

Metal Rebuild HT

TECHNICAL DATA SHEET



Material Description

Atlas Metal Rebuild-HT is a solvent free versatile ferrosilicon epoxy putty used to restore structures and machinery operating at high temperatures. Metal Rebuild-HT has outstanding mechanical, chemical, thermal and electrically insulating properties. Because it's based on a silicon steel alloy, it does not rust or cause galvanic corrosion. It can be easily drilled, tapped, filed or machined. Atlas Metal Rebuild-HT can also be used as a high-strength bonding or shimming component due to it's high compressive and adhesive strength. ABS & USDA approved.

Intended Uses

- Repair of worn shafts
- Repair of sheaves
- Casting for tool and die making
- Plate bonding & structural adhesive
- Worn keyway repair
- Engine casing repairs
- Flange face reconstruction
- Pitting and erosion resurfacing

Storage And Technical Information

Unit Size	4.4 Lbs (2 Kg)
Shelf Life	3 Years when stored between 20 °F and 86°F
Application Temperature (Ambient)	40°F - 95°F (Ambient)
Mixing Ratio (Volume)	4 Parts Base to 1 Part Hardener
Coverage Rate @ 1/4"	188.8 in ² (1.30 ft ²) per unit
Volume Capacity	47.2 in ³ per unit
VOC	0.0 Lbs/Gal; 0.0 g/L
Consistency	Paste
Available Colors:	Gray

Product Performance

Heat Resistance:	550°F Dry / 450°F Immersed	NACE TM 0174
Compressive Strength (psi):	20,230	ASTM D695
Tensile Strength (psi):	7,000	ASTM D638
Flexural Strength (psi):	11,000	ASTM D790
Hardness:	90 Shore D	ASTM D2240
Impact Resistance:	4.30 ft-lb/in	ASTM D4226
Adhesion to Concrete:	19 mm ³ (1000 Cycles / 1kg load)	ASTMD4060

Cure Schedule

Service / Temperature	41°F	59°F	77°F	86°F	90°F
Pot Life	35 min	20 min	15 min	10 min	5 min
Light Loading (Machining)	6 hrs	3 hrs	1 hr	45 min	30 min
Heavy Loading (Full Service)	4 days	36 hrs	15 hrs	9 hrs	6 hrs
Full Cure (Chemical Immersion)	5 days	3 days	2 days	36 hrs	15 hrs

Chemical Resistance

*Ex = 30 Days @ 72°F

10% Lactic Acid	Ex*	10% Hydrochloric Acid	Ex*	Butanol	Ex*
10% Nitric Acid	Ex*	75% Phosphoric Acid	Ex*	Diesel	Ex*
50% Sulfuric Acid	Ex*	50% Sodium Hydroxide	Ex*	Oil	Ex*
Motor Oil	Ex*	Diesel Fuel	Ex*	Kerosene	Ex*

Technical Support

Atlas Metal Rebuild-HT is backed with technical support from staff engineers, certified coatings inspectors, research laboratories and personnel 24 hours a day 7 days a week.

Call (786) 312-1231

Metal Rebuild HT

MATERIAL APPLICATION GUIDELINES



Surface Preparation

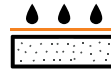
Surfaces to which Atlas Metal Rebuild-HT is to be applied must be clean firm and dry. Any contamination such as rust, mill scale, dust, oils, grease, fats, waxes, laitance and other coatings/sealers must be removed prior to the application of Metal Rebuild-HT.

- For concrete or cementitious substrates, surfaces should be abraded through mechanical means to provide a surface profile of CSP-3 to 5 for concrete. New concrete must cure for a minimum of 28 days. Additionally, the moisture content of the concrete must be below 6%. This can be measured with a protimeter.
- Concrete that has been contaminated with chemicals or other foreign matter must be neutralized to a pH of 8 prior to the application of Metal Rebuild-HT. Metal surfaces that have been exposed to salt water or chemicals should be power washed until the salt concentration is less than 30 mg/cm². (See Atlas Technical Bulletin on Soluble Salts)
- For metallic substrates, all surface must be abraded through abrasive blasting or mechanical means to provide a surface cleanliness compliant with NACE No. 2 / SSPC-SP 10. Prepared surfaces must have a surface profile of at least 3 mils. The substrate temperature should always be at a minimum of 5°F above the dew point in order to avoid flash rust.
- It's recommended to always dust off any surface that has been abrasive blasted either through the application of dry compressed air or brushing off with isopropyl alcohol.



Mixing

1. To mix Atlas Metal Rebuild-HT measure a 4:1 mixing ratio or empty entire contents onto a clean mixing board.
2. Mix thoroughly with a putty knife until the mixture becomes a uniform color. This should take approximately 2 minutes. Ensure there are no streaks of different colors in the mix or unmixed material on the putty knife.
3. For mixing larger quantities, a mixing paddle and heavy duty, slow speed drill may be used. However, the mechanical energy put into the mix by the drill may result in a shortened working time and a reduction of the non-sag characteristics of Atlas Metal Rebuild-HT.
4. Mixing at temperatures below 41°F may be difficult. It is recommended that the Base and Hardener be heated to a temperature between 68°F and 77°F in a hot water bath prior to mixing in order to ease the mixing process
5. Ensure correct mixing. Poor mixing will result in soft spots, poor curing and loss of physical properties.



Application

1. Apply Atlas Metal Rebuild-HT directly on to the prepared surface with a spatula or putty knife. The first layer must always be a thin layer that wets the substrate and creates tack for the following layers.
2. Build upon the first layer to the desired thickness. If a smooth finish is desired, its recommended to occasionally wet the applicator with Xylene during application of the last layer so that the applicator can easily slide on the material and creates the desired smooth finish.
3. Multiple layers can be applied within 2 to 4 hours of the previous coat @ 75°F. Maximum recoat @ 75°F is 24 hours. If more than 24 hours pass, the material should be lightly sanded before additional layers can be applied.
4. Metal Rebuild-HT can be applied at a finished thickness of at least 1/8", but may be built to 1" or more.
5. If a screen or expanded metal is used for reinforcement, apply an excess of material at one end of the area and push it through the screen. Push the material so that it wets the surface below the screen and moves in a continuous mass toward the other end of the area.



Clean-up and Considerations

Clean Atlas Metal Rebuild-HT from tools with isopropyl alcohol, acetone or mineral spirits. This should only be done before it has hardened. Alternatively, Metal Rebuild-HT can be allowed to cure on the Atlas Mixing Knife or Atlas Applicator and easily removed by flexing or bending the mixing knife and applicator.

Once fully cured Metal Rebuild-HT may be cleaned with commercial and industrial cleaners. Always rinse with clean water after cleaning. Aggressive cleaning chemicals should not be left standing over for longer than 3 hours.



Safety & Warranty

Atlas Metal Rebuild-HT is an epoxy resin system. Please refer to the Safety Data Sheets prior to using this product. Do not weld on or near the epoxy, hazardous fumes will be released.

Atlas Polymers, Corp. guarantees this product will meet the performance claims stated herein when material is stored and used as instructed in this document. Atlas Polymers further guarantees that all its products are carefully manufactured to ensure the highest quality possible and tested strictly in accordance with universally recognized standards. Since Atlas Polymers has no control over the use of the product described herein, no warranty for any application can be given.