Which Product is Right for Your Application?

Accessory Products

Product	Description
ITW PRC Expansion Joint Compound	2-component, epoxy resin formulation intended as a flexible foundation seam sealant. Self-leveling; flows smoothly; good adhesive strength and flexibility over a wide temperature range. Used to seal joints where expansion and contraction movement will take place. Remains flexible over a wide temperature range, 0°F to 150°F (-18°C to 65°C). Durable and weather resistant. Vibration and impact resistant
IMPAX Flexible Joint Sealant	2-component, polymer hybrid compound containing both urethane and epoxy resins that provides a tough, resilient filler for expansion joints; excellent flexural strength and elongation while maintaining impressive tensile strength; good adhesive strength and flexibility over a wide temperature range.
ITW PRC Repair Compound	2-component, 100% solids, epoxy paste developed specifically for filling, smoothing and fairing applications on metals, plastics (FRP), wood or masonry. Smooth consistency and excellent non-sagging properties. Excellent resistance to fresh water, salt water, crude and refined oils, gasoline, jet fuel. Provides a tough, uniform surface that will readily accept any top coating or lining. The cured epoxy is readily sanded or ground. The excellent feathering properties facilitate achieving a precision surface profile or smoothness. Contains no metallic fillers.
ITW PRC Concrete Adhesive	A specially formulated epoxy adhesive resin system designed for pressure injection repairs to concrete and adhesion of new concrete to old concrete.
ITW PRC Rust Inhibitive Primer 7CZ	2-component, lead and chromate free, rust inhibitive epoxy primer specifically designed for use in conjunction with ITW Polymer Technologies products applied to metal substrates. Recommended for use as a metal primer in severe industrial and chemical environments. Possesses excellent adhesion to properly prepared iron and steel surfaces, providing rust resistance to ferrous substrates, both on initial application and in the event of damage to the topcoat. Can be used under many epoxy, urethane, vinyl, chlorinated rubber and coal tar/epoxy finish coats.
Super Alloy Titanium Repair Compound	The latest in high technology, high bond strength repair systems. Use to join such dissimilar metals as iron, steel, aluminum, tungsten carbide, brass, zinc, and zinc alloys without the problems of galvanic corrosion. Adheres tenaciously to properly prepared surfaces. Hardens to a rigid metallic mass which permits drilling, tapping, or machining with ordinary metalworking tools. Maintains an integral bond, a high level of resistance to impact, abrasion, chemicals and high temperature.
Super Ceramic Repair Putty	Smooth, ceramic-filled epoxy putty with exceptional wear resistance. The "no-slump" nature makes it ideal for repairing overhead, vertical or curved surfaces. Well suited for the repair of severe service equipment commonly found in a variety of industrial and marine applications.
Super Ceramic Repair Liquid	A unique ceramic filled, high build, brush able epoxy coating. Formulated for unequaled chemical and corrosion resistance with outstanding wear properties in adverse environments. Ideally suited for lining and resurfacing all types of severe service equipment commonly found in a variety of industrial and marine applications.
Phillybond #6	2-component, high strength epoxy paste for the repair of punctures or cracks in tanks, pumps, pipes, steam lines, sea chests, valve bodies, and many other applications. The material is also used to fill holes, voids and to provide a smooth surface for repairs at temperatures up to 428°F (220°C). Resistant to most acids, alkali and hydrocarbons and will adhere to clean surfaces such as steel, cast iron, bronze, aluminum, copper, nickel, wood and most plastics.
Phillyclad #8	2-component, fast-setting epoxy laminating resin system designed for high strength fiberglass reinforced repairs to pipes, tanks, valves, and other equipment subject to corrosion or erosion. Used to repair leaks in areas at operating temperatures to 428°F (220°C). Excellent resistance to salt water, crude and refined oil, gasoline, caustics and most acids.
IMPAX IXT-59 Solvent	An aromatic hydrocarbon solvent used for general epoxy cleanup of tools and equipment used for mixing and applying epoxy materials. It must be used before the epoxy has set. Also used for removing grease, oil and other contaminants from surfaces prior to applying epoxy materials.
Release Agent	Release Agent prevents adhesion between most ITW Polymer Technologies' products and surfaces of metal, glass, rubber and many plastics. Used where the minimum possible clearance between resin and mating surface is required.

