

The LintelLOCK System

by Travis Nech

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The LintelLOCK System

The Field-Developed Playbook for Diagnosing, Removing, and Replacing Failed Lintels So They Never Fail Again

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The techniques and procedures described in this book reflect the author's field experience in brick, masonry, and foundation work across Texas. They are provided for informational purposes. Masonry and structural work carries real risk. When in doubt, hire a licensed professional — and for structural questions beyond the scope of a standard lintel replacement, consult a structural engineer.

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Chapter 1: The Unseen Backbone: What a Lintel Is and Why It Matters

Stand on the sidewalk in front of any brick house in Dallas-Fort Worth and look at the windows. Above every window, every door, every garage opening, there is a horizontal line of masonry that spans the gap. Underneath that line — sometimes visible, sometimes hidden behind a row of brick — sits one of the hardest-working and least-appreciated parts of the entire house: the lintel.

A lintel is simply a beam that carries the weight of the masonry above an opening. Every time a bricklayer leaves a hole for a window or a door, the brick above that hole has to be held up by something. That something is the lintel. It takes the crushing downward load of hundreds or thousands of pounds of brick and transfers it sideways into the wall on either side of the opening. Without it, the brick above would have nothing to sit on, and the whole section would come crashing down.

Most Texas homeowners have never heard the word "lintel" until something goes wrong with one. That's a shame, because lintels are everywhere. A typical brick ranch house in the Metroplex can have eight to twelve of them: one over every window, one over the front door, and one or two big ones over the garage. Two-story homes have more. And because Texas builds with brick veneer over wood framing — a system that puts a lot of masonry weight on every opening — lintel problems show up here more often than most people realize.

There are a few common types. The most common in Texas residential work is the steel angle lintel: a piece of angle iron, typically 3-1/2 by 3-1/2 inches or 4 by 4 inches, set into the wall with one leg tucked behind the brick and the other leg supporting the first course of brick over the opening. You'll also see precast concrete lintels, usually in older construction or commercial work, and occasionally stone lintels on older or custom homes. In wood-framed walls behind the brick, the actual structural header is wood — but the steel angle in the brick veneer is what we're talking about when we say "lintel" in a brick repair context. That angle iron is doing real work. It's holding up the brick, and it has to do it for the life of the house.

Here's the thing most people don't understand about lintels: they're not supposed to be the center of attention. A good lintel does its job invisibly for fifty years. It holds the load, it sheds water, and nobody thinks about it. When a lintel starts demanding attention — when cracks appear, when brick starts sagging, when rust stains bleed down the face of the wall — that's the house telling you the backbone is failing. And a failing backbone is not a cosmetic problem. It's a structural one, even when it looks small.

I've spent fifty years working brick, masonry, and foundations across Texas, and I can tell you that lintel failure is one of the most common masonry problems I see in the field, and one of the most commonly misunderstood. Homeowners see a crack above a window and assume the foundation is moving. Sometimes it is — foundation movement causes its own crack patterns, and I'll show you how to tell the difference later in this book. But more often than people think, that crack traces back to the lintel: rust expanding under the paint, bearing that was too short to begin with, water sitting on the steel because nobody ever installed flashing, or a previous replacement that was done cheap and fast and is already failing again.

The LintelLOCK system exists because of that last problem. Over the years, I watched the same story play out over and over: a homeowner pays good money for a lintel replacement, and five or eight years later the new lintel is rusting, the brick

is cracking again, and the whole expensive job has to be redone. That's not bad luck. That's a method problem. Most lintel replacements fail because the method is incomplete — the old steel comes out, a new piece goes in, and the reasons the first one failed are left right there in the wall, ready to eat the second one.

Consider a hypothetical homeowner in Arlington with a 1970s brick ranch. She notices a stair-step crack running up from the corner of the living room window, and there's a rusty stain streaking down the brick. A handyman tells her it's nothing, just settlement, and caulks the crack. Two years later the crack is wider, the soldier course above the window — that's the row of bricks standing on end over the opening — has dropped a half inch, and now there's water staining the wall inside below the window. By the time she calls a mason, she's looking at a full lintel replacement, plus water damage repair inside, plus mortar work across the whole opening. The early signs were there for years. Nobody read them.

This book teaches you to read them. Whether you're a homeowner trying to protect your house, or a contractor who wants to do this work right and build a reputation on it, you'll find the complete method here: what lintels do, how to diagnose failure with your eyes before it becomes an emergency, why common replacements fail, and the full field-developed LintelLOCK replacement method — step by step, from shoring to removal to sizing to bearing to flashing to mortar matching to curing. Nothing in this book is theory. It's the way the work is actually done in the field, developed over five decades of standing on ladders in Texas heat, reading walls, and fixing what other people got wrong.

One more thing before we get into the work. Masonry carries real weight — literally. The procedures in this book assume you respect that. If a situation looks beyond a standard lintel replacement — if the wall itself is moving, if framing is compromised, if the opening is unusually large or the load is unusual — bring in a structural engineer before you touch anything. A good mason knows where his lane ends. This book covers the lintel lane thoroughly. The engineer's lane is the engineer's. Respecting that boundary is part of doing the work right.

In Chapter 2, we'll get your eyes trained. You'll learn to look at the wall above a window and read it the way a mason reads it — step cracks, sagging soldier courses, rust bleed, and the patterns that separate a lintel problem from a foundation problem. By the time you finish that chapter, you'll never look at the top of a window the same way again.

Chapter 2: Reading the Warning Signs: Diagnosing Lintel Failure

A mason reads a brick wall the way a doctor reads a patient. The wall shows symptoms, and every symptom has a cause. The cracks, stains, and sags above your windows and doors are the wall talking to you. This chapter teaches you the language.

The first and most common symptom is the step crack. Look at the corner of a window or door opening and trace the mortar joints upward and outward in a stair-step pattern. Each step follows a mortar joint, and the crack climbs diagonally away from the corner of the opening. This is the classic signature of movement above the opening — the masonry over the window is shifting because its support, the lintel, is failing or undersized. A fresh step crack will be clean inside, with sharp edges. An older one may have been caulked or patched, which doesn't fix anything — it just hides the evidence for a while. If you see a step crack that's been caulked, pull the caulk back gently in one small spot and look at the crack underneath. If it's widened or crumbled since the caulk went in, the movement is active.

The second symptom is a sagging soldier course. Over many windows, the first row of brick above the opening is laid with bricks standing on end — soldiers. Look at that row with a straight edge or just sight along it with your eye. If the middle of the soldier course has dropped relative to the ends — even a quarter inch — the lintel is deflecting under load. Steel lintels shouldn't deflect noticeably. When they do, either the steel is undersized for the span, the steel is corroding and losing section, or the bearing on one or both ends is failing. A sagging soldier course is one of the most reliable lintel-failure indicators there is, because the soldier course sits directly on the lintel. It tells you what the steel is doing.

The third symptom is rust bleed. Look for orange-brown staining running down the face of the brick below the ends of the lintel, or streaking from the corner of the opening. That stain is iron oxide washing out of corroding steel. It means water has reached the lintel and the steel is actively rusting. Rust is not just ugly — it's expansive. When steel rusts, the corrosion product takes up more volume than the original steel, sometimes several times more. That expansion acts like a slow-motion jack inside the wall, pushing brick apart, popping mortar joints, and cracking the masonry from the inside. A mason calls this "rust jacking," and it's one of the most destructive forces in masonry. The stain you see on the

surface is the tip of the iceberg; the expansion damage is happening inside the wall where you can't see it.

The fourth symptom is spalling and mortar deterioration concentrated at the opening. If the mortar joints around a window are crumbling while the rest of the wall's mortar is sound, water is likely getting in at the lintel and working on the steel and the mortar together. Spalling brick faces near the opening — brick surfaces flaking or popping off — point to the same water problem.

Now the critical skill: separating a lintel problem from a foundation problem. This distinction matters because the fixes are completely different, and I see the two confused constantly. Here's how to read the difference.

Lintel-related cracks are LOCAL to the opening. They start at or near the corner of a window or door and stay in that neighborhood. The crack pattern follows the opening — step cracks climbing from the corner, horizontal cracking along the soldier course, rust staining tied to the lintel location. The rest of the wall may be perfectly sound. If only one window shows distress and the rest of the house looks fine, the lintel is your prime suspect.

Foundation-related cracks are REGIONAL. They run across larger sections of wall, they often appear at multiple openings, and they follow the geometry of the settlement — vertical or diagonal cracks running from the ground up, cracks that are wider at one end, doors and windows sticking in their frames across the house, gaps between the brick and the trim. If three windows on the same wall all show step cracks on the same side, or if the crack runs from the soil line all the way up past the window, think foundation first. (For the record, foundation work is Metro Foundation Repair's lane, and the right fix for settlement is pressed concrete piles — but that's another book.)

