chapter 5 was the system, this chapter is the raw material — because the Mortar Bucket is only as good as the sands you put in it. And sand, in Texas, is a deeper subject than most people realize. We have an extraordinary variety of sands in this state — river sands, pit sands, manufactured sands, white sands, red sands — and each one paints the mortar a different color. The mason who understands sand understands color. The mason who does not is mixing blind.

Let us start with the fundamental truth: in a standard mortar mix, sand is roughly three-quarters of the volume. Three parts sand to one part binder is the classic proportion, and that ratio means the sand dominates everything about the mortar's appearance. The cement contributes gray. The lime contributes white. But the sand contributes the actual hue — the warmth, the coolness, the redness, the buff. Change the sand and you change the mortar's color more than any other single variable. I have made this point before in this book and I will keep making it, because it is the single most misunderstood fact in repointing: people obsess over the cement and ignore the sand, and then they wonder why the match failed.

Texas sands fall into rough families. The most common is the local masonry sand — the tan-to-buff all-purpose sand sold at every materials yard in the state. It is washed, screened, and consistent, and it makes a perfectly good warm-gray mortar. It is the default, and for many modern houses with gray mortar joints, it is all you need. But "default" is not "match." If the original mortar is whiter, warmer, redder, or darker than what this sand produces, the default will stand out.

Then there is white sand — sometimes called plaster sand or white masonry sand. It is brighter, cleaner, and it lightens any mix dramatically. White sand with white lime and a light touch of Portland makes the near-white mortars you see on some newer houses and on commercial work. It is also the great lightener in blending: when a buff sand is too dark or too warm, white sand pulls it back. Every matcher should have white sand in the arsenal.

Red and orange sands come from the iron-rich soils of East Texas and parts of Central Texas. They are less common in modern yards, but they are gold for matching older work — the warm, reddish-brown mortars on pre-war houses, on farmhouses, on buildings where the original mason used whatever the local pit produced. If you are repointing a 1920s house in East Texas and the original mortar has a warm, earthy tone, a red sand blend is probably your answer. These sands are harder to find now — some pits have closed — so when you find a good red sand source, remember it.

Manufactured sand — crushed stone screenings — is the newcomer. It is angular, consistent, and available in colors that match the parent rock: limestone screenings make a light, warm mortar; granite screenings run grayer. Manufactured sand gives you color control that natural sands sometimes cannot, because the quarry can tell you exactly what rock it came from. It is also more consistent bag to bag than pit sand, which matters when you are matching across a large job.

Now, sourcing. The practical reality is that you are limited to what your local yards carry, and most yards carry two or three sands at most. So the matcher's first job is reconnaissance: call the yards, visit the yards, get samples. I keep sample jars in the truck — baby food jars, labeled, with sand from every yard I have ever used. When I walk up to a wall, I can hold a jar of sand against the joint and get a first read before I ever mix a puck. Build your library over time. Every new sand you encounter goes in a jar.

For unusual matches — historic work, odd colors, sands that no longer exist — you have three options. First, blend what you have, as described in Chapter 5. Blending two or three available sands can hit colors that no single sand produces. Second, look further afield: a yard two counties over might carry the sand you need, and a pickup truck and a Saturday morning is cheap compared to a bad match. Third, for truly historic work, there are specialty suppliers who sell sands matched to historic mortar profiles — they are more expensive, but on a landmark or a high-value historic house, the cost is justified.

A note on sand quality, because color is not the only thing that matters: the sand must be clean and well-graded. Dirty sand — sand with clay, silt, or organic matter — makes weak mortar and can cause staining. You can test sand cleanliness with the jar test: put sand in a clear jar, fill with water, shake it, and let it settle. Clean sand settles fast and the water clears. Dirty sand leaves the water cloudy and deposits a layer of silt on top of the sand. If the silt layer is more than a thin film, find another sand. Color means nothing if the mortar fails.

And the grading — the mix of particle sizes — affects both strength and appearance. Good masonry sand has a range of particle sizes, from fine to coarse, that pack together densely. Sand that is all one size — all fine, or all coarse — makes mortar that is harder to work and weaker when cured. It also looks different: fine sand makes a smoother, denser-looking joint; coarse sand gives the joint texture and sparkle. The original mason's sand had a particular grading, and if you want the repair to match in texture as well as color, you need to think about particle size, not just hue. Hold a magnifying glass to the original joint. Look at the sand grains. Are they fine and uniform, or is there a mix? That observation goes in the notebook alongside the color.

Blending technique deserves a practical word. When you blend sands, blend them dry, thoroughly, before you add any binder or water. Dump the measured sands into the bucket, mix them dry with a trowel until the color is uniform — no streaks, no patches — and then add your cement and lime and mix dry again before adding water. If you add water before

the sands are fully blended, you will get marbling: streaks of one sand's color through the other's. Dry-blend first. Every time.