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EQUIPMENT FOUNDATION SYSTEMS

ITW Polymer Technologies

Expansion Joint Compound

Technical Bulletin # 1018C

Product Description

ITW POLYMER TECHNOLOGIES EXPANSION JOINT COMPOUND is a two component epoxy resin formulation intended as a flexible foundation seam sealant. It is self-leveling, flows smoothly and has good adhesive strength and flexibility over a wide temperature range.

Use & Benefits

ITW POLYMER TECHNOLOGIES EXPANSION JOINT COMPOUND is used to seal joints where expansion and contraction movement will take place. For best results, design the joint to be twice as wide as is deep.

A few of the benefits include:

- Excellent adhesion to concrete, masonry, cured epoxy, glass, aluminum, steel, wood and many other construction materials.
- Remains flexible over a wide temperature range, 0ºF to 150ºF (-18ºC to 65ºC).
- Durable and weather resistant.
- Vibration and impact resistant.

Surface Preparations

Store the resin and hardener at between 70ºF (21ºC) and 80ºF (27ºC) for 24 hours before use. All surfaces must be sound, clean and dry. Remove all oils, grease, previous caulking, efflorescence and protective coating, etc. New concrete must be completely cured. Application should be made when the joint is as near mid-working temperature range as practicable, but above 55ºF (13ºC). Mix EXPANSION JOINT COMPOUND by adding the hardener to the resin can and using a small Jiffy mixer blade at 200 rpm in an electric drill. Mix for three minutes. Clean all tools with PRT-59 solvent. A trowelable mixture can be made by adding dry sand to mixed EXPANSION JOINT COMPOUND.

Physical Properties

ELONGATION	200%
SERVICE TEMPERATURE	0ºF - 150ºF (-18ºC to 65ºC)

Product Information

COLORS	Red or Gray
MIX RATIO	12 parts resin to 1 part hardener
COVERAGE	152 cu. in. (2.5 liters)
APPLICATION TEMPERATURE	Above 13°C (55°F)
CURE TIME (approximate)	24 hours at 75ºF (24ºC) 48 hours at 55ºF (13ºC)
POT LIFE	45 minutes
CLEAN UP	IMPAX IXT-59 Solvent
UNIT WEIGHT	Resin: 1 gallon can. Net weight 6 lbs. 8 oz. (2.95 kg) Hardener: 1 pint can. Net weight 8.5 oz. (241 g)

Date

10/2005

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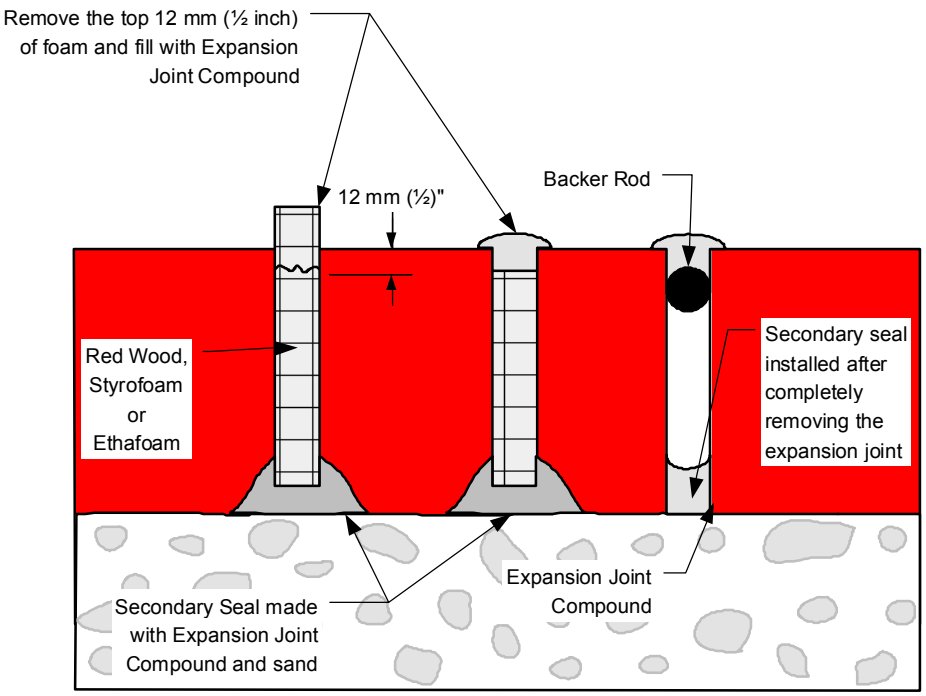

EQUIPMENT FOUNDATION SYSTEMS

Chockfast ESCOWELD

IMPAX Flexible Joint Sealant

Technical Bulletin # 1027A

Product Description

IMPAX Flexible Joint Sealant is a two-component, polymer hybrid compound containing both urethane and epoxy resins that provides a tough, resilient filler for expansion joints. This unique chemistry allows excellent flexural strength and elongation while maintaining impressive tensile strength. It also has good adhesive strength and flexibility over a wide temperature range.