There are also cases where both are true: a foundation shift stresses the wall, and the lintel — the stiffest point around an opening — takes the load and cracks first. In those cases you fix the foundation first, then address the lintel. Fixing the lintel while the wall is still moving is like patching a tire while it's still on the nail.

Your inspection routine, whether you're a homeowner checking your own house or a contractor quoting a job, should be systematic. Walk the entire exterior of the house and look at every opening — every window, every door, the garage. Work in the same order every time so you don't skip one. At each opening, check four things: (1) step cracks at the corners, (2) the level of the soldier course, (3) rust staining, (4) mortar condition around the opening. Write down what

you see at each one. Then step back and look at the pattern: is the distress at one opening, or many? Local or regional? That pattern is your diagnosis.

Consider a hypothetical homeowner in Fort Worth with a two-story brick home built in the early 1980s. She walks the house using this routine and finds step cracks at two upstairs windows on the west wall, rust staining below both, and a soldier course that's dropped about three-eighths of an inch on one of them. The rest of the house — including the entire first floor and the east wall — is clean. That's a local pattern, tied to two openings on the same elevation. Diagnosis: lintel failure at those two windows, likely rust-driven, on the weather side of the house. That homeowner now knows exactly what to ask a contractor for, and she knows the rest of the house isn't in trouble.

One more diagnostic tool: the tap test. With the heel of your hand or a rubber mallet, tap the brick above the opening and listen. Solid, well-bonded brick rings with a dull, firm thud. Brick that's been pushed loose by rust jacking or is sitting on a failing lintel sounds hollow or rattly. This won't give you a diagnosis by itself, but it confirms what your eyes are telling you, and it's useful for mapping how far the damage extends beyond the visible crack.

Photograph everything before any work begins. Take wide shots of each opening and close-ups of every crack and stain, with a ruler or a coin in the frame for scale. These photos protect the homeowner, and they protect the contractor — they establish the "before" condition that the "after" will be measured against.

By the end of this chapter, you should be able to walk any brick house and sort its openings into three piles: sound, watch, and replace. "Sound" means no symptoms — check again next year. "Watch" means early symptoms — hairline step crack, faint staining — worth monitoring and worth getting a professional opinion on. "Replace" means sagging soldiers, active rust bleed, widened step cracks, or hollow-sounding brick over the opening. Those lintels are done. In the next chapter, we'll get into the mechanism that kills most of them: rust, and why Texas is so hard on steel.

Chapter 3: Rust: The Slow Killer of Steel Lintels in Texas

If lintels had a single enemy, it would be water. And water's weapon is rust. Understanding the rust cycle is the key to understanding why lintels fail in Texas — and why so many replacements fail again. This chapter is the science behind everything else in the book, explained the way you'd explain it standing in a driveway with a homeowner.

Steel rusts when three things come together: iron, oxygen, and water. A steel lintel buried in a brick wall has iron and oxygen in abundance. The only question is water — and in a brick wall, water is always a question, never a guarantee of dryness. Brick is porous. Mortar is porous. Wind-driven rain in a Texas thunderstorm pushes water straight through the face of the wall. That water runs down inside the cavity and across every horizontal surface it finds — including the top of the lintel.

A new steel lintel usually has some protection: a coat of primer, maybe paint. But paint on steel inside a masonry wall lives a hard life. Mortar is alkaline, and fresh mortar can attack paint. The steel expands and contracts with Texas temperature swings — a lintel baking in August sun and freezing in a January north wind moves, and paint films crack. Once the coating fails in even one small spot, water finds the bare steel, and the rust cycle begins. And here's the cruel part: once rust starts under paint, it creeps. The corrosion spreads beneath the coating, lifting it, exposing more steel, in a self-feeding cycle that no surface repaint can stop. Painting over a rusting lintel without addressing the corrosion is like painting over a leak — it looks better for a season, and the damage continues underneath.

Texas makes all of this worse in specific ways. Our clay soils expand and contract with moisture, which moves foundations and opens mortar joints, giving water more paths in. Our storms drive rain horizontally into walls. Our humidity stays high enough, long enough, that a wet lintel doesn't dry out quickly. And our temperature swings — forty degrees in a day isn't unusual — work every joint and coating in the wall. A lintel in a mild, dry climate might last sixty years on a coat of paint. The same lintel in North Texas might be in serious trouble in twenty-five. I've pulled lintels out of twenty-year-old houses that were rusted halfway through, and lintels out of forty-year-old houses that looked almost new. The difference was almost always water management: flashing, weeps, and drainage. Which is why Chapter 9 exists, and why skipping it is the most expensive mistake in lintel work.

Let's talk about what rust actually does inside the wall, because it's worse than most people think. When iron becomes iron oxide, the rust occupies more volume than the steel it replaced — commonly three to seven times the volume, depending on the oxide form. That expansion has

nowhere to go inside a tight masonry wall, so it pushes. It pushes the brick above the lintel upward, the mortar joints apart, and the brick faces outward. This is rust jacking, and it's a slow-motion demolition. The mortar joints around the lintel crack open, which lets in more water, which accelerates the rust, which pushes harder. It's a feedback loop, and it only goes one direction.

Meanwhile, the steel itself is losing cross-section. A lintel that started as a quarter-inch angle with plenty of strength gradually becomes a thin, pitted remnant. At some point the remaining steel can no longer carry the load, and it deflects — that's the sagging soldier course from Chapter 2. In advanced cases the steel perforates entirely, and the brick above is essentially spanning the opening on mortar and hope. I've seen openings where the lintel was so far gone that the only thing holding the brick up was the arching action of the masonry itself — a dangerous situation that can let go without much warning.

There's a particular Texas detail worth knowing: the ends of the lintel. The bearing ends — the parts of the steel that sit in the wall on either side of the opening — are the most vulnerable and the least visible. Water that runs down the inside of the wall collects at the bearing pockets. The ends are also where the paint gets scraped during installation and where mortar packs tight against the steel, holding moisture. When I pull a failed lintel, the middle often looks bad but the ends look worse — paper-thin, flaking, sometimes gone entirely. This is one reason bearing length matters so much (Chapter 8): short bearing puts the weakest part of the steel exactly where the load is highest.

Another Texas detail: galvanized versus painted steel. Some builders use galvanized lintels, where the steel is coated with zinc. Galvanizing is genuinely better protection than paint — the zinc corrodes sacrificially, protecting the steel underneath, and it doesn't peel the way paint does. But galvanizing is not forever. In a wet wall, the zinc layer gets consumed over decades, and once it's gone the steel is on its own. A galvanized lintel in a wall with good flashing and drainage can last a very long time. The same galvanized lintel in a wall with no flashing, sitting in water every time it rains, will still fail — just later than a painted one. The lesson: the coating buys time, but water management buys decades.

What about stainless steel lintels? They exist, they're excellent, and they're expensive — often several times the cost of a galvanized angle. For most residential work in Texas, a properly sized, properly coated, properly flashed galvanized steel lintel is the right balance of cost and longevity. Stainless makes sense in extreme exposure — coastal work, or a historic building where you never want to touch the opening

again. For the houses this book is about, galvanized steel plus real water management is the answer, and that's what the LintelLOCK method specifies.

The takeaway from this chapter is simple and it drives everything that follows: rust is a water problem before it's a steel problem. You cannot beat rust with better steel alone. You beat it by keeping water off the steel — with flashing that sheds water out of the wall, weep holes that let it escape, and detailing that doesn't trap moisture against the metal. Every shortcut replacement that skips the water management is just resetting the rust clock. The LintelLOCK method, which we'll lay out starting in Chapter 5, treats water management as a non-negotiable part of the replacement, not an optional upgrade. Because after fifty years of pulling rusted lintels out of Texas walls, I can tell you with certainty: the steel didn't fail. The detailing failed, and the steel paid for it.

Chapter 4: Why Most Lintel Replacements Fail Again

Here's a number that should bother everyone in this business: a large share of the lintel replacements I get called to fix are second replacements. The first replacement was done five, eight, ten years ago — and it's already failing. The homeowner paid full price, lived through the mess of the job, and now gets to pay again. That is not an industry I want to be part of, and it's the reason the LintelLOCK system exists. This chapter is an autopsy of the common replacement: what usually gets done, what gets skipped, and why the skip is what kills it.

The standard cheap replacement goes like this. A contractor props up the brick over the opening with a couple of jacks or a wood beam, cuts out the old lintel, slides in a new steel angle — often the same size, sometimes whatever was in stock — packs some mortar around it, repaints the visible steel, and repoints the disturbed joints. It looks fine on day one. The brick is level, the paint is fresh, the check clears. And inside the wall, every condition that killed the first lintel is still there, untouched.

