

TECHNICAL DATA SHEET
PRODUCT DESCRIPTION

FASTLOX METAL is a two component epoxy composite made with extra fast setting specialty hardeners in combination with specialty resins to start setting within 4-5 mins. This industrial grade epoxy has been fortified with a proprietary blend of metal alloys and high strength fillers. Fastlox Metal is to be used when a fast set emergency grade repair system is needed as a metal rebuilding, patching, bonding and sealing applications. This solvent free, non-rusting, non shrink, fully machinable formulation is a sag-free formula and thus can be applied vertically and overhead to 3/8" inch thicknesses. Exhibits tenacious bond to all metals, concrete, various plastics and is resistant to most MRO chemicals. Sectors: Industrial & Marine.

INTENDED USES

- Fast leak repairs on pipes & tanks
- Emergency transformer leak repairs , etc.
- Sealing tank welds
- Emergency repairs for pitting tank, pipes, flanges, pumps etc.
- All metal repairs patching, rebuilding, filling, sealing and bonding

BENEFITS

- Pot life 3-5 minutes, hardens in 20 and fully cures in 60 min
- Can be applied at 3/8" thicknesses on vertical and overhead surfaces
- User friendly, no solvents
- Can be fully machined, drilled, tapped, sanded and coated over.
- Easy mix ratio, no special tools required
- No hot work involved
- Highly chemical, corrosion & impact resistant
- Excellent bonding to carbon steel, aluminum, copper, brass, stainless steel, concrete & most plastics
- Sold as kit containing mixing board, applicators, spatula

PRODUCT SPECIFICATIONS

Performance Data °F	#747	#749	#750
Color	Grey	Grey	Grey
Adhesive Tensile Shear(ASTM D1002)	2200psi	2500	2750psi
Compressive Strength (ASTM D695)	11750 psi	12500	12400 psi
Cured Hardness Rating (Shore D)	85	85	85
Coverage per kit @ 1/4" Note: account for waste & surface roughness	~50 sq in/kit (6"x8"x1/4") or (12"x8"x1/8")	~50 sq in/kit (6"x8"x1/4") or (12"x8"x1/8")	~50 sq in/kit (6"x8"x1/4") or 12"x8"x1/8")
Dielectric Strength (ASTMD 149)	35 volts/mil	212 volts/mil	30 volts/mil
Flexural Strength (ASTM D790)	7500 psi	12500	8250 psi
Initial Cure @ 75F/24C	20 min.	15 min	35 min @ 75F/24C
Full Cure @ 75F/24C	1 Hour	1 Hour	6 Hours @ 75F/25C
Full Immersion @ 75F/24C	24 Hours	1 Hour	24 Hours@ 75F/25C



TECHNICAL DATA SHEET

Machinable @ 75F Cure Time	1 Hour	30 min	35 min
Pot Life (Working Time) @ 75F	3-5 min	3-5 min	7 min @ 75F
Pull of adhesion (ASTM D4541)	3200 psi	3500 psi	3850 psi
Ratio Mix by Volume	1:1	1:1	1:1
Recoat Window Max @ 75F	20 min	12 min	15 min
Shrinkage	0%	0%	0%
Temperature Resistance Dry	210F/182C	260F/12C	360F/121C
Temperature Resistance Wet (Immersion)	120F/63C	150F/65C	145F/54C
For wet, underwater & oil contaminated surfaces	No	No	Yes

**Note: Fastlox Metal #750 - Can also be used for wet, underwater and oil contaminated surfaces or where ideal surface preparation cannot be achieved.*

***Cure Time:** Fastlox Metal cures faster with warmer temperatures and slower with colder temperatures. Temperatures will affect the pot life, initial cure, recoat window, full and immersion cure rates of the product as well. Substrate temperature will also affect cure rates. However product performance after cure is unaffected. Please consult with EMP Inc.

Optimum Performance Requirement:

Fastlox Metal will fully cure at room temperature (75F/24F) the allocated times above and post heat curing is *not* required. For higher tolerances in specialized applications where stronger mechanical, thermal and chemical resistances are required, it may be post cured as follows: After 2 hours initial cure, raise temperature slow to 200F/100C for 4 hours. (This can highly enhance compressive, flexural, pull of adhesion and thermal properties can be enhanced. Consult with EMP Technical for specification # PC-ME-747-749 if post curing is desired.