Use & Benefits

IMPAX Flexible Joint Sealant is a filler and sealer for engineered control joints to prevent damage to the joint and its edges. It is also suitable for sealing cracks. Benefits include:

- 100% Solids, solvent-free product
- Excellent adhesive strength and flexibility
- Pourable grade, superior workability
- Easily mixed with drill and mixing blade
- High chemical resistance

Surface Preparations

All surfaces must be sound, clean and dry. Remove all oils, grease and other foreign or unwanted material, in and around the joint prior to application. Insert a backer rod into the joint to the desired depth of the joint sealant. The depth of the joint sealant is measured from the top of the backer rod to the top of the joint. To insure adequate joint elasticity, the depth of the sealant should not exceed twice the joint width. Tape off the joint up to the edge on either side.

Application Instructions

The application surfaces and joint sealant material must be at a sensible working temperature range during application (see back for application temperature information). Dual cartridge kits come with a static mixer. Larger quantities should be power mixed using equal parts of Component A and Component B until streak-free using a Jiffy Model HS or equal mixing blade. Dispense or pour mixture slowly into the joint allowing the material to settle. A second application may be necessary if material settles too much. Scrape excess sealant flush with top of joint using putty knife and remove tape.

Estimating Guide

Linear Feet Per Gallon of Sealant Required
Each Gallon Yields Approximately 231 cu. in.

	Width of Joint						
Depth of Joint Sealant	1/4”	3/8”	1/2”	5/8”	3/4”	7/8”	1”
1/4”	308	205	154	123	102	88	77
3/8”		136	102	82	68	58	51
1/2”			77	61	51	44	38
5/8”				49	41	35	30
3/4”					34	29	25
7/8”						25	22
1”							19

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Physical Properties

TENSILE ELONGATION	50% @ Breaking Point @ 72°F (22°C)
VISCOSITY	Part A - 350 to 550 Poise Part B - 200 to 350 Poise Mixed – 17,000 cps
FLASH POINT	200°F (93°C)
VOCs	0 lbs./gal. (0 gms./ltr.) - based on mixed components
SERVICE TEMPERATURE	-40°F to 200°F (-40°C to 93°C)

Product Information

COLOR	Gray
MIX RATIO	1:1 equal parts resin/hardener by volume
PACKAGING	600 ml Dual Cartridge Kit with Static Mixing Nozzle. Comes 12 Kits to the case. 1 gal. unit consists of 1/2 gallon can of resin and 1/2 gallon can of hardener (3.78 liters unit volume
COVERAGE (approximate)	600 ml Cartridge – 37 in^3 (0.16 gal) 1 Gal Unit - 231 in^3 (1,490 cc)
APPLICATION TEMPERATURE	55° minimum to 100°F maximum (13° C min to 38° C max) *Must be 5°F above dew point
CURE TIME (approximate)	Moderate Service -- 24 hrs. @ 72°F (22°C) @ 50% RH Full Cure -- 5 days @ 72°F (22°C) @ 50% RH
POT LIFE	45 mins. @ 72°F (22°C)
CLEAN UP	IMPAX IXT 59 Solvent
SHIPPING WEIGHT	1-gal. Unit – 16.5 Lbs. (7.48 Kg)
PACKAGING per Unit	Resin (NH) - 6 lbs. (2.7 kg), 0.72 gal (2.7 L) in a 1/2 gal can, Hardener (H) – 6 lbs. (2.7 kg), 0.72 gal (2.7 L) in a 1/2 gal can
SHELF LIFE	12 months in closed container stored @ 50°F to 90°F (10°C to 32°C)

Precautions

Provide ample ventilation in all areas of handling, mixing and use. Avoid prolonged breathing of possible fumes. Minimize skin contact. Use of goggles, rubber gloves and protective creams is recommended. Always wash exposed areas immediately using warm water and soap, followed by rinsing with clear water. Observe all safety precautions when using any type of solvent for skinning or cleaning tools and equipment.