Failure mode number one: no flashing. This is the big one, the sin of omission behind most repeat failures. Flashing is a waterproof membrane — in modern work, typically a self-adhering membrane or a metal pan — installed above the lintel to catch water moving down through the wall and direct

it out through weep holes. The original builder often skipped it, especially in tract homes from the 1960s through the 1990s. The replacement contractor skips it again, because installing flashing means opening up more brick above the lintel, and that means more labor, more material, more time. So the new steel goes into the same wet environment that destroyed the old steel. The rust clock restarts at zero, and in Texas weather, zero to failure can be under a decade. A lintel replacement without flashing isn't a repair. It's a postponement.

Failure mode number two: undersized steel. The replacement angle needs to carry the load of the brick above the opening across the span. That load depends on the span width, the height of masonry above, and whether there's a second story or a gable bearing on it. The shortcut is to match whatever was there before — "it was a 3-1/2 inch angle, put a 3-1/2 inch angle back." But the original may have been undersized from day one, which is sometimes why it deflected in the first place. Or the load may have changed — a second story added, a heavier roof. Proper sizing means calculating the actual load and selecting steel that carries it with margin. Chapter 8 covers the sizing logic. The shortcut skips it, and the new lintel starts life already working too hard.

Failure mode number three: short bearing. The lintel has to sit on solid masonry on each side of the opening — that's the bearing, and it needs length. Four inches of bearing per side is a common minimum for residential work; more is better on wide spans. Shortcut replacements often set the new steel on whatever's there, sometimes with barely two or three inches of bearing, sometimes on crumbled mortar that was never cleaned out. Short bearing concentrates the load on a small area, crushes the mortar, and lets the lintel settle — which reads as a sagging soldier course a few years later. And remember Chapter 3: the bearing ends are where rust hits hardest. Short bearing on rust-prone ends is a double weakness.

Failure mode number four: uncoated or poorly coated steel. A raw steel angle — mill finish, no primer — has no business going into a masonry wall in Texas. Yet it happens, because raw angle is cheaper and it's what the steel yard has on the rack. Even primed steel needs the right primer and full coverage, including the ends and the back leg that nobody sees. The shortcut is a quick spray of paint on the visible face after installation, which protects the one part of the steel that was never at risk and ignores the parts that are.

Failure mode number five: mortar mismatch and sloppy relay. When the brick around the opening is disturbed and relaid, the new mortar has to match the old in color, texture, and — critically — composition. Old mortar in Texas homes is often a

softer lime-based mix; new Type S Portland-heavy mortar is harder and stronger than the brick. Hard mortar with soft brick means the brick takes the stress and spalls. The shortcut uses whatever mortar is in the mixer, and the repair is visible forever — a patch of wrong-colored, wrong-textured joints that screams "repair" and sometimes damages the brick around it.

Failure mode number six: no shoring, or reckless removal. Some contractors skip shoring entirely on "small" openings, trusting the brick to arch over the gap while the lintel is out. Sometimes they get away with it. Sometimes the brick above the opening drops, cracks, or collapses — turning a one-day lintel job into a wall rebuild. Others attack the old lintel with a saw or torch with no protection for the surrounding brick, scorching and cracking units that then have to be replaced. Removal is demolition next to finished work, and it has to be treated that way.

Failure mode number seven: ignoring the water source. The lintel rusted because water reached it. Where did the water come from? Sometimes it's just wall absorption — normal. But sometimes there's a specific source: a failed gutter dumping water onto the wall above the window, a missing drip edge, a sprinkler head soaking the brick every morning, a roof valley concentrating runoff at one spot. If the replacement doesn't address the source, the new lintel inherits the same drowning. Part of every LintelLOCK job is looking up, not just at the opening — tracing the water path and fixing what's fixable.

Consider a hypothetical homeowner in Garland. Her 1985 brick home gets a lintel replacement over the garage — a wide span, heavy load, big job. The contractor swaps the steel, paints it, repoints, done in a day and a half. Seven years later the soldier course is sagging again and rust is bleeding. The second contractor — doing it right this time — opens the wall and finds: no flashing, a 3-1/2 inch angle on a span that needed a 5 inch, two inches of bearing on crumbled mortar, and a gutter above that's been overflowing onto the wall for years. The first job didn't fail because lintels are mysterious. It failed because six avoidable shortcuts were taken, and each one is visible in the autopsy.

The economics of the shortcut are worth understanding, because they explain why the shortcut persists. A proper lintel replacement — with shoring, flashing, weeps, sized steel, full bearing, coated ends, matched mortar, and water-source correction — takes real time and real skill. The shortcut takes a day. The shortcut bid is thousands less. Homeowners, quite reasonably, often pick the lower bid — they can't see the difference between the two jobs on bid day, because the difference is all inside the wall. The cheap job

looks identical to the right job for the first three years. Then the bills diverge: the right job is done, and the cheap job is starting over.

This is why Chapter 11 exists — so homeowners know what a real lintel replacement includes and what questions separate a real bid from a shortcut bid. And it's why Chapter 12 exists — so contractors can sell the right job at the right price and build a business on work that doesn't come back. Because work that comes back is the most expensive work there is: it costs you the redo, the reputation, and the referral you would have gotten from a job done right.

The LintelLOCK system is the opposite of the shortcut. It's the complete method — every step the shortcut skips, done in the right order, verified as you go. In the next chapter, I'll lay out the system as a whole: what it is, where it came from, and the principles that hold it together. Then we'll walk through it step by step, and by the end you'll know exactly what "done right" looks like — whether you're hiring it or doing it.

Chapter 5: The LintelLOCK System: A Field-Developed Method

LintelLOCK is my field-developed system for replacing failed lintels so they don't fail again. It wasn't designed in an office. It was built over fifty years of standing on Texas ladders, pulling rusted steel out of walls, and asking a simple question every time: why did this one fail, and what would have stopped it? The system is the accumulated answer — a complete, ordered method where every step exists because skipping it caused a failure I personally saw.

Let me be clear about what LintelLOCK is and isn't. It is a purpose-built replacement method: a defined sequence of inspection, shoring, removal, sizing, bearing, flashing, drainage, mortar matching, and curing steps, with verification checks at each stage. It is field-developed, meaning every part of it was worked out on real jobs, on real houses, under real Texas conditions — not derived from a textbook. It is not a product you buy in a box. It's a way of doing the work, and the name stands for the outcome: a lintel that locks in — sized right, seated right, drained right — and stays locked in.

The system rests on six principles. These aren't slogans; they're the rules that decide every judgment call on a LintelLOCK job.

Principle one: diagnose before you demolish. No steel comes out of a wall until the failure is understood. That means the full inspection routine from Chapter 2, plus the rust and water assessment from Chapter 3, plus the foundation check — is this a lintel problem, a foundation problem, or both? The system includes a written pre-job assessment for every opening: symptoms, measurements, load conditions, water sources, and the replacement specification. If you can't write down why the old lintel failed, you're not ready to install the new one. This is the step that prevents the classic repeat failure, because it forces the water question to be answered before the steel goes in.

Principle two: the opening is a system, not a part. A lintel doesn't work alone. It works with the flashing above it, the weep holes that drain the flashing, the mortar around it, the bearing masonry under its ends, and the water management of the wall above. Replace the steel and ignore the rest, and you've done a part swap, not a repair. LintelLOCK treats the whole opening — steel, flashing, drainage, mortar, bearing, water sources — as one system, and every element gets addressed on every job. That's why the method has more steps than the shortcut. The steps are the system.

Principle three: size for the real load. Every LintelLOCK replacement starts with the actual load calculation: span, masonry height and weight above, any additional loads from floors, roofs, or gables bearing on the wall over the opening. The steel is selected for that load with margin — never matched blindly to what was there, never eyeballed, never "whatever's on the rack." An undersized lintel is a future failure with a paint job. The system doesn't allow it.

Principle four: water gets a vote in every decision. From the flashing membrane above the steel, to the weep holes that drain it, to the coating on the steel itself, to the grading and gutters above the wall — water management is designed into the replacement, not added if there's time. On a LintelLOCK job, the flashing and drainage step is non-negotiable. It's in the name of the chapter for a reason: it's the step everyone skips, and it's the step that decides whether the new lintel lasts ten years or fifty.

Principle five: match the wall. The repair has to belong to the house. Mortar is matched in color, texture, sand, and composition — hard enough to last, soft enough not to damage the brick. Brick is salvaged and relaid wherever possible; replacement units are matched. Tooling matches the existing joint profile. A LintelLOCK repair shouldn't read as a repair from the curb. It should disappear into the wall. This isn't vanity — mismatched mortar is often the wrong mortar, and the wrong mortar damages brick. Matching is both craft and protection.