SURFACE PREPARATION

1) Remove any rust or oxidation. Metals must be prepared properly using a grinding wheel with a metal disc if available to a white bare metal finish. For best results, a surface profile of 3-5 mil is ideal. Proper profiling creates a tenacious mechanical bond and durability. Score the metal in a cross hatch pattern.

Certain conditions and fluids may call for manual surface preparation to the existing metal or substrate and thus wire brushes, metal files, hack saws will be the tools of choice to manually prepare the surface. Such tools may be used for surface preparation, cleaning and profiling to create a "tooth" or cross hatch pattern so that epoxy can anchor onto the substrate mechanically and chemically for a powerful bond.

2) Blow off, vacuum or wipe off any dust from surface preparation.

3) Using a stiff bristle brush (paint brush), clean and wash area vigorously with the quick evaporating, non-residue forming E.M.P. Metal Cleaner #701. Repeat twice and allow to dry properly. Begin application of epoxy immediately on the newly prepared surface.



TECHNICAL DATA SHEET

FASTLOX METAL

Product Codes: 747, 749, 750

Industrial Grade, Extra Fast Set Emergency Metal Repair Compound

EMP Release Agent PN# 1126 can be used in areas where Fastlox Metal shouldn't adhere to. (eg: forming mold, etc.)

Additional information: Please consult with our technical department for proper guidelines for surface preparation. Training and consultation are available on all E.M.P. Inc. products.

Mixing

*This product is conveniently packaged in pre-measured kits ready to mix and apply. Each kit contains hardener and resin. Since Fastlox Metal cures rapidly, only mix amounts that will be used less than 4 min. Remove the appropriate amounts by volume of resin and hardener to be used on the non absorbing mixing board supplied in the kit. Lay both parts side by side to determine the measurement by volume. Mix both parts using the large spatula supplied in the kit. Lift all the material to be mixed and spackle down on the mixing board. Continue this process until a streak free, even and smooth consistency is reached.

Note: Mixing full kits is always recommended for proper cure however, small batches can be mixed with appropriate volume measurements. Be sure to always check the ratios on the product containers. Small mixing spoons and cups may be used for more accurate volume mixes. (For eg: If volume measurement of a product is 1:1, then fill 1 cup of Resin to 1 cup of hardener, remove all the contents to a mixing board and mix to an even, smooth, streak free consistency. Eyeballing volume on mixing board may be employed.

Application Method

Application Instructions:

Temperature Considerations

If product is being stored in cold conditions, please move tubs to warm area to soften epoxy before use. Store product at 75F/23C before for use. For best results always apply at 40F or above. Heaters may be used by enclosing area with plastic to elevate the temperature for proper application.

Work fast. It is recommended to apply a thin layer first using a short bristle brush supplied in the kit. Brush material with firm pressure by rubbing it into the metal. Be careful not to have any air pockets under the product. Once this process is complete, immediately apply a thicker layer on top less than 1/4" and allow to dry.

For cracks, holes and, gouge repairs, use Fiberzite reinforcement tape as follows:

- 1) Apply a thin layer using a stiff bristle brush
- 2) Apply 1/8 layer of FASTLOX METAL
- 3) Cut Fiberzite reinforcement tape to size of area to be built or sealed (approx 3" away and around the



TECHNICAL DATA SHEET

damage)

- 4) Saturate the fabric tape by using the applicator or spatula and firmly press a thin layer of Fastlox Metal FS on both sides
- 5) Affix Fiberzite on the previously applied layer using a brush with a dabbing and brushing motion making sure there are no air pockets between the fabric and the Fastlox Metal.
- 6) Apply final coat of Fastlox Metal at 1/8" over the Fiberzite fabric.
- 7) Allow to dry as per instructions

* Fastlox Metal can also be used without Fiberzite Reinforcement Tape if need be for emergency repairs. The use of Fiberzite reinforcement tape gives additional strength to the repair.

ACTIVE LEAK REPAIRS:

Active low pressure leaks can be plugged with cork, lead wool, wooden dowel first. Thereafter abrade the area around the plugged leak and apply Fastlox Metal. Certain conditions will require E.M.P. Inc. LEAKLOX as a more rigid putty with a heavier body to be used to plug a leak. Please consult E.M.P. Inc leak repair division.

PATCHING & REBUILDING

Fastlox Metal can be directly applied up to 3/8" directly to the surface for rebuilding purposes. Standard procedures of surface prep and mixing remain the same.

