Knead It Autofix - Fast Setting Epoxy Repair

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Details:

Understanding Auto Fix Knead It Before You Begin

Selleys Auto Fix Knead It is a co-extruded epoxy repair putty engineered specifically for automotive, marine, and caravan applications. Unlike single-component putties, this is a two-part epoxy system delivered in a unique stick format where the resin and hardener are pre-measured and contained in separate layers within a single extrusion. When you knead the material, these components mix to initiate a chemical reaction that transforms the pliable putty into a hardened, structural repair.

The "fast setting" designation is critical for first-time users to understand: once you begin kneading, you have a limited working window before the material becomes too stiff to apply and shape effectively. This guide will provide specific timing benchmarks at each stage to ensure your first application succeeds. The co-extruded format eliminates the measurement errors common with traditional two-part epoxies, making this an accessible option for beginners while maintaining professional-grade performance.

This polymer-based repair system cures through an exothermic chemical reaction—meaning it generates heat as it hardens. Understanding this characteristic prevents common first-time mistakes like applying excessively thick sections that can crack from uneven heat distribution, or panicking when the putty warms during mixing, which is normal and expected.

Safety Preparations and Protective Equipment

Before opening the package, establish proper safety protocols. Describe the classification accurately as covering skin irritation, eye irritation, AND skin sensitisation: 'classified as a skin irritant, eye irritant, and skin sensitiser (H315, H317, and H319)'., requiring specific precautions that must be in place before you handle the material.

Mandatory Personal Protective Equipment:

Nitrile or latex disposable gloves are non-negotiable. Remove or revise the qualifier 'particularly with repeated exposure' to avoid implying that first-time exposure carries lower risk. State that allergic skin reactions can occur on any exposure. Have multiple pairs available—you'll need fresh gloves if the first pair becomes coated with epoxy during kneading.

Safety glasses or goggles protect against accidental eye contact during the kneading process, when small particles can occasionally flake off. The material causes serious eye irritation (H319 classification), requiring immediate flushing with water for at least 15 minutes if contact occurs.

Workspace Preparation:

Work in a well-ventilated area. While this is a solid putty rather than a volatile liquid, ventilation prevents accumulation of any vapors released during the exothermic curing reaction. Outdoor settings or garages with open doors provide ideal conditions.

Establish a designated contamination zone on a disposable surface—cardboard, newspaper, or a dedicated plastic mat. Once epoxy contacts a surface during kneading, that surface is compromised for food preparation or skin contact. Position this work area at comfortable standing height to allow proper

kneading pressure without awkward postures.

Have soap and running water immediately accessible. The safety data sheet specifies washing with "plenty of water and soap" (P302+P352) if skin contact occurs. Locate your nearest water source before beginning—delay in washing allows deeper epoxy penetration and increases irritation severity.

Keep the emergency contact number (Australia: 1800 220 770, New Zealand: 0800 220 770) accessible on your phone. While serious reactions are uncommon with proper precautions, immediate access to expert guidance is essential if allergic reactions develop.

Tools and Materials Assembly

Gather all required items before opening the epoxy package. Once mixing begins, you cannot pause to locate missing tools—the chemical reaction proceeds regardless of your preparation state.

Essential Application Tools:

A clean, flat mixing surface dedicated solely to epoxy work prevents contamination. A piece of scrap wood, metal, or thick plastic (minimum 6" × 6") provides adequate mixing area. This surface will become permanently epoxy-coated; never use kitchen cutting boards or surfaces that contact food.

Shaping tools determine your final finish quality. For first-time users, a simple palette knife or old butter knife provides sufficient control. Popsicle sticks work for small repairs. Wet your shaping tool with water or apply a thin film of petroleum jelly—this prevents epoxy adhesion to the tool, allowing clean shaping without the putty grabbing and pulling.

Surface Preparation Materials:

Medium-grit sandpaper (80-120 grit) creates the mechanical bond essential for epoxy adhesion. The repair surface must be roughened to provide microscopic valleys for the putty to grip. Have several sheets available—contaminated sandpaper loses effectiveness quickly.