Date

1/2009

EQUIPMENT FOUNDATION SYSTEMS

ITW Polymer Technologies **Repair Compound**

A General Purpose Repair Epoxy

Technical Bulletin # 1015B

Product Description

ITW Polymer Technologies' REPAIR COMPOUND is a two component epoxy paste developed specifically for filling, smoothing and fairing applications on metals, plastics (FRP), wood or masonry. The smooth consistency and excellent non-sagging properties of REPAIR COMPOUND make it unexcelled for leveling rough or pitted plating, forming fillets, smoothing weld seams, etc. REPAIR COMPOUND Is nontoxic and contains no solvents. Resistance to fresh water, salt water, crude and refined oils, gasoline, jet fuel, etc., is excellent.

Use & Benefits

REPAIR COMPOUND is ideal for repairing and preparing surfaces of hulls, storage tanks, sonar domes, etc., for painting, fiberglass applications or rubber lining where all welds, pitting, rough surfaces or irregularities are required to be smoothed. The use of REPAIR COMPOUND provides a tough, uniform surface that will readily accept any top coating or lining.

Its exceptional troweling and application characteristics provide a smooth finished surface. If additional finishing is desirable, the cured epoxy is readily sanded or ground. The excellent feathering properties facilitate achieving a precision surface profile or smoothness.

Pump casings, impellers, sea chests, condenser boxes, etc., are easily and effectively repaired with REPAIR COMPOUND. Additional uses include the fairing of corroded or uneven hull and deck plating, repair of cavitation damage, repair and sealing of riveted seams, etc. REPAIR COMPOUND is ideally suited for fairing around sensitive electrical equipment, as it contains no metallic fillers.

Surface Preparations

The adhesion of REPAIR COMPOUND is greatly improved by removing all grease, rust, scale and paint from surface before application. Sand-blasting of metal surfaces to SSPC #10 Near White is the preferred preparation, but sanding, grinding or hand chipping are acceptable for small areas. Un-coated fiberglass or wood requires grinding or sanding to roughen and clean surface. Compound may be used for fairing over sound old coatings if surface is lightly abraded by sanding to maximize adhesion.

Remove all grease and oil films by thoroughly cleaning surface with clean rags saturated with TriChloroEthylene, Xylene or IMPAX IXT-59 Solvent.

Application Instructions

Place equal quantities by volume of blue resin and white hardener on small palette or mortarboard with putty knife. Thoroughly mix the equal quantities together until a uniform streak-free blue color is achieved. A complete inter-mixing of the two components is essential for proper curing.

Working time of mixed material is one hour at 72ºF (22ºC), longer at lower temperatures, shorter at higher temperatures.

REPAIR COMPOUND will hard cure and is readily over coated, ground or sanded in 6 hours at 70ºF (21ºC). Up to 8 hours may be required at 50ºF (10ºC). Hand or tool dampened with water aids in smoothing. Clean tools and equipment with epoxy solvent or IMPAX IXT-59 Solvent.

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Physical Properties

COMPRESSIVE STRENGTH	8,900 psi (623 kg/cm^2)	ASTM D-695
TENSILE STRENGTH	2,600 psi (183 kg/cm^2)	ASTM D-638
HARDNESS	65-70 Shore D after 8 hours @ 72ºF (22ºC) 80-85 Shore D after 24 hours @ 72ºF (22ºC)	ASTM 4-2240
IZOD IMPACT STRENGTH	5.3 in.lb./in (0.24 Newton meters/cm)	ASTM D-258
SERVICE TEMPERATURE		
SPECIFIC GRAVITY	1.45	

Product Information

COLOR	Resin – Blue Hardener – Cream Mixed - Blue
MIX RATIO	1 : 1 By Volume
UNIT COVERAGE	25 ft^2 (2.3 m^2)@ 1/8 in (3 mm) thick per 2 gallon kit
APPLICATION TEMPERATURE	Above 13°C (55°F)
CURE TIME (approximate)	Sandable: 3 hours @ 72ºF (22ºC) Hard Cure: 8 hours @ 72ºF (22Cº) Full Cure: 24 hours @ 72ºF (22ºC)
POT LIFE	70 min. @ 72ºF (22ºC)
CLEAN UP	IMPAX IXT-59 Epoxy Solvent
UNIT PACKAGING	Resin (NH): 3.2 L (0.84 gal) in a 1 gal can Hardener (NH): 3.6 L (0.94 gal) in a 1 gal can
UNIT WEIGHT	Resin: 4.6 kg (10.2 lbs) Hardener: 5.5 kg (12.2 lbs)
SHIPPING WEIGHT	11.3 kg (25 lbs)
SHELF LIFE	One year (closed container)