Principle six: verify at every stage. The system has hold points — moments where work stops and the completed step is checked before the next one begins. Shoring is checked before removal starts. The opening is measured and the steel spec confirmed before the new lintel is ordered or cut. Bearing surfaces are inspected before the steel is set. Flashing is water-tested before brick goes back. Mortar is test-matched before the relay begins. These checks take minutes and prevent the kind of mistakes that take days to fix. A system without verification is just a suggestion.

Where did this come from? The honest answer is: from failures. Early in my career, I did lintel replacements the way everybody did them — out with the old, in with the new, paint it, point it, move on. And then the callbacks started. A job from six years ago with rust bleed again. A soldier course sagging on a replacement I'd set myself. Each callback was an education, and the tuition was my reputation. So I started changing the method: adding flashing when the original had none, sizing the steel instead of matching it, extending bearing, coating the ends, matching the mortar properly, tracing the water. The callbacks stopped. Then something better happened — the houses I'd done right started aging well, and twenty years later those openings still looked like the day I left. LintelLOCK is that method, written down: the complete sequence, in order, with the reasons.

The chapters that follow are the system in detail. Chapter 6 covers planning: the inspection, the measurements, the load assessment, and the materials list. Chapter 7 covers shoring and safe removal — how to hold the wall up and get the old steel out without damaging the brick. Chapter 8 covers sizing, bearing, and setting the new lintel. Chapter 9 covers flashing and drainage. Chapter 10 covers mortar matching and relaying the brick. Each chapter is written so a working mason can follow it as a procedure and a homeowner can follow it as an explanation of what should be happening on their house.

A word on scope: LintelLOCK covers standard residential and light commercial lintel replacement — windows, doors, garage openings in brick veneer and solid masonry walls. It doesn't cover structural redesign, and it doesn't replace engineering judgment where engineering judgment is required. If the opening is unusually wide, if the load is unusual, if the wall is compromised beyond the lintel — that's structural engineer territory, and the system says so explicitly. Knowing the edge of the method is part of the method.

By the time you finish Chapter 10, you'll have the complete procedure. Chapters 11 and 12 put it to work: what homeowners should expect and ask, and how contractors can

build a real business line on work done this way. Let's start with planning — because every good lintel job is won or lost before the first brick comes out.

Chapter 6: Planning the Job: Inspection, Measurement, and Materials

Every good lintel job is won in the planning. The wall work is the visible part, but the decisions that determine whether the replacement lasts are made before a single brick is disturbed: the diagnosis, the measurements, the load assessment, the steel specification, and the materials list. This chapter is the LintelLOCK planning procedure — the paperwork and the tape measure that come before the shoring.

Start with the written pre-job assessment. For each opening getting a replacement, document: the symptoms (from the Chapter 2 routine — step cracks, soldier sag, rust bleed, mortar condition), photographs with scale references, the opening dimensions, the wall construction, and your diagnosis of why the old lintel failed. Write it down. This document becomes the job specification, the material order, and — if anything is ever questioned — the record of what was found and why the specified work was necessary. Contractors: this assessment is also your sales tool. A homeowner who sees a written diagnosis with photos understands what they're buying. A verbal "your lintel's bad" sells nothing.

Measurements come next, and they need to be exact. Measure the clear span — the open distance between the jambs — to the eighth of an inch. Measure the height of masonry above the opening up to the next structural break (a floor line, a roof line, a gable). Note the wall construction: brick veneer over wood frame is the Texas standard, but note the veneer thickness, the cavity width if you can determine it, and anything unusual — stone accents, arches, soldier courses, rowlocks. Measure the existing lintel if any part is visible or measurable: leg size, thickness, and the bearing length on each side. Probe the bearing pockets if you can do it without disturbing the wall — a thin rod or an inspection camera through a mortar joint can tell you whether the bearing masonry is sound or crumbled.

Assess the load. For a standard residential window or door,

the load on the lintel is the weight of the masonry triangle or rectangle above the opening. As a practical field method: calculate the area of masonry above the opening (span times the height of brickwork above, up to the point where the load arches or the next support), multiply by the weight of brick masonry — roughly 120 pounds per cubic foot for brick veneer, which works out to about 40 pounds per square foot of wall face for a standard wythe. Add any concentrated loads: a second-story floor bearing on the wall above, a gable end, a heavy roof overhang. For garage openings — wide spans, often with significant masonry above — the numbers get serious fast, and this is where undersizing happens most. When in doubt, or when the numbers are large, have a structural engineer confirm the sizing. The cost of an engineer's review is trivial next to the cost of a failed wide-span lintel.

Specify the steel. LintelLOCK replacements use galvanized steel angle as the standard — sized for the calculated load with margin, never matched blindly to the old piece. The specification includes: leg dimensions, thickness, length (span plus bearing on both ends), and the coating (hot-dip galvanized). For most residential windows, a 3-1/2 by 3-1/2 by 5/16 inch galvanized angle is a common starting point, but the actual size follows the load — wide spans and heavy loads step up to 4 by 4, 5 by 3-1/2, or heavier sections. Bearing length: minimum four inches per side for residential work, more on wide spans. Write the full spec on the job sheet. "New lintel" is not a specification.

Plan the water management. Identify the flashing approach for this opening: a self-adhering membrane pan above the lintel, lapped and sealed, draining to weep holes at the ends — the standard LintelLOCK detail, covered fully in Chapter 9. Locate where the weep holes will go and confirm they can drain freely. Then look up: trace the water path above the wall. Check the gutters and downspouts over the opening — are they intact, or dumping water onto the brick? Check the roof drip edge. Check sprinkler heads hitting the wall. Note every water source on the assessment, and note the fix — gutter repair, sprinkler redirect, regrading — because the lintel replacement should be coordinated with it. A perfect lintel under a waterfall is still a wet lintel.

Materials list for a standard LintelLOCK replacement: the specified galvanized steel angle, cut to length; self-adhering flashing membrane; weep hole vents or wicks; mortar materials matched to the existing (sand, cement, lime — matched, not generic); salvaged brick plus matched replacement units for any that can't be saved; shoring equipment (adjustable steel posts, beams, and bearing plates — sized for the load, Chapter 7); cutting and grinding consumables; and coating touch-up for any field-cut steel ends

(cold galvanizing compound on cuts, because the cut exposes bare steel).

Schedule and site planning matter too. A standard window lintel replacement is typically a two-to-three-day job: day one for shoring, removal, and setting steel and flashing; day two for relaying brick and initial mortar work; day three for final tooling, cleanup, and inspection — with curing time after. Garage spans run longer. Tell the homeowner the real timeline up front, including the curing period where the new mortar shouldn't be stressed or soaked. Plan dust and debris control: brick cutting makes fine silica dust, and Texas neighborhoods don't appreciate it drifting. Plan brick storage — salvaged brick stacked neatly on pallets, not in a pile on the lawn.

Permits and HOAs: check local requirements before you start. Many Texas municipalities don't require a permit for a like-for-like lintel replacement, but some do, and HOAs often want notice of exterior work. Five minutes of checking beats a stop-work order.

The final planning step is the pre-job walkthrough with the homeowner. Walk the openings together. Show them the assessment — the photos, the measurements, the diagnosis, the spec. Explain what will happen each day, what the wall will look like mid-job (openings look alarming with the brick out — warn them), and what the finished work will look like. Set the expectation that the repair will disappear into the wall. This walkthrough is where trust is built, and trust is what gets you paid on time and referred to the neighbors.

Planning is the cheapest part of the job and the most valuable. An hour with a tape measure, a camera, and a written assessment prevents the failures that cost thousands. The shortcut skips planning and pays for it in callbacks. LintelLOCK plans first, and the wall work that follows is just the plan being executed. In the next chapter, we pick up the tools: shoring the wall and getting the old steel out safely.

Chapter 7: Shoring and Safe Removal

This is the chapter where respect for the work matters most. You're about to remove the piece of steel holding up hundreds or thousands of pounds of brick. Everything above that opening — every course of brick, every pound of it — has to be supported by something else while the lintel is out. That something is shoring, and this chapter covers how to do it

right and how to get the old steel out without damaging the wall you're trying to save.

The principle is simple: never remove support before the replacement support is carrying the load. In practice, that means the shoring goes up first, it's verified — actually verified, not glanced at — and only then does the old lintel get touched. This is a hold point in the LintelLOCK system: work stops, the shoring is checked, and removal begins only after the check passes.

For a standard residential window or door opening, the shoring setup is straightforward. Adjustable steel posts — the screw-jack type, rated for the load — stand on firm, level bearing: a concrete slab, a wood sill on firm ground, never bare dirt that can settle. A horizontal beam — a wood timber or steel beam, sized for the span — runs across the opening under the posts' top plates, positioned to carry the masonry above. The posts are snugged up until the beam bears firmly against the underside of the brickwork above the opening, taking the load off the lintel. You're not jacking the wall up — you're catching it. The goal is to relieve the lintel, not to lift the brick. Lifting brick that has settled onto a failed lintel can crack mortar joints and cause exactly the damage you're trying to prevent. Snug, not lifted. Then check: push on the setup, look for movement, confirm every post is plumb and every bearing is solid.