A degreasing agent removes oils that prevent bonding. Acetone, isopropyl alcohol (minimum 90% concentration), or dedicated automotive surface prep solutions work effectively. Apply with clean, lint-free cloths—old cotton t-shirts work better than paper towels, which can leave fiber residue.

Clean cloths in multiple quantities serve distinct purposes: degreasing application, surface drying, and cleanup. Designate specific cloths for each function to avoid recontaminating cleaned surfaces with transferred grease.

Timing and Measurement Tools:

A smartphone timer or watch with second hand tracks working time. You'll reference specific time windows throughout the process—having a visible timer prevents rushed application or exceeded working times.

Measuring tools aren't required for mixing (the co-extruded format provides pre-measured components), but a ruler helps assess repair thickness. Epoxy applications thicker than 10mm may require staged application to manage heat buildup during curing.

Surface Preparation Protocol

Surface preparation determines 70% of repair success—more first-time applications fail from inadequate preparation than from mixing or application errors. This phase cannot be rushed or approximated.

Initial Cleaning (5-7 minutes):

Begin with gross contamination removal. Wipe the repair area with a dry cloth to remove loose dirt, dust, or debris. For automotive applications, this means removing road grime, mud, or salt residue.

Marine applications may require removal of algae or salt deposits. This initial wipe prevents grinding contaminants into the surface during sanding.

Inspect for moisture. Epoxy bonds poorly to wet surfaces, and trapped moisture can cause incomplete curing. If the surface feels damp or shows water droplets, dry completely with clean cloths and allow 30 minutes air drying before proceeding. In humid environments, a heat gun on low setting (held 12" away, moving constantly) accelerates drying without damaging surrounding materials.

Mechanical Abrading (8-10 minutes):

Sand the bonding area extending 1-2 inches beyond the repair perimeter. This extra margin ensures the epoxy has adequate bonding surface even if your application spreads slightly during shaping. Use consistent, firm pressure with medium-grit sandpaper, creating a uniform matte finish. Glossy or smooth areas indicate insufficient abrading.

For plastic surfaces (common in automotive applications), cross-hatch sanding creates optimal bonding. Sand in one direction for 20 strokes, then perpendicular for 20 strokes. This creates a grid pattern of scratches providing multidirectional mechanical grip.

Metal surfaces require particular attention to oxidation removal. Continue sanding until you reach bright, clean metal with no rust, corrosion, or oxidation visible. Surface rust that "looks minor" will continue spreading beneath the epoxy, eventually causing bond failure.

Chemical Degreasing (3-5 minutes):

After sanding, residual oils from skin contact, previous treatments, or manufacturing processes remain invisible but devastating to adhesion. Saturate a clean cloth with your degreasing agent and wipe the entire prepared area thoroughly. Use straight, overlapping strokes rather than circular motions, which can redistribute oils.

Perform a second degreasing pass with a fresh cloth section. The first pass removes bulk contamination; the second ensures complete degreasing. Allow the solvent to fully evaporate—acetone typically evaporates within 60 seconds, while alcohol may require 2-3 minutes. Never apply epoxy to surfaces showing solvent residue or appearing wet.

Final Verification:

Perform the water break test: place a small water droplet on the prepared surface. If the droplet beads up, oils remain present—repeat degreasing. If water spreads into a thin film, the surface is adequately prepared. This test provides objective verification that subjective visual inspection cannot achieve.

Opening and Dispensing the Epoxy Putty

The 110g Auto Fix Knead It comes in a sealed tube protecting the co-extruded stick from premature activation. Opening technique affects material usability and prevents waste.

Package Opening (1-2 minutes):

Examine the tube before opening. Verify the cap is intact and the tube shows no damage or leakage. Damaged packaging may indicate compromised material shelf life or premature hardening. The tube should feel slightly firm but pliable—rock-hard tubes indicate the material has cured prematurely and is unusable.

Remove the cap with a twisting motion rather than pulling straight. The cap may have minimal epoxy adhesion to the tube opening from manufacturing; twisting breaks this seal without deforming the tube mouth. Some users report stiffness on first opening—this is normal and does not indicate product defects.

