Termites do their worst work where you cannot see them. By the time a homeowner notices soft spots on baseboards or shadows in paint, the real damage is often buried inside beams, joists, and sill plates. I have opened beams that looked healthy on the surface, only to find a network of hollow galleries that turned a structural member into a shell. When the beam is part of a load path under floors or bearing walls, the stakes rise quickly. The question becomes practical and urgent: can we stabilize the beam using epoxy and reinforcement, or must we replace it outright?



This is where experience helps. Epoxy consolidants and structural adhesives can rescue a termite-damaged beam, but only when we respect their limits and integrate them with real reinforcement. Think of epoxy as a binder and gap-filler, not a miracle cure. The job begins with diagnosis, and it ends when the load path is restored with confidence.

What termites do to structural members

Subterranean termites, the most common in many regions, track moisture and create mud tubes from the soil to the timber. They eat along the grain, avoiding light and air, and often leave a wafer-thin shell of wood that fools the eye. Drywood termites behave differently and can infest above grade, but the engineering problem feels similar in the end. With beams, the typical pattern is longitudinal tunneling along the neutral axis, with more loss at the edges if moisture is present from leaks. Load capacity falls as the effective section shrinks. Deflection creeps up, then plaster cracks, floors sag, and doors rub.

I have seen a 4x10 beam with roughly 30 percent section loss at midspan carry a living room without catastrophic failure, but the deflection was obvious and the safety margin thin. On the other hand, I have also pulled down a 1920s garage beam that was hollowed to the point you could crush it with your hands. Choosing between termite structural repair using epoxy and reinforcement versus replacement is not a cosmetic decision. It is structural judgment measured against building code, live loads, and the realities of the existing house.

Diagnostics that actually matter

Moisture content tells the truth. If you meter the beam and see 20 percent or higher, expect ongoing risk. Termites chase water, and rot fungi can tag along. For wood epoxy repairs to last, the moisture content needs to drop below roughly 15 to 18 percent, and we need to fix the cause. That may mean rerouting a downspout, venting a crawlspace, installing a vapor barrier, repairing a plumbing leak, or improving grade.

A simple awl or pick can map soft spots. But do not rely only on poking. Use a borescope where possible and drill 1/8 inch pilot holes in a grid to sample shavings. Healthy shavings look crisp and curl. Rotten or termite-damaged cores come out as powder or coffee grounds. Mark your grid and record depths. For spans over 8 feet or with visible sag, do not guess the loads. If the beam supports a bearing wall, a second floor, or a heavy tile bath, get an engineer involved. It is money well spent.

Professional termite repair services will also coordinate with pest control. Kill the colony before you lock galleries tight with epoxy. For subterranean species, soil treatment and baits break the cycle. For drywood, localized wood injection or tent fumigation may be necessary. A repair that traps live insects inside a beam invites a second bill.

When epoxy belongs in the plan

Epoxy shines at a few things. It consolidates punky or worm-eaten wood fibers by wicking a low viscosity resin into the grain. It bonds sister members, steel plates, or fiber reinforcement to existing wood when clamping or bolting alone would be awkward. It fills voids and helps transfer shear between old and new. It also seals out air and moisture better than polyester fillers used for paint prep.

A conservative rule that has held up for me: if the beam has lost more than a third of its cross section in the high moment region, or if there is visible crushing at supports, plan for reinforcement that carries real load. Epoxy consolidation by itself can stiffen and protect, but it will not replace a significant chunk of structural section. If the loss is extreme or the damage is concentrated at bearings or key connections, replacement may be the wiser path. Structural termite repair near me often starts with that exact conversation.

Here is a quick go or no-go checklist before committing to epoxy.

- Active infestation has been treated, and you have a dated service report.
- Moisture source is corrected, and the beam reads under roughly 18 percent.
- The remaining wood can take a thumbnail without crumbling to dust, at least in sections, so epoxy has fibers to bond.
- You have a shoring plan to unload the beam before injecting or plating.
- There is a reinforcement strategy sized for the span and loads, not just cosmetic patching.