COMPATIBILITY:

Fastlox Metal can be used as a standalone system for metal refurbishment. It may also be used in conjunction with other E.M.P. systems as the final protection or main bonding layer. All E.M.P. Inc metal repair systems are designed to be compatible to one another to produce a homogeneous system.

Vertical & overhead surface applications:

Fastlox Metal may be applied at 3/8" thickness (per coat) on vertical/overhead applications and thus completely sag free. It may be built up to the thickness desired. Make sure to recoat within 20 min.

Horizontal surface applications:

May be applied as thick as required by building up layers. Make sure to recoat within 20 min. Please contact EMP Inc technical department for specific application requirements and questions.

Lathing & Machining

FASTLOX METAL is fully machinable. Please consult with E.M.P. Inc technical department for lathe specifications # 747-749LM

Storage & Handling

**TECHNICAL DATA SHEET**

Store at room temperature in a cool, dry place. Keep containers tightly closed after use. If long term storage is required after use, encase the resin and hardener in a plastic bag, remove all air and store. Vacuum

packaging via plastic bags increases the shelf life.

Packaging***FASTLOX METAL, PN# 747***

454 gram/Kit (Hardener & Epoxy)

- 1 - Mixing Board
- 1 - Fiberzite Reinforcement Tape
- 1 - Spatula Set
- 1 - Paddle
- 1 - Applicator
- 1 - Stiff Bristle Brush

FASTLOX METAL, PN# 749

454 gram/Kit (Hardener & Epoxy)

- 1 - Mixing Board
- 1 - Fiberzite Reinforcement Tape
- 1 - Spatula Set
- 1 - Paddle
- 1 - Applicator
- 1 - Stiff Bristle Brush

FASTLOX METAL, PN# 750

454 gram/Kit (Hardener & Epoxy)

- 1 - Mixing Board
- 1 - Fiberzite Reinforcement Tape
- 1 - Spatula Set
- 1 - Paddle
- 1 - Applicator
- 1 - Stiff Bristle Brush

Optional, Additional Products:

E.M.P. Metal Repair System Applicator Tool Kit, Part # TK220 (Also sold separately))

E.M.P. Metal Cleaner #701 - Non-Residue forming, metal surface prep cleaner. Fast evaporation.

EMP Release Agent PN# 1126 - can be used in areas where Fastlox Metal and other epoxies shouldn't adhere to. (eg: forming casting metal components/molds etc)



TECHNICAL DATA SHEET

FASTLOX METAL

Product Codes: 747, 749, 750

Industrial Grade, Extra Fast Set Emergency Metal Repair Compound

Safety, Warranty & Limited Liability Information



SAFETY PRECAUTION: READ MATERIAL PRODUCT SAFETY DATA SHEETS BEFORE USING PRODUCT. Our products are intended for use by experienced professional only. Suitable chemical resistant gloves, safety glasses or full face shields, protective clothing and respirators must be worn as per product safety data sheet while conducting surface preparation and applying product. Do not smoke or drink while using product. Keep away from open flames and sparks.

EMPCORR warrants their product from defects. Because the application, handling or storing of our products is beyond our control, EMPCORR will not be held liable and in any form whatsoever for the results obtained after usage. To the best of our knowledge, the technical data contained herein is accurate on the date of publication and is subject to change without prior notice. Purchasers shall conduct their own tests to determine the suitability of our products for their particular purpose. Product properties, performance data and contents of this technical data sheets should not be constructed as specifications. User must contact EMPCORR to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. EMPCORR assumes no responsibility for coverage, performance or injuries resulting from use. No other warranty or guarantee of any kind is made by EMPCORR, express or implied, statutory, by operation of law, or otherwise, including merchantability and fit for a particular purpose

Liability, if any, is limited to replacement of products or net selling price of the product; EMPCORR shall not be liable for incidental or consequential damages, direct or indirect including but not limited to lost profits, down time, damages to property of the purchaser or other persons, bodily harm or injuries to purchaser or other persons, or damages for which the purchaser may be liable to other persons, whether or not occasioned by EMPCORR's negligence. Acceptance of delivery of our product means that you have accepted the terms of this notice, warranty and liability whether or not orders or other documents state terms that vary from this warranty. Our products contain chemicals that may cause serious physical injury. Before using, read the safety data sheet and follow all safety precautions, and use proper protective equipment (PPE) to prevent bodily harm before using the product.