Measure by volume, consistently. A coffee can, a scoop, a bucket with lines — it does not matter what you use as long as you use the same measure every time. "About half and half" is not a recipe. "Three scoops of buff to one scoop of white" is a recipe. Write it down. The Mortar Bucket system from Chapter 5 depends on repeatability, and repeatability depends on measurement.

One last thing about sand, and it is the kind of thing you only learn by doing: sand color shifts with moisture. Wet sand looks darker and richer than dry sand. So when you are comparing a sand sample to a wall, make sure you are comparing dry to dry. A damp handful of buff sand held against a dry joint will mislead you — it will look darker than it really is. Let your samples dry fully before you judge. And when you are checking cured pucks, make sure they are fully dry too. Patience, again. The whole craft is patience.

Chapter 7 — Mixing for Strength and Workability: Water, Lime, and the Patience Balance

There is a saying in the trade: the mortar is made in the mixing, not in the materials. You can have the perfect sand blend, the right cement, the right lime — and still produce bad mortar if you mix it wrong. Mixing is where chemistry meets craft, and it is the step where impatience does the most damage. I have watched crews dump water in until the mortar "looks right" and then wonder why the joints are weak, why the color is inconsistent, why the mortar shrinks and cracks. The water is not a shortcut. The water is a measured ingredient.

Let us start with the recipe framework. Traditional mortar is described by proportions — the classic 1:1:6 (one part Portland cement, one part lime, six parts sand) is the workhorse Type N mortar for most residential repointing. For softer, historic work, you move toward higher lime: 1:2:9 or even 1:3:12 for very soft lime mortars. For harder, more exposed work — a chimney cap, a parapet — you might go 1:1:4 or a Type S blend. The numbers are volumes, not weights. And the rule from Chapter 3 still governs: match the hardness of the original, never exceed the hardness of the brick.

But the proportions are only the beginning. The real variables are water and time.

Water first. The amount of water in the mix determines workability — how easily the mortar spreads, packs, and tools — but it also determines strength. This is the central tension of mixing: more water makes the mortar easier to work, but every extra drop beyond what the cement needs for hydration weakens the cured mortar and increases shrinkage. The cement needs a specific amount of water to hydrate fully — to complete the chemical reaction that makes it hard. Water beyond that amount just sits in the mix, and when it evaporates, it leaves pores. Pores are weakness. Pores are where water gets in later. The strongest mortar is the stiffest mortar you can still work properly.

So how do you find the balance? By feel, calibrated by discipline. The mortar should hold its shape on the trowel — when you pick up a trowel full and turn it sideways, the mortar should cling, not slump off. It should be workable enough to pack into a joint with thumb pressure, but stiff enough that it does not ooze. If you are repointing and the mortar is falling out of the joints before you can tool it, it is too wet. If you cannot pack it in without it crumbling, it is too dry. The window between those two states is your working range, and it is narrower than beginners expect.

Here is the mixing sequence I teach, and the order matters. Dry-mix first: sand, cement, and lime go into the mixer or the bucket dry, and you blend them until the color is completely uniform. No streaks. This takes longer than you think — a full minute of dry mixing in a bucket, longer in a mixer. Then add water — but not all at once. Add about three-quarters of what you think you need, mix, and then add the rest in small increments. The mortar will go through stages: dry and crumbly, then lumpy, then suddenly workable. Stop adding water the moment it becomes workable. That discipline — stopping at "just workable" instead of pushing to "easy" — is worth more than any admixture.

Now the part nobody tells the weekend warrior: let it slake. After the initial mix, let the mortar sit for ten to fifteen minutes — this is called slaking, or "letting it fat up" — and then remix it briefly before use. During the rest, the cement and lime fully wet out, the mix tightens up slightly, and the workability improves without adding water. Mortar that has slaked is smoother, more cohesive, and stronger than mortar used straight off the mix. The old-timers knew this. The guys in a hurry skip it. Do not skip it.

Lime deserves its own discussion, because lime is the ingredient that separates adequate mortar from excellent mortar — and it is the ingredient most modern masons underuse. Lime does three things that Portland cement cannot. First, it makes the mortar more workable — it is the reason old mortar feels buttery on the trowel. Second, it

makes the mortar more flexible — lime mortar can accommodate small movements without cracking, which is why it is mandatory on soft brick and historic walls. Third, and most remarkably, lime gives the mortar a degree of self-healing: when hairline cracks form in lime mortar, moisture dissolves free lime and redeposits it in the crack, effectively sealing it. Portland cement does not do this. A lime-rich mortar is a living material in a way that pure Portland mortar is not.

The practical upshot: do not skimp on lime. The bag of Portland cement is cheaper and the instinct is to lean on it, but the lime is doing work the cement cannot. For repointing, I want at least as much lime as cement in the mix by volume — the 1:1 ratio of Type N — and more lime for softer walls. If you are matching an old lime mortar, the lime is not optional. It is the match.