Date

10/2005

EQUIPMENT FOUNDATION SYSTEMS

ITW Polymer Technologies

Concrete Adhesive

Repairs Cracks & Improves Adhesion

Technical Bulletin # 1014A

Product Description

ITW Polymer Technologies CONCRETE ADHESIVE is a specially formulated epoxy adhesive system designed for pressure injection repairs to concrete and adhesion of new concrete to old concrete.

Use & Benefits

Use CONCRETE ADHESIVE to repair cracks in equipment foundations before grouting or to improve the bond between old concrete and new concrete.

Application Instructions

CONCRETE ADHESIVE is supplied in pre-measured, one gallon units. Mixing is accomplished by pouring the Hardener component into the slack filled Resin can and mixing until homogeneous. The use of a slow speed power mixer with an ITW Polymer Technologies' Jiffy mixer blade is recommended.

When using CONCRETE ADHESIVE between new and old concrete, pour new concrete within 3 hours of application of CONCRETE ADHESIVE while the adhesive is still wet to the touch.

Physical Properties

FLEXURAL STRENGTH	4,600 psi (323 kg/cm^2)	ASTM C-582
FLEXURAL MODULUS OF ELASTICITY	1.15 x 105 psi (80870 kg/cm2)	ASTM C-582
ELONGATION	56%	
TENSILE STRENGTH	4,050 psi (285 kg/cm2)	ASTM D-640
HARDNESS - BARCOL	62 @ 72ºF (22ºC) - 24 hours 78 @ 72ºF (22ºC)- 48 hours	
SERVICE TEMPERATURE		
SPECIFIC GRAVITY	1.07 gm/cm3)	
VISCOSITY	1,000 to 1,500 cps @ 72ºF (22ºC)	

Product Information

COVERAGE	230 in^3 (3769 cm^3)
APPLICATION TEMPERATURE	Above 13°C (55°F)
CURE TIME (approximate)	18 hours @ 72ºF (22ºC) 48 hours @ 72ºF (22ºC)
POT LIFE	40 Minutes @ 72ºF (22ºC)
CLEAN UP	IMPAX IXT-59 Solvent or equal
UNIT PACKAGING	Resin (NH): 2.1 L (0.56 gal) in a 1 gal can Hardener (NH): 1.7 L (0.45 gal) in a ½ gal can
UNIT WEIGHT	Resin: 2.5 kg (5.6 lbs) Hardener: 1.6 kg (3.6 lbs)
SHIPPING WEIGHT	4.8 kg (10.5 lbs)
SHELF LIFE	1 year

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Date 09/2005

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EQUIPMENT FOUNDATION SYSTEMS

ITW Polymer Technologies

ITW RUST INHIBITIVE 7CZ PRIMER

Technical Bulletin # 1035

Product Description

ITW RUST INHIBITIVE 7CZ PRIMER is a lead and chromate free, rust inhibitive, two-component, epoxy primer specifically designed for use in conjunction with ITW Polymer Technologies coatings applied to metal substrates. It meets USDA standards for maintenance protective coatings not in direct contact with food in federally inspected meat and poultry plants.

Use & Benefits

ITW RUST INHIBITIVE 7CZ PRIMER is recommended for use as a metal primer in severe industrial and chemical environments. It possesses excellent adhesion to properly prepared iron and steel surfaces, providing rust resistance to ferrous substrates, both on initial application and in the event of damage to the topcoat. It can be used under many epoxy, urethane, vinyl, chlorinated rubber and coal tar/epoxy finish coats.

Surface Preparation

Steel: Surfaces must be dry, clean and free of all previous coatings, rust and surface contamination. Minimum surface preparation is abrasive blast to Commercial Grade SP-6. Blasted surfaces must be coated within 8 hours. Prior to blast cleaning, remove all deposits of oil or grease using Solvent Clean method SP-1.