Which epoxy and where it fits

Not all epoxies behave the same. For termite wood repair inside beams, you want a two-part, low viscosity consolidation resin for injection, and a thixotropic paste for gap filling and bonding plates or dutchman inserts. The injection resin should have a long enough pot life to wet out the wood before gelling. Moisture-tolerant formulas help in crawlspaces, but do not skip drying. Some field kits include calibrated mixing tips and ports that make injection less messy.

Mechanical properties matter. Good structural epoxies have tensile and compressive strengths in the range of 5 to 12 ksi, far higher than most softwoods parallel to grain. That sounds great, but it can be misleading. Epoxy’s modulus is different from wood’s, and it performs best when it supplements intact fibers, not when it tries to span large voids by itself. For that reason, I prefer to mix structural filler into paste when I need to bridge gaps beyond a quarter inch, or better yet, fit wood dutchmen to share load.

Temperature and cure time affect penetration and strength. Cool days lengthen pot life and let resin sink deeper, but extremely cold conditions slow cure to a crawl. In midsummer heat, plan your batches small, and protect the

area from direct sun. Always pre-wet rotten fibers with neat resin before packing with thickened epoxy. That first wetting is what ties the mass together.

Reinforcement options that play well with epoxy

The reinforcement is where the beam gets its muscle back. The right choice depends on access, architecture, and the severity of loss.

Sistering with lumber is often the most economical. Jack the beam slightly to remove load, then bond and lag bolt a new LVL or dimensional lumber member alongside the damaged section. Continuous bearing at supports is ideal. Epoxy between faces improves composite action, but I still design the bolt pattern to carry shear on its own. Typical spacing ranges from 12 to 24 inches depending on loads and thickness. I have sistered a 3.5 inch thick, 9.25 inch deep LVL onto a termite-damaged 4x10 and recovered deflection values within acceptable limits.

Steel flitch plates make sense when you have height constraints. A 3/8 inch or 1/2 inch steel plate sandwiched between the existing beam and a new wood member, all through-bolted, can carry surprising loads in thin space. Epoxy acts as a bedding and corrosion barrier, but again, do not rely on glue to replace bolts. Mind galvanic concerns if the environment is damp, and select appropriate washers and coatings.

External plates or angles bolted to the underside can work in basements where appearance is secondary. I have run 3 inch by 3 inch angles along the bottom edges, with shear transfer through bolts and a bed of paste epoxy to ensure uniform contact. This approach effectively adds tension reinforcement at the extreme fiber where the beam needs it most.

Fiber reinforced polymer, or FRP, helps when headroom is tight and you want a clean look. Unidirectional carbon fiber strips epoxied to the underside of a beam add tensile capacity with minimal thickness. Surface prep is critical, and the beam must be dry. FRP is not a magic trick, but when applied correctly it can be the difference between replacing a beam and restoring it in place. Designers need to consider fire protection and compatibility with future fasteners, since you do not want to drill through a hidden carbon strip later.

Pinned dutchmen and epoxy cast pockets are useful for localized voids. If termites have carved out a section near a bearing, you can rout to sound wood, pin in a matching wood block with stainless rods set in epoxy, and fair the interface with paste. The goal is to reestablish continuous fibers where compression or shear peaks.

Shoring and jacking without collateral damage

Shoring is not optional. Before any termite beam repair, I like to transfer load to temporary posts and a beam that clear-spans the damaged area. Adjustable steel columns or solid 4x4s on proper footings work. Raise the structure slowly, about an eighth of an inch per day, if you need to correct sag. More than that risks cracking finishes or binding doors. The point is to unload the member so epoxy can cure without creep and your reinforcement can be installed in a neutral position.

Measure before and after. A string line or laser shows sag better than your eye. If the floor above already lives with a permanent set, do not chase zero just to make a level bubble happy. Older houses tolerate a hint of slope better than broken plaster.

Injection and bonding in practice

Think of injection as medical triage. You want to deliver resin to the right layers, not flood a cavity and hope for the best. After mapping voids, drill staggered ports at 45 degrees toward the neutral axis. Spacing might be 6 to

12 inches depending on the size of the beam and the severity of the damage. Start at the lowest port and work upward, injecting until refusal or until resin appears at neighboring ports. Plug ports as you go. On severely honeycombed beams, pre-seal the exterior surface with a thin coat so you do not lose resin to drips.