A word about pre-mixed bagged mortar — the Type N and Type S bags at the home center. They are consistent, they are convenient, and for small jobs they are perfectly acceptable. But they are a single color — usually a standard gray — and they give you no control over the sand. For any job where color matching matters, bagged mortar is a starting point, not a solution. You can use it as the binder base and blend in your matched sands, but you cannot just mix the bag and go. The bag does not know what your wall looks like.

Temperature and timing in mixing: mix only what you can use in about an hour. Mortar has a working life — after about 90 minutes, it starts to stiffen as the cement begins its initial set. You can retemper — add a small amount of water and remix — once, maybe twice, within that window. But mortar that has sat for two hours and been retempered three times is not the same material it was at mixing. The cement has started hydrating, and you cannot un-hydrate it. If the mortar in the bucket is getting stiff and crumbly and you have been fighting it for an hour, dump it and mix fresh. The cost of a bucket of mortar is nothing compared to the cost of weak joints.

And keep your water clean. It sounds obvious, but I have seen mortar mixed with water from a rusty barrel, from a hose that had been sitting in the sun growing algae, from a puddle. Dirty water introduces contaminants — organics, salts, acids — that interfere with hydration and can cause staining or weakness. Clean potable water. Every time. It is the cheapest ingredient in the mix and the easiest to get right.

The patience balance, then, is this: measure everything, add water slowly, let it slake, use it within the hour, and never trade workability for strength by drowning the mix. Mixing is not the glamorous part of repointing. Nobody takes a photo of a bucket. But every joint you will ever tool starts as a decision

made at the mixer, and the walls remember.

Chapter 8 — Repointing Technique: Packing, Tooling, and the Striker Finish That Sheds Water

This is the chapter where the trowel meets the wall. Everything before this — the reading, the cutting, the matching, the mixing — was preparation. This is the execution. And I am going to be blunt: technique is the difference between a joint that lasts fifty years and a joint that fails in ten, even when the mortar is identical. Two masons, same bucket, same wall — one packs and tools correctly, the other does not — and ten years later you can read which joints were done by which man. The wall keeps score.

The sequence is pack, then tool, then brush. Each step has a purpose, each has a timing, and the timing is everything.

Packing comes first. The joint is cut, cleaned, and damp — remember Chapter 4, damp not dripping. You take mortar on the trowel — or on a hawk if you prefer — and you press it into the joint. The key word is press. You are not smearing mortar onto the wall. You are forcing it into the joint, compacting it, eliminating voids. Use the flat of the trowel or a pointing trowel to push the mortar in firmly, working it back and forth along the joint to make sure it fills completely. For deep joints, pack in layers — fill halfway, press it firm, then fill the rest. A joint packed in one loose pass will have voids behind it, and voids are where water collects and where the joint eventually hollows out.

How do you know the joint is packed? By resistance. When you press the trowel against the filled joint, it should feel solid — no sponginess, no give. If the mortar pushes back out around the trowel, the joint is full. Scrape off the excess with the trowel held at an angle, leaving the joint slightly proud — a little fuller than the final profile. You will tool it down to the finish in the next step. The mistake is packing the joint flush and then trying to tool it — there is nothing left to shape. Pack it proud. Always.

Now the waiting — and this is the timing that makes or breaks the joint. After packing, you do not tool immediately. You wait for the mortar to reach thumbprint hardness: firm enough that your thumb leaves only a slight print when pressed, not a deep dent. Depending on weather, this is anywhere from fifteen minutes to an hour. Too early, and the mortar is still plastic — tooling it now will smear it, drag sand

out of the surface, and leave a weak, sandy finish. Too late, and the mortar has set too hard to shape — you will be grinding the surface instead of forming it, and the joint will not compact properly. Thumbprint. Learn to read it. It is the single most important timing judgment in repointing.

Tooling is the shaping of the joint, and the shape matters more than most people realize — because the shape determines how the joint sheds water. The classic profile for repointing is the concave joint, made with a jointer tool — a curved metal bar, sometimes called a sled runner — drawn along the joint with firm, even pressure. The concave profile does two things: it compacts the surface of the mortar, densifying it against weather, and it creates a curved channel that sheds water outward instead of letting it sit. A concave joint is the default for a reason. It is the best all-around profile for weather resistance.

But there are other profiles, and each has its place. The flush joint — tooled flat with the brick face — is common on older work and on walls where the original was flush. It is less weather-resistant than concave because water sits on the flat surface, but when you are matching original work, you match the original. The weathered joint — sloped from the top of the joint down and out — sheds water aggressively and is excellent on sills and copings. The V-joint — a sharp V pressed into the center — is decorative and traditional on some styles. The rule: match the existing profile on the wall unless there is a compelling weather reason to change it. Consistency across the wall matters more than theoretical perfection in one section.

The tooling stroke itself: one continuous pass per joint, steady pressure, steady speed. Start at one end and draw the jointer through to the other end without stopping. Stopping and starting leaves marks — little ridges where the tool paused. If the joint is long, work in sections, but overlap the strokes so the profile is continuous. Keep the jointer clean — wipe it frequently. A jointer caked with dried mortar drags and tears instead of shaping. And use the right size jointer for the joint width. A jointer too wide will ride up on the brick faces and scratch them. A jointer too narrow will not shape the full joint. Match the tool to the joint.