Previously Painted Surfaces: If the paint is peeling or degrading in any way, it should be completely removed by sanding, blasting or stripping. If previous paint coating is completely intact, the surface may be cleaned with a strong detergent or solvent and scuff sanded to remove the gloss. A spot test should be made by applying a small amount of coating over old paint. The old finish may wrinkle or lift within 60 minutes. If it does not, wait 5 days and test for adhesion. Do this by cutting an "X" into the coating, place tape firmly over the cut, then strip with a hard, fast pull. If the old finish fails, it must be removed.

Application Instructions

1. Application should only take place when surface and ambient temperature is 40°F (4.4°C) or above and the material temperature is no lower than 50°F. Application not recommended with surface temperatures over 140°F. Surface to be painted must be at least 5°F(3°C) above the dew point.
2. ITW RUST INHIBITIVE 7CZ PRIMER should be applied to a minimum 2-3 mils (50-75 microns) dry film thickness above the averaged surface profile.
3. ITW RUST INHIBITIVE 7CZ PRIMER can be applied by spray, roller or brush. Spraying should be done perpendicular to the surface to insure complete coverage. Each pass of the spray gun should overlap the previous pass by 50%. Weld seams and edges should be stripe coated prior to complete prime coat.
4. ITW RUST INHIBITIVE 7CZ PRIMER is a two-part compound. Mechanically mix the base portion until homogenous. Pour the hardener into the container of base material and mechanically stir thoroughly until uniform (approximately three minutes). NO THINNERS MAY BE ADDED. Make sure that all sediment is stirred up off the bottom of the can.
5. ITW RUST INHIBITIVE 7CZ PRIMER does not require the usual induction period and may be applied immediately after mixing. Working pot life is 4 hours at 70°F.
6. The primed surface should be protected from contamination. Block off area to prevent any foot or rolling traffic.

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7. If the non-skid application is delayed so that the surface becomes contaminated, clean the area again. Tack coat is not normally required provided the non-skid application is made within 7 days at 70°F (21°C). After 7 days, the primed surface must be mechanically abraided or brush blasted prior to application of a tack coat.
8. Clean tools and spray equipment immediately after completing installation using an epoxy solvent compliant with state and federal V.O.C. regulations.

Physical Properties

COLOR:	Gray
VOLUME SOLIDS (%):	71%
V.O.C:	2.0 lbs. per gal. (250 grams/liter)
POT LIFE:	4 hours @ 70ºF (21ºC)
DRY TIME:	Tack Free - 1 3/4 hour @ 70ºF (21ºC) Recoat - 12 hours @ 70ºF (21ºC)
COVERAGE:	270 sq. ft./gal. (4 milsDFT/6.5 mils WFT)
APPLICATION TEMPERATURE:	55ºF minimum to 95ºF maximum (13ºC minimum to 35ºF maximum) * 5ºF (3ºC) above dew point
SHELF LIFE:	12 months
RELATIVE HUMIDITY:	85% maximum
REDUCER:	None
CLEAN UP:	IMPAX IXT-59 Solvent
WEIGHT PER GALLON:	12.7 lbs. per gal. (1.52 kg./liter)
UNIT PACKAGING:	Resin (NH): 2.9 L (0.77 gal) in a 1 gal can Hardener (NH): 0.87 L (0.23 gal) in a quart can
UNIT WEIGHT:	Resin: 4.9 kg (10.8 lbs) Hardener: 0.86 kg (1.9 lbs)

Date

10/2007

EQUIPMENT FOUNDATION SYSTEMS

ITW Polymer Technologies

Super Alloy Titanium Repair Compound

Technical Bulletin # 820K

Product Description

SUPER ALLOY Titanium Repair Compound is the latest in high technology, high bond strength repair systems. The SUPER ALLOY system was conceived through a program utilizing "state-of-the-art" computer science and systematic evaluations. Long, intensive studies resulted in SUPER ALLOY'S specific formulation providing industry with a fast, permanent repair to equipment that might otherwise require costly "downtime." The SUPER ALLOY system is the ideal solution to joining such dissimilar metals as iron, steel, aluminum, tungsten carbide, brass, zinc, and zinc alloys without the problems of galvanic corrosion.