Wide spans — garage openings especially — need more. A garage lintel can carry several thousand pounds of brick. Shoring a garage opening typically means multiple posts, a heavier beam, and sometimes a needle-beam arrangement where beams pass through the wall to carry the load from both sides. This is also where the structural engineer earns their fee: if the span is wide and the load is heavy, have the shoring plan reviewed. A collapsed garage header is not a learning experience you want. The cost of caution here is a few hundred dollars. The cost of failure is a wall on the ground.

With the shoring verified and carrying the load, removal begins. The old lintel is coming out, but the brick around it is staying — most of it, anyway. Removal is surgical demolition: take what's necessary, protect everything else. Start by cutting the mortar joints around the section of brick that must come out to free the steel. A grinder with a diamond blade or a mortar saw, used with a steady hand, cuts the joints without hammering the brick. Work clean: score the joints, then ease the brick out. Every brick you save intact is a brick that goes back in, matched perfectly because it IS the original.

The amount of brick removed depends on the lintel and the flashing plan. At minimum, the soldier course (or the first

course above the opening) comes out to free the steel. For the LintelLOCK flashing detail, you'll open enough courses above the lintel to install the membrane pan properly — typically two to three courses. Yes, this is more brick out than the shortcut removes. That's the point. The flashing can't be installed through a slot; it needs working room, and working room means brick out, done carefully, stacked for relay.

Cutting the old steel: once the surrounding brick is opened, the lintel is usually freed by cutting it into sections with a reciprocating saw or cutoff wheel and working the pieces out. Protect the surrounding brick from sparks and heat — a steel cutting torch has no place this close to finished masonry unless there's no alternative, and even then with full shielding. If the old lintel is rust-jacked tight into the wall, don't force it. Cut it smaller, work patiently, and let the steel come out in pieces rather than tearing the bearing pockets apart getting it out whole. The bearing pockets — the slots in the masonry where the lintel ends sit — need to be intact and clean for the new steel. Destroying them during removal creates repair work that wouldn't have existed.

As the old steel comes out, inspect it. This is the autopsy, and it's part of the system: look at where the rust was worst, measure the remaining section thickness at the middle and at the ends, note the bearing length that was actually there, and check whether any flashing existed. Compare what you find to the pre-job assessment. This confirms the diagnosis and — for contractors — it's powerful documentation. Photograph the removed lintel next to a tape measure. Homeowners understand a photo of paper-thin rusted steel in a way no verbal explanation can match.

Clean the opening thoroughly. The bearing pockets get cleaned out to solid masonry — all loose mortar, rust scale, and debris removed. The cavity above the opening gets cleared of mortar droppings and debris that would block drainage. The shoring stays up through all of this. It stays up until the new lintel is set, bearing on solid masonry, with the load transferred back onto it. That's the next chapter's work, but the rule is stated here because it's the rule that prevents disasters: the shoring comes down last, after the new lintel is carrying the wall, not before.

Dust control deserves a paragraph. Cutting mortar joints and steel generates fine dust — silica from the mortar, metal particulate from the steel. On an occupied home, seal the interior side of the opening: tape plastic over the window or door from inside, and warn the homeowner to keep it sealed until the dusty work is done. Outside, work with the wind in mind, wet-cut where practical to suppress dust, and clean as you go. A job site that respects the homeowner's air and landscaping is a job site that gets referred.

Safety gear is non-negotiable: eye protection, respirator for cutting dust, gloves, hearing protection around the saws. Steel sections are heavy and sharp — a cut lintel section can weigh more than it looks and the cut edge will slice a hand open. Handle steel like it wants to hurt you, because it does.

By the end of this stage, you have: a shored opening with the load safely carried, the old steel out and documented, clean bearing pockets in solid masonry, a cleared cavity ready for flashing, and salvaged brick stacked and ready for relay. The wall is stable, the evidence is recorded, and the opening is ready for the new lintel. In the next chapter, we set it: sizing confirmed, bearing prepared, steel placed, and the load transferred back where it belongs.

Chapter 8: Sizing, Bearing, and Setting the New Lintel

The opening is shored, the old steel is out, the bearing pockets are clean. Now the new lintel goes in — and this is where the LintelLOCK method earns its name. Sizing, bearing, and setting are the three decisions that determine whether the new lintel carries the wall for fifty years or starts failing in ten. Get these right and the rest of the job is craft. Get them wrong and no amount of pretty mortar work will save it.

Sizing starts with the load calculation from Chapter 6, now confirmed against the opened wall. With the brick out, you can see exactly what's above the opening: the true height of masonry, any structural elements bearing on the wall, the actual conditions. Verify the numbers. If anything differs from the plan — more masonry than expected, a floor joist bearing where you didn't expect one — recalculate before the steel is cut. Steel is cheap compared to callbacks, but only if you cut the right steel.

The LintelLOCK sizing rule is straightforward: select a galvanized steel angle whose capacity exceeds the calculated load with comfortable margin, and never default to matching the old size. In practice, residential window and door lintels in Texas commonly land on 3-1/2 by 3-1/2 by 5/16 inch or 4 by 4 by 5/16 inch galvanized angles, with wider spans and heavier loads stepping up to 5-inch legs or heavier thicknesses. Garage openings — the big spans — often need substantially heavier sections, and this is exactly where the old "match what was there" habit does its damage, because the original

garage lintel was frequently undersized from day one. When the span is wide or the load is heavy or anything is unusual, a structural engineer confirms the selection. Write the final spec on the job sheet: leg size, thickness, length, coating. Then verify the delivered steel against the spec before it goes in the wall. Wrong steel in the wall is a failure you've paid for.

Length is span plus bearing, and bearing is the part most people underthink. The lintel must extend into solid masonry on each side of the opening far enough to transfer the load without crushing the mortar or splitting the brick. Four inches of bearing per side is the LintelLOCK minimum for standard residential openings; wide spans and heavy loads get more — six inches, eight inches, whatever the load and the masonry require. Measure the bearing pockets you cleaned in Chapter 7 and confirm they give you the specified bearing on solid, sound masonry. If the pocket masonry is soft or damaged, repair it first: cut out the bad material and rebuild the bearing area with solid masonry and proper mortar, cured before the steel is set. Setting a new lintel on crumbled bearing is one of the shortcut failures from Chapter 4, and it's inexcusable once you've seen the inside of the wall.

Coating check before installation: the steel should be hot-dip galvanized, full coverage, including the back leg and both ends. Field cuts — and there will be field cuts, because stock lengths get trimmed to the specified length — expose bare steel, and bare steel in a masonry wall is a rust starter kit. Every cut end gets treated with cold galvanizing compound, applied per the product directions, full coverage, before the steel goes in. This takes ten minutes. Skipping it plants a rust seed at the most vulnerable part of the lintel. The system doesn't skip it.

Setting the lintel is careful work, not heavy work. The steel is placed into the bearing pockets level and true — check with a level in both directions. The vertical leg goes against the back of the brick wythe (in veneer construction, tight to the sheathing side with the proper cavity maintained); the horizontal leg supports the first course of brick. Pack the bearing pockets with mortar — full, solid packing, no voids. Voids under the bearing are future settlement: the lintel compresses the void, the steel drops a fraction, and the soldier course follows it. Pack it tight, and tool the mortar at the pocket faces.

Shims and adjustment: if the opening needs the lintel at a precise height to match existing coursing, stainless or galvanized shims — never plain steel, never wood — can be used at the bearing. Keep shimming minimal and fully mortared. The goal is the steel sitting solid, level, and fully supported on both ends.

Now the hold point: before any brick goes back, the set lintel is verified. Level? Bearing length correct on both sides per the spec? Bearing pockets fully packed? Cut ends coated? Photos taken? This verification takes five minutes and it's the last moment when everything is visible and fixable. Once brick and mortar close up the wall, the steel disappears for the next fifty years. Make sure it's right before it disappears.

Load transfer comes after the flashing and the first courses are back (Chapters 9 and 10), but the principle is stated here: the shoring stays up until the new lintel is set, the bearing mortar has taken its initial set, and the relaid brick above is in place. Only then is the load eased back onto the new lintel — gradually, watching for any movement, any cracking, any sign the bearing is compressing. If anything moves, stop and find out why before the shoring comes down. A quarter inch of settlement at transfer is a problem caught early. The same quarter inch discovered a year later is a callback.