After tooling comes the brush — and this is the step that separates the craftsman from the handyman. When the tooled joint has firmed up slightly — past thumbprint, approaching set — take a soft brush and lightly brush the joints. This does two things: it removes the thin film of mortar smeared on the brick faces during packing (the "mortar smear" that dulls the wall if left), and it gives the joint a uniform, slightly textured finish that matches the look of original hand-tooled work. Brush lightly, always in the direction of the joint, never across

it. Brushing across the joint drags mortar out. And do not brush too early — brushing a soft joint will ruin the tooling. Wait until the joint holds its shape firmly, then brush.

The striker finish — the term in this chapter's title — deserves explanation, because it is the standard I hold every joint to. A "struck" joint is one that has been properly tooled with the jointer — the old term for the jointer was the "striking tool," and to "strike" a joint meant to shape it. A properly struck joint is compacted, uniformly profiled, free of voids, with clean edges where the mortar meets the brick and no smear on the brick faces. When I walk a finished wall, I am checking every joint against that standard: is it struck? Is it uniform? Does it shed water? A wall of properly struck joints will outlast a wall of sloppy joints by decades, same mortar, same wall.

Common technique failures, so you can recognize them in your own work: the "smeared" joint — tooled too early, mortar dragged across the brick, sandy weak surface. The "hollow" joint — packed loosely, voids behind, sounds hollow when tapped, will fall out in chunks. The "proud" joint — left sticking out past the brick face instead of tooled back, catches water and looks amateurish. The "burned" joint — over-tooled, worked too long with the jointer, surface densified to a slick finish that actually traps moisture and looks wrong. Each of these has a cause and each has a fix, and the fix is always the same: slow down, read the mortar, respect the timing.

Work in manageable sections. Do not pack an entire wall and then try to tool it — by the time you get back to the start, the first joints will have set too hard. The rhythm is: pack a section you can tool in the next half hour, wait for thumbprint, tool it, brush it, move on. On a hot day, that section is smaller. On a cool day, it is larger. The mortar tells you the pace. Listen to it.

And clean as you go. Wipe the brick faces with a damp sponge as you work — not soaking wet, just damp — to remove smears before they set. Dried mortar smear on brick is miserable to remove later. A quick wipe now saves an hour of acid cleaning later, and acid cleaning is something you want to avoid if at all possible. The clean wall is the professional wall.

Chapter 9 — Historic and Soft Brick: When NOT to Use Hard Mortar

This is the most important chapter in this book. I am not being dramatic. If you take one thing from these pages and

forget everything else, take this: never put hard Portland cement mortar in a wall built with soft brick and lime mortar. It is the single most destructive mistake in repointing, it is made constantly by well-meaning people, and the damage is irreversible. I have spent a significant part of my career repairing walls that were ruined not by time or weather, but by the last guy's mortar.

Here is the physics, plain and simple. Old brick — handmade brick, pre-1930s brick, the soft salmon-colored brick on Texas farmhouses and early town buildings — is relatively soft and porous. It absorbs water. It expands and contracts. It needs to breathe. The lime mortar it was laid in is softer than the brick, more porous than the brick, and flexible. When water gets into the wall, it moves through the mortar — the path of least resistance — and evaporates out. When the wall moves, the soft mortar flexes. The system works because the mortar is the weak link by design, exactly as I described in Chapter 1.

Now put hard Portland mortar in those joints. The Portland is harder than the brick. It is denser, less porous, less flexible. Water still gets into the wall — water always gets in — but now it cannot move through the mortar. So it moves through the brick. The brick, which was never meant to be the drainage path, saturates. Then the freeze comes. The water in the brick expands. And because the mortar is harder than the brick, the brick loses. The face of the brick pops off in sheets — spalling — while the hard mortar joint sits there intact, smug, holding the ruined brick together like a frame around a broken picture. I have seen entire walls where every brick face has spalled off and the mortar joints are perfect. That is not a wall. That is a mortar grid holding brick corpses.

The tragedy is that this damage cannot be undone. You cannot un-spall a brick. Once the face is gone, the brick is compromised forever. The only fix is brick replacement — cutting out the ruined units and laying new ones — which is ten times the cost of the repointing that caused the problem. And the cruelest part: the homeowner paid for the repointing thinking they were maintaining the wall. They paid to have their wall destroyed.

So how do you avoid it? By reading the wall first — Chapter 3 — and respecting what you read. If the screwdriver test says the old mortar is soft, if the crumb test gives you chalky powder, if the house is pre-1930s or the brick is soft and handmade-looking, you are in lime-mortar territory. The replacement mortar must be lime-based: high-lime mixes like 1:2:9 or 1:3:12, or a pre-mixed natural hydraulic lime (NHL) mortar designed for historic work. Not Type N. Not Type S. Not the gray bag from the home center. Lime.