Determining Required Amount (2-3 minutes):

Assess your repair volume before dispensing. For first-time users, underestimating required material is common—epoxy loses 10-15% volume during kneading as air pockets collapse and components integrate. Calculate your repair volume (length × width × depth), then add 20% to account for this compression and inevitable waste during learning.

Small repairs (less than 1 cubic inch) require approximately 1 inch of extruded stick. Medium repairs (1-3 cubic inches) need 2-3 inches. For larger applications, consider multiple sequential applications rather than single large batches—working time constraints make large single applications challenging for beginners.

Extrusion Technique (30-60 seconds per inch):

Squeeze the tube with steady, even pressure from the bottom, progressing toward the cap like toothpaste. Uneven squeezing creates air pockets in the tube, making future dispensing difficult and potentially causing resin/hardener ratio imbalances in subsequent uses.

The material should extrude as a consistent, striped stick showing distinct resin and hardener layers (typically appearing as two different colors). If the extrusion appears marbled or pre-mixed, the tube has been stored incorrectly or is defective—do not use this material, as the resin-hardener ratio may be compromised.

Cut the desired length cleanly with scissors or a utility knife. Make perpendicular cuts rather than angled cuts to maintain resin-hardener ratio accuracy. The cut ends can be slightly sticky—avoid touching them with bare skin even through gloves, as the adhesive quality makes removal difficult.

Immediate Tube Resealing:

Immediately recap the tube after dispensing. Exposure to air causes surface hardening of the remaining material within 30-60 minutes. Wipe any residual putty from the tube threads and cap interior with a disposable cloth before resealing—hardened epoxy on threads makes future opening extremely difficult or impossible.

The Kneading Process: Achieving Proper Activation

Kneading initiates and completes the chemical mixing that activates the epoxy. Insufficient kneading produces weak repairs with incomplete curing; excessive kneading wastes working time and generates unnecessary heat.

Initial Integration (60-90 seconds):

Place your dispensed putty section on the dedicated mixing surface. Using gloved hands, begin folding the material repeatedly in half, then pressing flat. The distinct colored layers should begin smearing together but remain visibly separate for the first 15-20 seconds. This initial phase starts component contact without rushing the mixing process.

Apply firm, consistent pressure during each fold and press cycle. Light pressure prolongs mixing time and generates uneven component distribution. Think of kneading bread dough—confident, deliberate pressure rather than tentative patting.

Progressive Homogenization (90-120 seconds):

Continue the fold-press-fold rhythm as color streaks begin blending. You'll notice the putty warming perceptibly—this heat indicates the exothermic reaction has initiated. The temperature increase is normal and expected, typically reaching 100-110°F (slightly warm to touch). If the material becomes uncomfortably hot to hold, you've either dispensed too large a quantity (generating excessive cumulative heat) or are kneading too slowly (allowing heat to build before application).

The putty texture evolves during this phase. Initially somewhat stiff and resistant, proper mixing creates a more pliable, slightly tacky consistency. Some users report the material becoming "creamier" or "smoother" as mixing progresses—this indicates good resin-hardener integration.

Completion Verification (Total kneading time: 2.5-3 minutes):

Mixing is complete when no color streaks remain visible. The entire putty mass should display uniform coloration throughout with no marbling, swirls, or distinct component layers. To verify, flatten a small section thin (approximately 2mm) and inspect against a light background—even subtle unmixed streaks will appear as color variations.

The completely mixed putty maintains workability for approximately 3-5 minutes after kneading completion, though this varies with ambient temperature. Warmer environments (above 75°F) reduce working time; cooler settings (below 60°F) extend it. Time your kneading completion to allow immediate application—don't mix and then search for tools or reconsider surface preparation.

Common Kneading Errors:

Incomplete mixing (stopping while streaks remain visible) causes soft spots in the cured repair where unmixed resin or hardener created localized weak zones. Conversely, over-kneading (continuing beyond uniform color achievement) simply consumes working time without improving results.

If you detect grittiness during kneading, the material contains contaminants (likely from storage in dirty environments or damaged packaging). Discontinue use—grit prevents proper adhesion and creates stress points that compromise structural integrity.