For face bonding, spread a uniform bed of paste epoxy with a notched trowel, bring the sister or plate into position, clamp or jack tight, then install bolts to the planned pattern. Wipe squeeze-out. I prefer to tighten bolts in stages, returning after initial cure to check torque. If conditions are damp or cold, extend cure time before removing shoring.

Here is a condensed sequence for epoxy-termite beam repair work that combines injection and reinforcement.

- Shore and, if needed, jack gradually to relieve the beam.
- Eradicate termites and fix moisture, then confirm dry readings.
- Map damage, pre-drill injection ports, and pre-fit reinforcement.
- Inject consolidant resin in stages, then bond and bolt reinforcement.
- Cure fully, remove shoring, and monitor deflection over a few weeks.

Edge cases and judgment calls

Not every beam is a candidate for epoxy and reinforcement. If the beam has lost bearing length at a post, or if the support post has settled into a wet footing, the bigger problem is the support system. You cannot glue a fix to a sinking pier. Similarly, if a ***Watsonville home termite inspection*** beam is part of an engineered truss or an assembly with proprietary fasteners, talk to the manufacturer or an engineer. Epoxy on a tension face in a fire-rated assembly also raises code questions. FRP, for instance, often wants a protective layer for fire resistance.

What about cracks? Termites do not usually create structural cracks the way shrinkage or overload does, but repairs often reveal old splits. Epoxy injection of structural splits can help, but only after the load is corrected. Do not lock stress into a beam that still carries eccentric loads or twist.

Finally, there is the good-old-fashioned replacement. Sometimes the cleanest answer is to support, cut out the damaged span, and drop in a new LVL or glulam. In a crawlspace with clear access, this can be faster than elaborate field repairs. In a finished living room with built-ins, cutting open floors and ceilings is a different conversation. That is where local termite damage repair crews earn their keep, balancing structure, cost, and disruption.

Cost, time, and what drives them

Costs vary with access and scope. For a modest termite beam ***termite exterminator*** repair that includes epoxy consolidation and a sistered LVL over a 10 to 14 foot span, I have seen project totals in the low thousands to five figures, driven largely by shoring, engineering, and finish restoration. Add FRP or steel plates, and hardware and labor climb. If the area is tight, as in a crawlspace with 14 inches of clearance, labor time doubles. If you need termite drywall repair after termite treatment because you opened walls to trace the damage, add that to the budget. Painting and patching are rarely trivial.

Time-wise, plan on a few days of on-site work plus cure time. You can often stage the repair so that shoring occupies a week while resin cures and plates set, then you pull posts and button up. Homeowners appreciate schedules that respect their daily life. Nothing sours a good repair like tools scattered across a living room for a week longer than promised.

Integrating beam repair with the rest of the house

Termites rarely stop at a single beam. A thorough termite damage restoration plan looks at related members: floor joists framing into the beam, the sill plate sitting on the foundation, and any posts or studs above. Termite floor joist repair often mirrors beam strategies, only on a smaller scale. Sistering joists, adding blocking, and consolidating localized pockets can stiffen spongy rooms. Termite sill plate repair is trickier. If mud tubes have bridged foundation to sill, expect wider moisture problems. Swapping a sill plate demands careful jacking of wall sections, a task for a seasoned wood repair contractor specializing in termite damage.

Upstairs, termite wall repair can mean replacing studs and plates that carried the path of least resistance. Do not ignore the attic. Termite attic wood repair on rafters and purlins is less common, but I have seen drywood termites carve out roof members in warm coastal zones. Subfloors that feel bouncy may need termite subfloor repair once the joists are stabilized. Plywood scabs and adhesive screws help, but if the subfloor has turned to paper along the edges, new panels are cheaper than cleverness.

If a beam anchors a stair or divides rooms where loads are quirky, take a breath and sketch the load path. Termite framing repair is not just patchwork. It is a map of force from roof to soil. When you repair termite damage to a house, you are restoring that map.