I know what the objection is, because I hear it every time:

"But lime mortar is weaker. Won't it fail faster?" Weaker than what? Weaker than Portland, yes — in compressive strength. But compressive strength is not the relevant measure here. The relevant measures are compatibility, flexibility, and breathability, and on all three, lime wins for old walls. A lime mortar that lasts forty years and protects the brick is infinitely better than a Portland mortar that lasts eighty years and destroys the brick in twenty. The mortar is supposed to be sacrificial. Let it sacrifice. That is its job.

There is also a middle ground that confuses people: the Portland-lime blends. A 1:1:6 Type N is harder than a pure lime mortar but softer than a straight Portland mix. For transitional walls — say, a 1940s house with medium-hard brick and original Portland-lime mortar — Type N is often the correct match. The key is matching, not maximizing. You are not trying to make the strongest mortar. You are trying to make the right mortar for that specific wall. Strength beyond need is not a bonus. It is a liability.

For truly historic structures — landmarks, designated historic districts, buildings where preservation standards apply — there is an additional layer: the Secretary of the Interior's Standards for Rehabilitation, which govern how historic masonry should be treated. Those standards essentially codify what I have been telling you: match the original mortar in composition, hardness, color, and texture; never use harder mortar than the original; preserve as much original material as possible. If you are working on a designated historic building, familiarize yourself with those standards, and consider bringing in a preservation specialist for the mortar analysis. A laboratory can analyze the original mortar and give you the exact recipe. It costs a few hundred dollars. On a historic building, it is the cheapest money you will spend.

A practical note on working with lime mortar, because it behaves differently from Portland: lime mortar sets more slowly, stays workable longer, and needs protection from rapid drying. You cannot treat it like Portland. Cover fresh lime work if the sun is brutal. Mist it if the wind is drying it too fast. Give it time — lime mortar gains strength over weeks and months as it carbonates, not over days like Portland. The patience you learned in mixing applies double here. And do not let anyone tell you lime mortar is "just for old buildings." It is the correct material for any soft-brick wall, historic or not.

The final word on this chapter is a plea: if you are a contractor reading this, and you have been putting Type S mortar in every wall because "stronger is better" — stop. Today. You are damaging soft-brick walls across Texas, and most of your customers will not know it for ten years, when the spalling starts. If you are a homeowner, and a contractor

tells you he is going to repoint your 1920s house with "the strong stuff" — get a second opinion. The strong stuff is the wrong stuff. The wall told you what it needs when it was built. Listen to the wall.

Chapter 10 — Weather, Curing, and the Mistakes That Crack Fresh Joints

You can cut perfectly, match perfectly, mix perfectly, pack and tool perfectly — and still ruin the job in the curing. Fresh mortar is vulnerable. For the first few days of its life, it is a chemical reaction in progress, and that reaction needs the right conditions: moderate temperature, adequate moisture, protection from extremes. Get the curing wrong and the joints will crack, shrink, or fail to gain strength — and you will not know it until months later, when the cracks appear and you are trying to figure out what went wrong.

The enemies of curing are heat, cold, wind, and rain. Let us take them in order.

Heat is the Texas enemy. When the temperature is above 90 degrees — which in Texas is roughly half the year — fresh mortar dries too fast. The surface sets while the interior is still plastic, and the result is shrinkage cracking: a network of fine cracks across the joint surface that lets water in from day one. The surface may also "flash set" — stiffen so fast that you cannot tool it properly. The defenses: work in the morning and quit by early afternoon. Work the shaded side of the house first and follow the shade around. Mist the wall lightly before you start — damp brick draws less water from the mortar. Cover fresh work with damp burlap or plastic sheeting if the sun is brutal. And mix smaller batches, because hot-weather mortar has a shorter working life. Everything about hot-weather repointing is about slowing down the drying.

Cold is the less obvious Texas enemy, because people assume Texas does not get cold. It does — not for long, but long enough to destroy fresh mortar. If the temperature drops below 40 degrees within the first 24 hours after tooling, the hydration reaction slows dramatically, and if it drops below freezing, the water in the fresh mortar expands and shatters the joint from the inside. A freeze on the first night will ruin every joint you laid that day. The defenses: check the forecast before you start, not after. If a cold snap is coming within 48 hours, do not lay mortar. If you are caught by surprise, cover the work with insulated blankets — not just plastic, which traps condensation, but actual insulation. And never lay mortar on a frozen wall or when the wall temperature is

below freezing. The brick will suck the heat out of the mortar and the bond will fail.

Wind is the silent killer that nobody respects. A steady 20-mile-an-hour wind will dry the surface of fresh mortar as fast as direct sun, even on a cool day. Wind accelerates evaporation from the joint surface, causing the same shrinkage cracking as heat. The defense is windbreaks — simple tarps or plywood sheets set upwind of the work area — and more frequent misting. If you are working on an exposed chimney or a wall with no wind protection, assume the wind is working against you and adjust accordingly: smaller sections, faster tooling, protective covering sooner.