Consider a hypothetical contractor in Plano replacing a garage lintel on a two-story brick home. The old lintel was a 3-1/2 inch angle on a sixteen-foot span with three inches of bearing — undersized and under-bearinged, which is why it failed. The LintelLOCK spec calls for a heavier angle, sized for the actual masonry load above, with six inches of bearing per side on rebuilt solid pockets, galvanized, cut ends coated. The material cost difference between the shortcut steel and the right steel is a couple hundred dollars. The labor to do the bearing right is a few hours. The difference in outcome is a lintel that holds for decades versus one that's sagging again before the homeowner's kid graduates. That's the economics of sizing and bearing: small money up front, enormous money later.

With the steel set and verified, the opening has its backbone back — stronger than the original, seated on solid bearing, coated against rust. But steel alone isn't the system. The water management comes next, and it's the step that protects everything you just installed. In Chapter 9, we build the part of the wall that keeps the new lintel dry for the rest of its life.

Chapter 9: Flashing and Drainage: The Water Step Everyone Skips

If you take one thing from this book, take this: a lintel replacement without flashing and drainage is not a complete job. It's the step the shortcut skips, it's the reason most

replacements fail again, and it's the heart of what makes LintelLOCK different. This chapter covers the water management detail — the flashing pan, the weep holes, and the drainage path — that keeps the new steel dry for decades.

First, the concept. Water gets into brick walls. That's not a defect; it's physics. Brick and mortar are porous, wind drives rain into the face, and water migrates down through the wall by gravity and capillary action. A well-built wall doesn't try to stop all water at the surface — it manages the water inside. Flashing is the management: a waterproof barrier placed in the wall at critical points to intercept descending water and direct it back out. Above a lintel is one of the most critical points, because the lintel is a horizontal steel shelf sitting right in the water's path.

The LintelLOCK flashing detail works like this. Above the new steel lintel, a continuous pan flashing is installed across the full width of the opening and extending past the jambs on both sides. The pan is formed or lapped so its outer edge turns down and out — directing water toward the face of the wall — and its ends are detailed to prevent water from running off the sides into the jamb masonry. Below the pan's outer edge, at the level just above the lintel, weep holes are left open in the vertical mortar joints — typically every 24 inches or so, and at minimum near each end. Water that the pan collects runs to the outer edge and exits through the weeps. The steel below stays dry. That's the whole idea, and it's the difference between a lintel that rusts and one that doesn't.

Material choice: modern self-adhering flashing membranes — the peel-and-stick type designed for masonry — are the LintelLOCK standard for residential work. They're waterproof, they bond to the masonry, they conform to irregular surfaces, and they don't corrode. Metal pan flashing (copper or stainless) is the premium option — longer-lived, more expensive, and the right choice for high-end or historic work. What doesn't belong: felt paper, which deteriorates; thin plastic sheeting, which punctures; and nothing at all, which is the shortcut. Lap all membrane joints shingle-style — upper laps over lower — so water sheds across the laps instead of into them. Seal laps per the manufacturer's directions. Extend the pan past the opening on both sides so water can't curl around the ends.

Installation sequence matters. The flashing goes in after the new lintel is set (Chapter 8) and before the brick courses above are relaid (Chapter 10). With the upper courses still open from the removal stage, you have working room — this is why the system opens two to three courses above the lintel instead of trying to thread flashing through a slot. Lay the membrane across the opening, dress it down over the back of

the lintel's vertical leg, form the pan with its outer edge turned to drain outward, and extend and seal the ends. Then, as the brick is relaid in the next chapter, the weep holes are formed by leaving selected vertical joints open — clean, unobstructed openings, not mortar-smeared slots. Weep vents or wicks can be inserted to keep the openings clear and keep insects out while letting water escape.

Then test it. This is a LintelLOCK hold point, and it's simple: with the flashing in and the brick partially relaid, run water down the wall above the opening — a hose on a gentle spray, not a pressure washer — and watch the weep holes. Water should appear at the weeps and drain freely. If it doesn't, find out why before the wall is closed: a blocked weep, a pan lapped backward, a low spot ponding water. Five minutes with a hose verifies the most important invisible part of the job. The shortcut never tests because the shortcut never installs. You install, and you test.

Weep hole placement deserves care. Weeps go in the vertical (head) joints, not the horizontal (bed) joints — head joints drain the pan; bed joints would just fill with mortar. Space them to drain the full pan width, keep them clear of mortar droppings during the relay (a small piece of foam or a weep vent holds the opening), and make sure the exterior opening is clean and visible in the finished wall. A weep hole buried in mortar smear is not a weep hole. Homeowners should know what weeps look like — small open vertical joints above the lintel — so they don't caulk them shut during a weekend maintenance spree. Caulked weeps are a depressingly common way a good flashing job gets defeated years later. Tell the homeowner. Put it in writing.

Now the water sources above the wall — the part of water management that isn't in the wall at all. Walk up and look: gutters, downspouts, drip edges, roof valleys, sprinklers. A gutter that's overflowing directly above a window will defeat any flashing detail through sheer volume — flashing manages wall moisture, not a waterfall. If the assessment (Chapter 6) identified a source, fix it as part of the job or coordinate the fix: rehang or replace the gutter section, extend the downspout, redirect the sprinkler head, correct the grading that's ponding water against the wall. The lintel system includes the water path, and the water path starts at the roof.

Consider a hypothetical homeowner in Mesquite with a recurring lintel problem over the kitchen window — replaced once already, failing again. The LintelLOCK assessment finds no flashing (both times), and a roof valley that concentrates runoff onto the wall directly above the window every time it storms. The proper job installs the flashing pan and weeps, and adds a simple gutter diverter at the valley to break up the concentrated flow. The lintel gets its dry environment; the

wall gets its water load reduced. Either fix alone would have been incomplete. Together, they're the system.

A note on existing walls that never had flashing: this is the norm in Texas tract construction from the 1960s through the 1990s, not an anomaly. Don't let "the original didn't have it" become a reason to skip it. The original failed — that's why you're here. The replacement is the opportunity to build the detail the builder omitted, and it's the single highest-value upgrade in the entire job. When a homeowner asks what they're getting for the higher bid, the flashing pan with tested weeps is the answer you can point to — even though it'll be invisible in the finished wall.

With the steel set and the water managed, the opening is structurally sound and dry. What remains is the visible craft: relaying the brick so the repair disappears, matching the mortar so the wall reads as one. That's Chapter 10 — the part of the job the homeowner actually sees, and the part where craftsmanship shows.

Chapter 10: Mortar Matching and Relaying Brick

This is the chapter the homeowner watches. The steel is in, the flashing is tested, the weeps are open — all invisible. Now the brick goes back, and the quality of this work is what the homeowner sees every day for the next thirty years. Mortar matching and relaying are where craftsmanship shows, and where the shortcut's sloppiness is most visible. The LintelLOCK standard is simple: the repair disappears into the wall.

Start with the brick. During removal (Chapter 7), the brick was salvaged, cleaned, and stacked. Now it's inventoried: count the salvaged units, inspect each one, and set aside any that are cracked, spalled, or damaged beyond use. Salvaged brick is always the first choice for the relay — it's the exact unit, the exact color, the exact weathering. For units that can't be reused, replacements must be matched: same size, same color range, same texture. Take a salvaged brick to the supplier and match it in daylight, not under warehouse fluorescents. Texas brick varies enormously — the orange-reds of one manufacturer, the dark flashed tones of another, the sandy textures common in DFW — and a wrong brick in a relay is visible forever. Buy a few extra. Running short mid-relay is how mismatched patches happen.

Mortar matching is the soul of the relay, and it's a skill worth developing properly. The goal is a match in four dimensions: color, texture, composition, and joint profile. Color comes from the sand and the cement: the sand's color and grain drive the mortar's tone more than anything. Collect sand samples and compare them dry and wet against the existing mortar — mortar lightens as it cures, so judge the match on cured test joints, not wet mortar in the pan. Texture comes from the sand grain — coarse sand gives an open, grainy joint; fine sand gives a smooth one. Rub the existing mortar and look at it with a magnifier if you need to. Composition is the critical invisible dimension: old Texas mortar is often lime-rich and relatively soft. New mortar must be compatible — a hard, Portland-heavy Type S joint against soft historic brick concentrates stress in the brick and causes spalling. Match the hardness to the wall, not just the color to the eye. When in doubt, go softer. A slightly soft joint weathers gracefully; a too-hard joint damages brick.

The procedure: before the relay begins, mix small test batches and lay test joints — on a spare brick, or in an inconspicuous spot on the wall. Let them cure for several days and compare in daylight. Adjust the sand, adjust the pigment if pigment is needed (mineral pigments, sparingly — they can look flat if overused), and test again. Only when the cured test joint disappears against the existing mortar do you mix for the relay. This is a hold point in the system: no relay begins on an untested mortar match. The shortcut mixes whatever's in the truck and hopes. Hope is not a matching strategy.