Application Technique and Timing

With 3-5 minutes maximum working time, application must proceed efficiently without rushing, which causes air entrapment and poor surface contact.

Initial Placement (30-60 seconds):

Transfer the entire kneaded putty mass to the prepared surface in a single motion. Press firmly to establish initial contact across the entire repair area base. This first compression is critical—it evacuates air from the surface interface and creates the primary mechanical bond. Insufficient initial pressure creates voids where the epoxy "bridges" over surface valleys rather than filling them.

For cavity repairs (filling holes or voids), begin at the deepest point and work outward. This prevents air entrapment in cavity bottoms. For surface builds (recreating lost or damaged sections), establish the base layer first before building height.

Compression and Consolidation (60-90 seconds):

Use firm thumb or palm pressure to work the putty into the repair area, forcing material into all surface irregularities created during your abrading preparation. You're achieving mechanical interlocking—the putty must flow into sanding scratches and surface texture to develop full bonding strength.

Work from the center outward for flat repairs, using progressively lighter pressure as you approach the edges. This creates a slight crown or convex profile that you'll refine during shaping. Edges pressed too firmly during initial application become thin and weak—they'll chip or peel after curing.

For complex contours matching existing shapes (common in automotive body repairs), use your shaping tool to compress material into recesses before building higher areas. Attempting to shape complex contours in a single operation produces uneven density and trapped air pockets.

Layering for Thick Repairs:

If your repair exceeds 10mm (approximately 3/8 inch) thickness, apply in 5-7mm layers with 24-hour intervals between layers. The exothermic curing reaction in thick sections generates excessive heat that can crack the repair or prevent complete curing in the center. First-time users frequently attempt single-application thick repairs—patience with staged application produces dramatically superior results.

Mark layer boundaries lightly with a knife tip while the first layer remains workable—this creates mechanical keying for the subsequent layer to grip.

Shaping and Final Forming

With approximately 2-3 minutes remaining in the working window, focus shifts from application to achieving final contour and surface finish.

Primary Shaping (90-120 seconds):

Using your lubricated (water or petroleum jelly) shaping tool, refine the repair profile to match surrounding surfaces. For automotive body work, this means replicating curves, character lines, or panel contours. For functional repairs (mounting bosses, brackets, or mechanical parts), focus on dimensional accuracy rather than cosmetic finish.

Light, sweeping tool strokes remove high spots and fill low areas more effectively than heavy pressure, which tends to drag and tear the increasingly viscous putty. If the material begins sticking to your tool despite lubrication, working time is nearly exhausted—complete shaping immediately with whatever profile you've achieved rather than attempting perfection.

Create slight overbuilds (0.5-1mm excess material) on cosmetic repairs. After full cure, you'll sand to final dimension. This overbuild approach prevents the common first-time error of under-application, which requires complete repair restart rather than simple sanding correction.

Surface Texturing (30-60 seconds):

For repairs requiring texture matching (textured plastic bumpers, gel coat surfaces, or patterned materials), imprint texture during the final working seconds. Press textured material samples, coarse fabric, or specialized texturing tools into the semi-hardened putty. This is exponentially easier than attempting to create texture after full cure through grinding or molding.

Smooth-finish repairs benefit from final tool smoothing with water. A wet finger or tool dampened with clean water (not saliva, which contains contaminants) can achieve remarkably smooth finishes when applied with light pressure in long, continuous strokes.

Identifying Working Time Exhaustion:

The putty signals working time conclusion through increased resistance to shaping, reduced tackiness, and slight firmness when pressed. When you notice these changes, cease all shaping immediately. Continued working after this point creates surface tears, rough texture, and pulls partially cured material from the bonding surface.

If you haven't achieved your desired profile when working time expires, accept the result and plan to refine through sanding after cure rather than forcing additional shaping that will damage the repair.

Cure Monitoring and Timing

Understanding the curing progression prevents premature handling that damages repairs or excessive waiting that wastes time.