Rain is the most dramatic enemy. A hard rain on fresh mortar — within the first few hours — will wash the cement out of the joints, leaving sandy, weakened mortar and streaked brick faces. Even a light rain on mortar that has not yet set can damage the surface. The defense is covering: keep plastic sheeting and a way to secure it on the truck whenever you are repointing. If rain is in the forecast within 12 hours of your planned work, postpone. I have seen a single afternoon thunderstorm undo two days of careful repointing. The sky does not care about your schedule.

Beyond the four enemies, there are the curing mistakes — the things masons do to themselves. The biggest is neglecting moisture. Fresh mortar needs to stay damp — not wet, damp — for the first several days while it cures. In dry Texas air, that means misting. A light misting with a garden sprayer, two or three times a day for the first three days, makes an enormous difference in the final strength of the joints. The mortar that stays damp cures fully. The mortar that dries out in six hours never reaches its potential strength. This is the cheapest quality improvement in repointing: water, applied as mist, on a schedule.

The second curing mistake is loading the wall too soon. Fresh joints need time before they take stress. Do not lean ladders against fresh work. Do not let anyone pressure-wash near it for at least a week. Do not hang things on it. The joints are gaining strength every day for the first month, but the first week is when they are most vulnerable. Treat fresh repointing like a healing wound: protect it, keep it clean, give it time.

The third mistake is the opposite: over-protecting to the point of trapping moisture. Covering fresh work with plastic sheeting is good for rain protection, but if you leave the plastic tight against the wall for days in hot weather, you create a steam bath — condensation forms, the mortar stays too wet, and you can get efflorescence or delayed curing. The covering should protect from direct rain and sun while allowing air circulation. Drape it, do not shrink-wrap it. And

remove it when the threat has passed.

Timing the whole job around weather is a skill in itself. In Texas, the ideal repointing seasons are spring and fall — moderate temperatures, lower wind, predictable weather. Summer work is possible but requires the hot-weather protocols. Winter work is possible but requires vigilance about freezes. I have repointed in every month of the year, and every month demands its own precautions. The mason who checks the forecast every morning and plans accordingly will have fewer callbacks than the mason who just shows up and mixes.

One final curing truth: the wall will tell you if the curing was right. After a month, walk the work and look at the joints. Properly cured joints are uniform in color, free of shrinkage cracks, firmly bonded — the screwdriver test should show the new mortar at the intended hardness. If you see a network of fine surface cracks, the mortar dried too fast. If the joints are powdery, the mix was too wet or the curing too dry. If the color is blotchy, the curing was uneven — some sections dried fast, others slow. Read the finished work the way you read the original wall. The curing leaves its signature, just as surely as the mixing and the tooling do.

Chapter 11 — Chimneys, Steps, and Mailboxes: Small Jobs, Same Rules

Not every repointing job is a whole house. Some of the most common calls I get are for the small stuff: a chimney that is shedding mortar, brick steps with joints opening up, a mailbox leaning because the mortar gave out at the base. Homeowners sometimes assume these little jobs are simpler, or that the rules are looser because the area is small. They are not. The same physics applies to a mailbox that applies to a mansion. Water, freeze-thaw, mortar hardness, curing — none of it cares how big the job is. The small jobs just punish mistakes faster, because there is less wall to hide them in.

Let us start with chimneys, because the chimney is where repointing most often starts for a homeowner — it is the canary, as I said in Chapter 1. Chimneys fail first and fastest for reasons that are entirely predictable: they are the tallest, most exposed part of the structure; they take weather from every direction; the flue gases heat and cool the masonry in cycles; and the cap, the crown, and the flashing — the chimney's weatherproofing system — are often the weakest links in the whole assembly.

When I look at a chimney, I am looking at more than the

joints. I am looking at the crown — the concrete or mortar cap at the very top. A cracked crown lets water pour straight down into the flue and the masonry below, and no amount of repointing will fix a chimney with a failed crown. If the crown is cracked through, it needs to be rebuilt or replaced before you touch a single joint. I am looking at the flashing where the chimney meets the roof — if that flashing is compromised, water is running behind the brickwork and the joints are failing from the inside out. And I am looking at the flue liner, because a damaged liner lets acidic flue gases attack the mortar from within. Repointing a chimney without checking the crown, the flashing, and the liner is like painting a car with a cracked engine block. The cosmetics do not matter if the system is broken.

The repointing itself on a chimney follows every rule in this book, with two additions. First: access. You are working at height, on a roof, often on a steep pitch. Scaffolding or a proper roof setup is not optional — it is the difference between a careful job and a dangerous one. I have seen more sloppy chimney repointing than any other kind, and almost all of it traces back to a mason trying to work from a ladder, rushing, reaching too far, laying mortar he cannot properly pack and tool because he is worried about falling. Get the access right and the masonry will follow. Second: exposure. A chimney takes the worst weather the property gets, so the mortar mix and the curing protection matter more here than anywhere. Do not cut corners on the mix. Do not skip the curing protection. The chimney is the wall's front line — arm it accordingly.