Relaying technique: the brick goes back in its original coursing — same bond pattern, same joint width, same alignment. The soldier course over the opening sits on the lintel's horizontal leg with a full mortar bed — solid, no voids. Keep the cavity clear behind the relay: mortar droppings in the cavity bridge the drainage path and can block the flashing pan's drainage. Work clean, and check the weep holes as you go — every weep formed in Chapter 9 must remain open through the relay. It's embarrassingly easy to smear a weep shut with a careless trowel pass. Check each one before moving on.

Joint tooling must match the existing profile. Look at the wall: are the joints concave (the most common), flush, raked, or V-tooled? Tool the new joints to the same profile, at the same depth, with the same finish. Tooling is done when the mortar has firmed up — thumbprint hard — not when it's wet and not when it's fully set. Too early and the joint smears; too late and it won't take the profile. On a Texas summer day, that window can be short. Work in sections you can tool in time, and keep the wall shaded if you can.

Curing is the part everyone rushes, and rushing it is how good

mortar goes bad. Fresh mortar needs moisture to cure properly — the cement hydrates over days, and if the joint dries too fast in Texas heat and wind, the surface cures weak and powdery while the inside stays soft. Mist the new joints lightly with water during the first day or two in hot weather — a fine spray, not a soaking — and protect the work from direct blasting sun if possible. Keep foot traffic and vibration away from the fresh relay. And keep water off the new mortar in the other direction too: no hose, no sprinkler, no rain if you can tent it, for the first 48 hours. Mortar that's washed out before it sets is mortar that has to be cut out and redone.

Cleanup during the relay, not after: mortar smears on brick faces should be wiped while they're fresh — a damp sponge, light touch, before the mortar sets. Once mortar smears cure on the brick face, removal means acid or abrasion, both of which damage the brick and the joint. The finished wall should show clean brick faces and uniform joints, with no haze, no smears, no evidence of the work except the weep holes doing their quiet job.

The final relay check: step back to the curb. The opening should read as undisturbed wall — coursing straight, joints uniform, color matched, soldier course level. Walk up close: joints tooled to match, weeps open and clean, no smears, no damage to adjacent brick. Photograph the finished opening the same way you photographed it before the job — same angles, same scale references. The before-and-after pair is the record of the work, and for contractors, it's the portfolio piece that sells the next job.

Consider a hypothetical homeowner in Richardson with a 1970s home and distinctive dark flashed brick. The shortcut bid would have relaid the opening in whatever red brick was on the truck, with gray Type S mortar and flush joints against the home's concave tooled originals — a visible patch screaming "repair" from the street, and mortar hard enough to eventually spall the surrounding brick. The LintelLOCK relay salvages the original units, matches the mortar in color and composition, tools concave to match, and disappears. The homeowner's neighbor, looking at the finished wall, can't tell work was done. That invisibility is the product. It's what the homeowner paid for, whether they articulate it or not.

With the brick relaid, the mortar curing, and the wall reading clean, the structural and craft work is done. What remains is the business of finishing: the final inspection, the homeowner walkthrough, and the documentation that closes the job. But before we get to project closeout, there are two audiences this system serves, and they each need their own chapter: the homeowner hiring the work, and the contractor building a business on it. Chapter 11 speaks to the homeowner: what the job should cost, how long it should take, and how to tell a real

Chapter 11: The Homeowner's Guide: Cost, Timeline, and Hiring Right

If you're a homeowner reading this book, the previous chapters gave you something most homeowners never get: a complete understanding of what's inside your walls and what a proper lintel replacement involves. This chapter turns that knowledge into power — the power to hire right, to recognize a real bid, and to know what the job should cost and how long it should take. A knowledgeable customer gets better work. That's not a slogan; it's the most reliable quality-control mechanism in construction.

First, what should a proper lintel replacement include? Use this as your checklist when comparing bids. A complete job includes: a written diagnosis with photos of each opening; exact measurements and a steel specification (size, thickness, length, galvanized); proper shoring before any removal; careful removal that salvages your brick; new galvanized steel, sized for the actual load — not matched to the old piece; full bearing on solid masonry (four inches per side minimum); coated cut ends; flashing above the lintel with weep holes; a water test of the drainage; mortar matched in color, texture, and composition; your original brick relaid; joints tooled to match; proper curing; and a final walkthrough with before-and-after photos. If a bid doesn't mention flashing, steel sizing, or mortar matching, it's not a lower price for the same job — it's a different, lesser job. Chapter 4 showed you what that lesser job costs in the long run.

What should it cost? Honest answer: it varies widely by region, opening size, and conditions, and anyone who quotes you a firm number without seeing your wall is guessing. But you deserve ranges so you can sanity-check bids. A standard single window or door lintel replacement, done completely — shoring, galvanized steel, flashing, weeps, matched mortar, relay — typically runs in the low-to-mid thousands of dollars in the Texas market. Wide spans like garage openings run substantially more, because the steel is heavier, the shoring is more involved, and the brickwork area is larger. Multiple openings are often priced per opening with some efficiency discount. What should make you suspicious: a bid

dramatically below the others. The shortcut job from Chapter 4 is cheaper because it skips the flashing, the sizing, the bearing work, and the mortar matching — the parts you can't see on bid day. A bid that's half the price isn't a bargain; it's a postponement with a paint job. Conversely, the highest bid isn't automatically the best — ask every bidder the same questions and compare what's actually included.

How long should it take? A standard window or door opening is typically a two-to-three-day job: shoring and removal and steel-setting on day one, relay and mortar work on day two, tooling and final inspection on day three — plus a curing period where the new mortar shouldn't be stressed. Garage spans take longer. Weather can extend the timeline; mortar doesn't like freezing temperatures or driving rain. A contractor who promises a full, proper replacement "in a few hours" is telling you which steps they're skipping.

The questions to ask every bidder — and the answers that mark a professional:

"What's your diagnosis of why this lintel failed?" You want specifics: rust, undersized steel, no flashing, short bearing, water source. "It's just old" is not a diagnosis.

"What size steel are you specifying, and how did you size it?" You want a size, a thickness, and a reference to the actual load — span, masonry above. "Same as what's there" is the shortcut answer.

"How much bearing will the new lintel have?" You want a number — four inches per side minimum — and a plan for the bearing pockets.

"Are you installing flashing and weep holes?" The answer must be yes, with a description of the detail. A no, a hedge, or a blank stare is disqualifying.

"How will you match my mortar?" You want to hear about test joints, sand matching, and composition — not "we'll get it close."

"Will you salvage my brick?" The answer should be yes, with a plan for matching replacements for any units that can't be saved.

"How do you shore the opening?" You want to hear about posts and beams, verified before removal — not "the brick will hold itself."

"What's your curing process?" You want to hear about moisture protection and time — not "it'll be fine by tomorrow."

"Can I see photos of your previous lintel work, before and after?" A professional has them. An evasive answer tells you everything.

Red flags that should stop the conversation: no written bid; a bid that's dramatically lower with no explanation of what's included; pressure to decide today; no mention of flashing; "we don't need to shore that"; cash-only with no receipt; no photos of past work; unwillingness to put the steel spec in writing. Any one of these is enough to keep looking. Your house is the collateral — hire like it.

During the job, your role is straightforward: stay out of the work area, keep kids and pets clear, and let the crew work. But stay engaged: ask for the mid-job photos (the open wall, the new steel set, the flashing before the brick goes back), confirm the weep holes are open before the final payment, and do the final walkthrough in daylight — morning or afternoon sun raking across the wall shows every flaw and every triumph. Check the soldier course with a level if you like. Look at the mortar match from the curb. Verify the weeps are open, not caulked, not smeared. Then pay promptly. Good contractors remember good customers, and prompt payment is the foundation of every referral relationship.

After the job: don't caulk the weep holes (worth repeating — it's the most common way homeowners accidentally defeat a good flashing job). Keep sprinklers off the new mortar for the first weeks. Watch the wall through the first few rains — check that water exits the weeps and doesn't stain below the opening. And keep your documentation: the written assessment, the steel spec, the before-and-after photos. If you ever sell the house, that file is worth real money — it proves the work was done right, by whom, and to what specification.

Consider a hypothetical homeowner in Dallas comparing two bids for a window lintel replacement. Bid A is \$1,800: one day, new steel, paint, repoint. Bid B is \$3,400: written diagnosis with photos, specified galvanized steel sized for the load, shoring, flashing with weeps and a water test, mortar test-matched, brick salvaged and relaid, three days plus curing, before-and-after documentation. Bid A is cheaper today. Bid B is the only one that fixes the problem — Bid A is the shortcut from Chapter 4, and in seven years it'll be Bid A again, plus the cost of the damage the second failure caused. The homeowner who read this book picks Bid B, and never pays for the same opening twice.