Initial Set (15-30 minutes at 68°F):

The fast-setting designation means surface hardness develops within 15-30 minutes under standard conditions (68°F ambient temperature). During this phase, the repair transitions from pliable to firm but remains somewhat compressible. You can touch the surface to check progress, but avoid pressure that might deform the repair.

Visual cues indicate curing progress: the surface develops a matte finish replacing the initial wet appearance, and color may deepen slightly as the chemical reaction completes. These changes proceed from exterior to interior—surface firmness doesn't guarantee complete internal cure.

Temperature dramatically affects initial set time. At 50°F, expect 45-60 minutes for equivalent hardness; at 85°F, potentially 10-15 minutes. This variation explains why identical repairs in heated garages cure faster than outdoor winter applications.

Functional Hardness (60-90 minutes):

The repair achieves handling hardness approximately 60 minutes after application at room temperature. "Handling hardness" means the repair resists deformation from normal contact and can support light loads, but hasn't reached full structural strength. You can carefully move repaired items at this stage without bonding failure.

Thumbnail pressure testing provides objective assessment: press your thumbnail firmly into an inconspicuous repair edge. If the nail leaves no impression, handling hardness is achieved. Visible indentation indicates insufficient cure—wait an additional 30 minutes and retest.

Full Cure (24 hours):

Maximum mechanical strength develops over 24 hours. While the repair feels hard within 90 minutes, full chemical cross-linking continues for the entire 24-hour period. Subject repaired items to normal stress loads or begin final finishing (sanding, painting) only after this complete cure window.

For critical structural repairs (chassis components, load-bearing brackets, or safety-related applications), extend cure time to 48 hours before full loading. The incremental strength gain between 24-48 hours may seem minor but provides meaningful safety margins for high-stress applications.

Elevated temperatures accelerate full cure: placing repaired items in 100-110°F environments (warm garages, sunny locations, or near heating sources) can reduce full cure to 12-16 hours. Never use temperatures exceeding 120°F, which can cause incomplete curing or material degradation.

Post-Application Cleanup

Immediate cleanup prevents epoxy adhesion to tools and prevents skin exposure to semi-cured material.

Tool Cleaning (While Epoxy Remains Workable):

Clean shaping tools immediately after completing the repair, while residual epoxy remains pliable. Wipe tools with disposable cloths, then wash with soap and warm water. Acetone or alcohol removes stubborn residue but isn't necessary if you clean promptly.

Tools cleaned after epoxy hardens require mechanical removal—scraping with razor blades or wire brushes. This damages tool edges and creates sharp epoxy chips. The 3-5 minutes spent on immediate cleaning saves 30+ minutes of hardened epoxy removal.

Glove Removal and Skin Protection:

Remove gloves carefully by grasping the cuff and peeling downward, turning the glove inside-out as you remove it. This contains any epoxy contamination within the inverted glove, preventing transfer to clean skin. Remove the second glove using the same technique, enclosing both gloves together for disposal.

Inspect hands for any epoxy contact after glove removal. Uncured epoxy appears as shiny or sticky spots on skin. Wash immediately and thoroughly with soap and water—do not use solvents on skin, which can drive epoxy deeper into pores or cause chemical burns. The safety data sheet specifically requires washing with "plenty of water and soap" for skin contact.

Workspace Decontamination:

Allow residual epoxy on disposable mixing surfaces to fully harden before disposal (24 hours). Attempting to dispose of uncured epoxy creates sticky messes and potential skin exposure. Hardened epoxy on disposable surfaces can be discarded with regular waste—cured epoxy is chemically inert and non-hazardous.

Wipe surrounding work areas with damp cloths to remove epoxy dust or particles generated during application. These particles can become airborne and settle on surfaces distant from the immediate work area.

Troubleshooting First-Time Issues

Common first-application problems have straightforward solutions when identified early.

Inadequate Adhesion:

If the repair detaches or can be peeled from the surface after curing, surface preparation was insufficient. Common causes include residual oil contamination (incomplete degreasing), smooth surfaces (inadequate abrading), or moisture presence during application. Unfortunately, adhesion failures require complete repair removal, proper surface preparation, and reapplication—partial repairs or adhesive additions don't remedy fundamental bonding failure.