Steps are the second common small job, and they fail for a different reason: movement and water pooling. Brick steps take foot traffic — impact, vibration, point loads — and they sit low, where water collects. The joints in steps fail from a combination of mechanical stress and constant moisture. When I repoint steps, I am paying special attention to the mortar hardness (steps need mortar that can take the flex without crumbling, but still softer than the brick), the drainage (water should never sit on a step — if the steps were built without proper slope, I am telling the homeowner, because repointing will not fix a drainage problem), and the bond (step joints take more abuse than wall joints, so the packing has to be thorough — no voids, no shortcuts).

There is also a safety dimension to steps that does not exist for walls. A failed joint in a wall is a weather problem. A failed joint in a step is a trip hazard. Loose brick on a step can shift underfoot. I treat step repointing with the urgency of a safety repair, because that is what it is. And I tell every homeowner: if a step brick is rocking, do not wait for the repointing appointment. That brick needs to come out and be reset now, before somebody catches a toe on it in the dark.

Mailboxes are the third, and they are the humblest job in masonry — which is exactly why I love them. A brick mailbox is often the first thing a visitor sees, and a leaning, crumbling mailbox tells the whole street that the homeowner has stopped caring. But mailboxes fail for a structural reason that most people miss: they have no foundation to speak of. A brick mailbox is typically a freestanding pier sitting on a small footing, sometimes just a pad, with no connection to the house. Every wind gust, every mower bump, every freeze-thaw cycle works on those joints with no structural backup. The mortar in a mailbox lives a harder life than the mortar in a house wall.

When I repoint a mailbox, I am checking plumb first. If the mailbox is leaning, repointing alone will not fix it — the lean means the footing has shifted or the pier has cracked through, and the whole thing may need to be taken down and rebuilt. I am honest about this. A leaning mailbox that gets a cosmetic repoint is a mailbox that will be leaning further next year, with fresh mortar cracking along for the ride. But if the pier is plumb and the brick is sound, repointing a mailbox is straightforward, satisfying work — and it transforms the curb appeal of a house in a single afternoon.

The lesson of the small jobs is the lesson of the whole book in miniature: the rules do not change with the size of the job. Assess before you cut. Match the mortar. Cut to the right depth. Pack it tight. Tool it right. Cure it properly. A chimney, a step, a mailbox — each one deserves the full method, because each one is a wall in miniature, and each one will punish shortcuts just as surely as the big walls do. The mason who does small jobs right is the mason you want on your big job. And the homeowner who understands that will never again ask, "Can't you just slap some mortar in there?" — because now they know what "just" costs.

Chapter 12 — Knowing When to Call a Mason: Honesty About Scope, Safety, and Hiring Right

I have spent eleven chapters teaching you how to repoint brick. This chapter is about knowing when not to. That is not a contradiction — it is the most important lesson in the book. A mason who knows his limits is worth ten who do not, and a homeowner who knows when to pick up the phone will save more money than any amount of DIY skill. Repointing is honest work, and part of the honesty is admitting what the job actually requires.

Let us start with scope. The repointing I have described in this book — assessment, cutting, matching, mixing, packing,

tooling, curing — is well within the reach of a careful, patient homeowner on a limited area: a garden wall, a mailbox, a section of house wall you can reach from the ground or a stable scaffold. What is NOT a homeowner job: anything above the first story that you cannot reach safely, any chimney that requires roof work, any wall where the brick itself is failing (spalling, cracking through, bulging), any structural concern (bowing walls, cracked lintels, foundation movement showing up in the brickwork). If the wall is telling you something beyond worn joints — if bricks are displaced, if there are stair-step cracks running through the masonry, if a section of wall has moved — that is not a repointing job. That is a structural evaluation, and it starts with a professional.

Safety draws the next line. Masonry work at height kills people every year. If the work requires you to be on a roof, on a tall ladder with both hands occupied, or on scaffolding you have never set up before, stop and call someone. Mortar dust is a respiratory hazard — I said it in Chapter 4 and I will say it again: silica dust destroys lungs, and a paper mask is not protection. Grinders kick, chisels send chips flying, and old mortar can contain surprises. A professional mason has the equipment, the training, and the insurance. Your health is not the place to save money.

Now, hiring right. If you have decided this job needs a mason, here is how to find a good one — and how to spot the ones to avoid.

A good mason will assess before quoting. If someone gives you a price over the phone without looking at the wall, without doing the screwdriver test, without asking about the age of the building — that is not a mason, that is a salesman. The assessment IS the job. Anyone who skips it will skip other things too.

A good mason will talk about mortar matching. Ask what mortar they plan to use. If the answer is "Type S" or "the strong stuff" or a shrug — walk away, especially if your building is pre-1940s or has soft brick. If the mason talks about testing the existing mortar, matching the hardness, sourcing the right sand — you are in good hands. The mortar conversation is the single best filter I know. It takes thirty seconds and it reveals everything about how this person thinks.