You now know what right looks like. In the final chapter, we turn to the other side of the transaction: the contractor who wants to do this work properly and build a business on it. Because the industry needs more of them, and the

Chapter 12: The Contractor's Playbook: Running Lintel Work Like a Business

Everything in this book so far has been about doing the work right. This chapter is about building a business on it — because the best method in the world doesn't pay the bills unless you can sell it, price it, deliver it, and turn one good job into the next ten. Lintel work, done to the LintelLOCK standard, is one of the best business lines in masonry. Here's the playbook.

The market is enormous and mostly invisible. Almost every brick home in Texas has lintels. A huge percentage of homes built between the 1960s and the 1990s have lintels with no flashing, marginal sizing, and decades of rust underway. Most homeowners don't know what a lintel is until it fails — which means the demand is latent, not advertised. Your job as a contractor is to make the invisible visible: to show homeowners the problem they have and the solution you offer. The diagnostic routine in Chapter 2 is your sales process. Walk a house, document the openings, show the homeowner the photos — the step crack, the rust bleed, the sagging soldier course — and the sale makes itself. You're not selling fear; you're showing evidence. There's a difference, and homeowners feel it.

Positioning: don't compete with the shortcut on price. You will lose, and you'll deserve to — the shortcut is cheaper because it's less. Compete on the complete job. Your bid package should include the written assessment with photos, the steel specification, the flashing detail, the mortar-matching process, the timeline, and the documentation the homeowner receives. When a homeowner compares your thorough, documented bid against a one-line "replace lintel" quote, the difference is obvious — if you've educated them. Chapter 11 is literally the education; some contractors hand this book to prospects. An educated customer buys the right job. Your marketing should educate first and sell second: short videos showing rusted lintels coming out of walls, before-and-after photos of invisible repairs, plain explanations of flashing and weeps. Every piece of content should teach the homeowner

something and demonstrate that you know the work.

Pricing the LintelLOCK job: price the complete method, with real margins, and don't apologize for it. Your costs include the site visit and assessment, shoring equipment (owned or rented), the specified galvanized steel, flashing membrane and weeps, matched mortar materials, replacement brick as needed, labor for the full multi-day sequence, and the documentation package. Price per opening, with the garage spans priced as the substantial jobs they are. Build in margin for the unknowns — opened walls sometimes reveal surprises, and a fixed bid should carry contingency. And never, ever shave the flashing or the mortar matching to hit a price. Those are the parts that make the job yours. Cut them and you're the shortcut with better marketing.

The callback economics are the core of the business case. A shortcut contractor prices low, does fast work, and eats callbacks — free rework, angry customers, dead referrals. A LintelLOCK contractor prices the complete job, does it once, and the phone rings with neighbors. One invisible, lasting repair on a street is worth more than any advertising, because every neighbor with the same builder, the same brick, and the same missing flashing is a future customer. Track your jobs: photograph every opening before, during, and after; keep the assessments on file; follow up at one year with a quick check-in. That follow-up call costs you ten minutes and generates referrals for a decade.

Crew training: the system only works if the crew works the system. Train every person who touches a lintel job on the full sequence — not just their piece. The laborer who cleans bearing pockets needs to understand why voids matter. The tender mixing mortar needs to understand why the test joint comes first. Use the hold points from the earlier chapters as training checkpoints: shoring verified before removal, steel spec confirmed before cutting, flashing water-tested before relay, mortar test-matched before mixing. New crew members shadow the full job before they do a step solo. And document the training — a crew that can explain the method to a homeowner is a crew that sells the next job while doing the current one.

Equipment and materials: own your shoring gear — adjustable posts, beams, plates — because rented shoring on a schedule is a bottleneck. Stock the common galvanized angles, but order specified steel per job; the spec follows the load, not the inventory. Keep flashing membrane, weep vents, cold galvanizing compound, and mortar-matching sands on hand. The contractors who do this work efficiently are the ones who don't lose half a day to supply runs mid-job.

Documentation is a product, not overhead. Every LintelLOCK

job delivers: the pre-job assessment with photos, the steel specification, mid-job photos (open wall, set steel, flashing, water test), the mortar match record, finished photos, and a written summary of what was done with care instructions (don't caulk the weeps, keep sprinklers off the fresh mortar). This package costs you an hour of organization and it's worth more than any warranty verbiage — it's proof. Homeowners file it, show it to neighbors, and hand it to buyers when they sell. It also protects you: if anything is ever questioned, the record shows what was found and what was done.

Warranties: offer a meaningful one, because the method earns it. A workmanship warranty on a LintelLOCK replacement — covering the installation, the flashing, the mortar work — for a term you're comfortable standing behind, stated in writing, with the exclusions stated too (foundation movement, for example, is a different trade's problem — say so). The shortcut contractor can't offer a real warranty because the shortcut fails. Your warranty is a competitive weapon, and honoring it without argument is a reputation engine.

Growth path: lintel work leads naturally to adjacent work. The crew that's expert at opening walls, matching mortar, and relaying brick is a crew that can do repointing, brick replacement, chimney repair, and full wall rebuilds. The diagnostic walk that finds lintel problems also finds the other masonry issues on the house. Quote them honestly, sequence them sensibly, and one lintel job becomes a whole-house masonry relationship. And the commercial side — strip centers, office buildings, apartment complexes with brick veneer — runs on the same method at larger scale, with property managers who buy on documentation and reliability. The system scales because the principles don't change with the size of the wall.

Consider a hypothetical contractor in Fort Worth who commits to the LintelLOCK method. Year one, he does forty lintel jobs, documents every one, follows up at a year, and hands this book's homeowner chapter to every prospect. Year two, half his work is referrals from year one's streets — neighbors with the same houses and the same failing lintels, calling him by name. His bids are never the cheapest and his close rate climbs anyway, because educated customers buy the complete job. His callbacks approach zero, because the method doesn't produce them. That's not a fantasy; it's what happens when the work is right and the business is built on it. The method is the marketing. The documentation is the sales force. The finished wall is the advertisement.

This book gave you the complete system — diagnosis, rust science, the shortcut autopsy, the six principles, and the step-by-step method from planning through curing, plus the

homeowner's guide and this playbook. In the Conclusion, we'll pull it together: what the LintelLOCK system means for your house, your business, and the walls of Texas.

Conclusion

Every brick house in Texas is held together by parts nobody thinks about — and the lintel is chief among them. It carries the wall over every window and door, silently, for decades, until water and rust and time do their work and it starts to fail. By the time most people learn the word "lintel," they're looking at a crack, a stain, or a sagging row of brick, and they're about to make the most expensive decision in the whole story: who fixes it, and how.

This book was written to make that decision an informed one. You now know what a lintel does and why it matters. You can read a wall — step cracks, sagging soldier courses, rust bleed — and separate a lintel problem from a foundation problem. You understand the rust cycle and why Texas is so hard on steel. You've seen the autopsy of the shortcut replacement and you know exactly which skipped steps cause the repeat failures. And you have the complete LintelLOCK method: diagnose before you demolish, treat the opening as a system, size for the real load, give water a vote in every decision, match the wall, and verify at every stage — from planning and shoring through removal, setting, flashing, drainage, mortar matching, relay, and curing.

The thread running through all of it is simple: the steel didn't fail on its own. It failed because water reached it, because the sizing was wrong, because the bearing was short, because the flashing was never installed, because nobody traced the water path. Every one of those is a decision — and decisions can be made correctly. The LintelLOCK system is fifty years of learning which decisions matter, written down in order, so the next lintel doesn't pay for the last one's mistakes.

If you're a homeowner, the action is straightforward: walk your house with Chapter 2's routine, sort your openings into sound, watch, and replace, and when you hire, hire the complete job. Ask the questions in Chapter 11. Demand the flashing, the steel spec, the mortar match, and the documentation. The cheapest bid is the most expensive repair you'll ever buy if it has to be done twice.

If you're a contractor, the action is a business decision: stop competing with the shortcut on price and start competing on the complete method. Document everything, educate every customer, warranty the workmanship, and let the finished walls sell the next job. The contractors who do this work right

don't chase work — it finds them, one street at a time.

Lintels are the unseen backbone of every brick wall. Build them right — sized right, seated right, drained right — and they disappear back into the wall for another fifty years, doing their job in silence. That's what LintelLOCK means. That's the system. And now it's yours.

Resources & Next Steps

If this book helped you read your walls, the next step is a professional set of eyes on the openings that concern you — or a deeper education in the trades this system touches. These are the companies behind the LintelLOCK method and the related field-developed systems referenced in this book:

> **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.

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> - **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 related reading: Lintels Under Load covers the structural side of lintel behavior in greater depth, and The Mortar Matcher's Playbook is the companion volume on mortar science and matching technique.

About the Author

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.

His work began in the field — on ladders, on scaffolds, reading walls and fixing what failed — and the systems in his books were developed the same way: job by job, failure by failure, over five decades of Texas masonry. The LintelLOCK system in this book is his field-developed method for replacing failed lintels so they never fail again.

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