Incomplete Curing (Soft or Sticky Spots):

Localized soft areas indicate incomplete mixing during the kneading phase. The repair may appear cured on the surface while interior sections remain uncured indefinitely. Remove soft material completely with a scraper or knife, prepare the exposed surface (cleaning and abrading), and apply fresh properly-mixed putty.

Uniformly soft or tacky repairs (entire surface remains non-cured) suggest defective material or contamination. This occurs rarely with sealed tubes but can result from freezing storage or excessive age. Dispose of the entire repair and tube—attempting to "fix" material-based cure failures is futile.

Surface Roughness or Tool Marks:

Excessive texture or visible tool marks result from working beyond the working time window or insufficient tool lubrication. After full cure (24 hours), sand with progressively finer grits (start with 80-grit, progress through 120, 220, and 400-grit) to achieve desired smoothness. Wet-sanding with 400-grit produces remarkably smooth surfaces approaching the finish quality of original materials.

For significant roughness, apply a thin skim coat of fresh epoxy over the fully cured rough surface after light sanding for mechanical key. This approach works better than extensive grinding of the original application.

Air Voids or Pinholes:

Small surface voids indicate trapped air during application. Minor pinholes (less than 1mm) can be filled after cure with small amounts of fresh putty pressed firmly into each void. Larger voids or internal air pockets (visible through semi-transparent sections) compromise structural integrity—these require complete repair removal and reapplication with improved compression technique.

Cracking During Cure:

Cracks developing during the curing process indicate excessive thickness generating excessive exothermic heat. The surface cures rapidly while the interior remains liquid, creating stress that manifests as cracks. Prevention requires staged applications for thick repairs. Remediation requires crack grinding (creating V-grooves), cleaning, and filling with fresh putty.

Color Mismatch:

The cured epoxy color may differ from surrounding materials. This isn't a defect—Auto Fix Knead It is designed for mechanical repair strength, not color matching. After full cure, apply automotive primers and paints to match adjacent surfaces. Sand cured epoxy to 220-grit before priming to ensure proper paint adhesion and texture.

Expert First-Application Tips

Temperature Management:

Store unopened tubes at room temperature (65-75°F) for consistent working properties. Warm tubes (above 80°F) produce softer putty with shortened working time; cold tubes (below 55°F) extrude stiffer material requiring extra kneading force. For optimal first-time experience, allow tubes stored in cold environments to reach room temperature 2-3 hours before use.

Working Time Extension:

If you need extended working time for complex applications, refrigerate your kneaded putty ball for 2-3 minutes immediately after mixing. This slows the chemical reaction, adding 1-2 minutes to working time. Don't exceed 3-minute refrigeration—longer chilling can prevent proper curing. This technique serves as an emergency measure, not standard practice.

Mixing Surface Selection:

Glass or glazed ceramic mixing surfaces allow complete cured epoxy removal after hardening—the epoxy pops off cleanly rather than bonding permanently. This enables surface reuse for future applications. Rough wood or porous materials absorb uncured epoxy and become permanent mixing boards after first use.

Application Sequence for Multiple Repairs:

If you're completing several repairs in a session, prepare all surfaces first, then mix and apply each repair sequentially. Don't prepare one surface, mix, apply, then prepare the next—the time consumed in preparation wastes the current batch's working time. Batch your preparation tasks separately from mixing and application tasks.

Documentation for Learning:

Photograph your first application at each stage (surface prep, mixed putty, application, shaping, and cured result). These images provide invaluable reference for future applications, helping you identify what worked and what needs improvement. Time-stamp photos to verify your working time management.

References

Based on manufacturer specifications provided and safety data sheet documentation for Selleys Auto Fix Knead It product code 9300697110138.

- [Selleys Official Website - Contact and Product Information](https://www.selleys.com.au) - ABN 67 000 049 427, 1956 Dandenong Road - Safe Work Australia GHS 7 Classification System - Referenced for hazard categorization (H315, H317, H319) - Emergency Response Information: Australia 1800 220 770, New Zealand 0800 220 770