A good mason will be specific about scope. "We will repoint the south and west elevations, cut to three-quarter-inch minimum depth, match the existing mortar in color and hardness, protect the landscaping, and clean up daily." Vague promises — "we'll fix it up," "make it look new" — are where disputes are born. Get the scope in writing. Get the mortar spec in writing. Get the cleanup commitment in writing.

A good mason will not badmouth the wall to sell you more work. There is a type of contractor who walks up, sucks his teeth, shakes his head, and tells you the whole wall needs to come down. Sometimes a wall does need major work. But the teeth-sucking performance is a sales tactic, and an honest mason will show you what he sees — point to the specific failures, explain the cause, propose the proportionate fix — rather than performing dismay. Ask to be shown. A real problem can be pointed at. A sales pitch cannot.

Red flags, plainly: no references or unwillingness to provide them. No insurance — ask, and verify. Demands for large cash deposits upfront (a reasonable deposit on materials is normal; half the job in cash before work starts is not). Unwillingness to put anything in writing. Pressure to decide today. And the biggest one in my trade: the mason who says your old lime-mortar wall needs "the strong Portland stuff" to "really fix it." That person is about to destroy your soft brick. Show them the door.

A word about price. Repointing is skilled, physical, time-consuming work, and it should cost real money. If a quote seems impossibly cheap, it is because something is being skipped — the assessment, the mortar matching, the depth of cut, the curing, the cleanup. The cheapest repointing job is the one done right the first time. The most expensive is the one done wrong and then done again, with brick damage in between. I have rebuilt walls that were "repointed" by the low bidder, and the homeowner paid twice — once for the damage, once for the repair. Get three quotes. Throw out the outlier on each end. Hire the mason in the middle who assessed properly and talked mortar.

Finally, a note for the homeowner who has read this whole book and is feeling ambitious: I respect that. Everything I have taught you is real, and a careful person can do genuinely good repointing on the right job. Start small. A mailbox, a garden wall, a low section where mistakes are cheap and the learning is priceless. Do one small job well before you take on a big one. And keep this book on the truck — or the workbench — because the wall will keep teaching you, and the best masons I know are still learning from every wall they touch. I know I am.

Conclusion

If you take one thing from this book, let it be this: the wall is always talking. It told you when the joints started to fail. It told you what mortar it was built with, if you knew how to read it. It told you how deep to cut, what sand to use, when the weather was wrong for the work. Every wall I have touched in fifty years has been a teacher, and the masons who

last in this trade are the ones who never stop listening.

Repointing is not complicated, but it is exacting. Assess honestly. Cut to sound mortar and no deeper. Match the mortar in hardness, color, and texture — sand is the color. Mix with patience. Pack the joints tight. Tool them to shed water. Cure them like the chemical reaction they are. And when the job is beyond your scope or your safety margin, call a mason who will do all of this as carefully as you would.

The brick you repoint today will outlast you if you do it right. That is not poetry — it is the plain arithmetic of the trade. A joint laid correctly buys fifty years. A joint laid carelessly buys five. The difference is not talent. It is attention: to the wall, to the mortar, to the weather, to the details that nobody sees but everybody depends on. Attention is the whole craft.

Go look at your walls. Get your nose six inches from the joints. Run the screwdriver test. Listen to what the wall tells you. And then — whether you pick up the grinder yourself or pick up the phone to hire it done — do it right. The wall deserves it. So does the next person who lives with it.

Resources & Next Steps

Travis Nech has spent 50 years in brick, masonry, and foundation work across Texas. He owns and operates Champion Brick Repair, Metro Foundation Repair, LintelLOCK, MortarMagic, and WhiteStone Construction.

- **Champion Brick Repair** — brick & masonry repair, Dallas-Fort Worth — championbrickrepair.com — (817) 900-6324
- **Metro Foundation Repair** — pressed concrete pile foundation repair — metrofoundationrepair.com — (817) 523-1540
- **LintelLOCK** — the field-developed lintel replacement system — lintlerepair.com — (469) 730-0650
- **MortarMagic** — mortar color matching & the Mortar Bucket — mortarmagic.netlify.app
- **WhiteStone Construction** — stone, ranch & property work, Hamilton TX country — (254) 723-5040

For a free evaluation of your brick, mortar, or lintel questions, text photos anytime — the team will take a look and tell you straight what the wall needs.

About the Author

Travis Nech has spent 50 years in brick, masonry, and foundation work across Texas. He started as a young mason learning the trade one wall at a time, and he never stopped learning — from the walls, from the old-timers, from fifty years of Texas weather doing its best to tear down everything he built. He owns and operates Champion Brick Repair, Metro Foundation Repair, LintelLOCK, MortarMagic, and WhiteStone Construction, serving homeowners across Dallas-Fort Worth and the Hamilton County ranch country he calls home.

Travis writes the way he works: plain-spoken, direct, and honest about what a wall needs and what it does not. His books are field manuals, not textbooks — written for homeowners who want to understand their houses and for masons who want to do the work right.

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