Tools and materials that pay for themselves

You do not need a truck full of gadgets, but a few tools make termite repair services more precise and less messy. A moisture meter with pins, a small borescope, and a handful of long mixing nozzles for epoxy injection ports are worth every dollar. Keep both low viscosity and paste epoxy on hand, with fillers for thickening when cavities refuse to cooperate. Stainless or hot-dip galvanized fasteners live longer in damp or treated wood. For shoring, I like screw jacks with solid bases, and straight, seasoned 4x4s that will not bow under load.

Personal protection matters. Many epoxies carry strong odors, and sanding cured resin creates fine dust. Use respirators suited to the task, gloves that resist the chemistry, and eye protection. Keep heaters and open flames away from curing resin. I have seen a contractor set a heater too close to a batch and watch it exotherm into a smoking brick.

A case from the field

A few summers back, we tackled a termite beam repair in a 1938 bungalow with a partial basement and crawlspace. The central 4x10 carried the kitchen and part of the dining room. Sag at midspan measured roughly 5/8 inch over 12 feet, with ceiling cracks telegraphing the problem. Termite tubes tracked up from a damp crawlspace corner where a downspout had dumped water for years. Moisture in the beam read 22 percent.

We coordinated with pest control for soil treatment and pulled the downspout into a proper drain. A plastic vapor barrier and vents improved crawlspace drying. Two weeks later, moisture dropped to 16 to 17 percent. Probes showed significant galleries inside the beam at midspan, less damage near the bearings.

We shored with a temporary beam and three posts, then jacked 1/8 inch daily for four days until the floor settled near level without cracking fresh paint above. We mapped voids with a drill grid and borescope, sealed the beam faces with a thin coat, then injected a low viscosity consolidant through ports until refusal. After a day, we sistered a 9.25 inch LVL along the beam’s south face, bedding it in paste epoxy and through-bolting at 16 inch centers with staggered edge distances. The LVL bore on new steel plates set on the existing foundation ledge, shimmed to uniform bearing.

Cure took three days in summer conditions. Shoring came off smoothly, and deflection held under the commonly accepted L over 360 limit for the span and load. We wrapped the crawlspace wood with a borate treatment as a belt and suspenders. Total on-site time was eight days including drying and finish patches to the crawlspace access door. The dining room floor squeak disappeared, and the house felt tighter underfoot. That job stacked every piece of the puzzle: dryness, consolidation, reinforcement, and load path.

How to find the right help

If you are typing termite repair near me at midnight, you are not alone. The trick is finding a team that treats the structure, not just the appearance. Ask prospective contractors about their approach to shoring, moisture control, and reinforcement design. Request references for projects where they used epoxy in structural members, not just surface fillers. If they have an engineer they work with, better yet. Local termite damage repair is not a commodity, and the cheapest bid can become the most expensive once sag returns.

Look for a termite damage contractor near me who will coordinate with pest control and follow through on monitoring. A quick moisture check three months later, after a rainy season, tells you the system is working. If the same person mentions termite drywall repair after termite treatment, they have seen a few projects all the way to paint. That continuity matters.

Tying it back to maintenance

Repairing a beam is one chapter. Keeping it safe is the book. Control water at the perimeter. Keep grade sloping away from the foundation. Extend downspouts. Maintain crawlspace humidity with proper vents or a vapor barrier. Store firewood away from the house. Trim landscaping so you can see the base of walls. Annual inspections by a pro catch small issues early, and small issues are cheap.

Epoxy does not rot, but the wood around it can. Reinforcement does not complain, but it will not fight a leak forever. The best termite damage repair is coupled to a plan that starves future colonies and keeps the structure dry.

Where epoxy and reinforcement leave you

Used with judgment, epoxy and reinforcement turn a scary discovery into a manageable project. You stabilize the fibers you have, rebuild what is missing with lumber, steel, or carbon, and give the house back its backbone without tearing it apart. That balance is the craft at the heart of termite beam repair. It is not shiny or dramatic, but you feel it with every solid step across the floor.

For homeowners sorting options, remember that termite wood repair and termite structural repair are not one-size-fits-all. They are tailored to your beam, your loads, your climate, and your budget. With the right plan, you repair termite damage to a house once, not twice. And when you do need help, a seasoned crew, the right epoxy, and well-chosen reinforcement can bring even a tired beam back to quiet strength.