Use & Benefits

- SUPER ALLOY adheres tenaciously to properly prepared surfaces.
- SUPER ALLOY's advanced capabilities allow expedient repairs of castings, blocks, foundations, shafts and other equipment without the use of heat, pressure or special tools. The material hardens to a rigid metallic mass which permits drilling, tapping, or machining with ordinary metalworking tools.
- Super ALLOY creates an integral bond, maintaining a high level of resistance to impact, abrasion, chemicals and high temperature.

Surface Preparations

Roughen" an area slightly larger than the damaged area by abrasive blasting. An 8-40 mesh grit size is best. When conditions do not allow abrasive blasting, a grinding wheel may be used. Wash the abraded surface with Impax IXT-59 or similar solvent to remove all dust, grit and grease. Be careful not to touch the area with bare hands once the area is solvent washed. NOTE: SUPER ALLOY should be applied to the repair area immediately upon completion of surface preparation to prevent oxidation of un-coated metal.

Application Instructions

Place three parts resin and one part hardener by volume on a clean SUPER ALLOY mat and mix thoroughly. Mix only as long as is necessary to obtain a uniform, streak-free color. NOTE: Mix only as much as can be used in 15-20 minutes.

We advise repairing only non-stress cracks that resulted from impact due to foreign objects or freezing. DO NOT use SUPER ALLOY to repair cracks caused by metal fatigue. Terminate the crack by drilling holes at each end. Diameter of the holes should be 4.8mm (3/16") plus the width of the crack. If the crack exceeds 150mm (6") in length, holes should be drilled every 75mm (3"). Force SUPER ALLOY into the crack and then apply more metallic paste over the entire prepared surface at a nominal thickness 6mm (1/4").

Small holes or severely pitted metal may be repaired by filling the affected area and then fairing out over the edges. To repair large holes, first apply a temporary backing plate (an extra SUPER ALLOY mat works well) to the inside of the damaged area. Fill the void with SUPER ALLOY until the material is slightly above the finished surface. Allow to cure for two hours. Apply final layer of SUPER ALLOY to the entire area at a nominal thickness of 6mm (1/4") to 9.5mm (3/8"). Allow repair area to cure for 18 hours at 22°C (72°F).

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Physical Properties

COMPRESSIVE STRENGTH	1,070 kp/cm2 (15,200 psi)	ASTM C-695
LINEAR SHRINKAGE	0.001 in/in. (0.001 mm/mm)	ASTM D-2566
COEFFICIENT OF LINEAR THERMAL EXPANSION	40.1 x 10^{-6} /C° (22.3 x 10^{-6} /F°)	ASTM D-698
FLEXURAL STRENGTH	542 kp/cm2 (7,700 psi)	ASTM C-790
ADHESIVE TENSILE SHEAR STRENGTH	140 kp/cm2 (2,000 psi)	ASTM D-1002
HARDNESS	Shore D = 87	ASTM D-1076
ABRASION RESISTANCE	20 mg/1000 cycles Average 5000 cycles	Federal Test standard 406 method 1091
SERVICE TEMPERATURE	Up to 250°F (121°C)	

Product Information

COLOR	Resin > Silver / Hardener > Gray = Gray after mixing
COVERAGE	190 cc (12 cu.in.)
MIX RATIO	3-1 resin to hard. by vol; 4.3-1 resin to hard. by wt.
APPLICATION TEMPERATURE	13°C (55°F) to 35°C (95°F)
CURE TIME (approximate)	18 hours @ 22°C (72°F)
POT LIFE	25 minutes @ 22°C (72°F)
CLEAN UP	IMPAX IXT-59 Epoxy Solvent or equivalent
UNIT PACKAGING	Resin (NH): 151 cc (5 oz) in a 12 oz plastic jar Hardener (NH): 38 cc (1.3 oz) in a 4 oz plastic jar
UNIT WEIGHT	Resin: 372 g (0.82 lbs) Hardener: 86 kg (0.09 lbs)
SHIPPING WEIGHT	816 g (1.8 lbs)
SHELF LIFE	2 years

Physical properties can be improved by heating the repair area "after" hardening at room temperature. Recommended method is to apply heat for two hours at 65°C (150°F).

Reference

For detailed information on shaft repairs, refer to SUPER PRODUCTS Repair Procedure #832. For detailed information on other repairs, contact ITW Polymer Technologies.

Date

09/2005

EQUIPMENT FOUNDATION SYSTEMS

ITW Polymer Technologies

Super Ceramic Repair Putty

Technical Bulletin # 821G

Product Description

SUPER CERAMIC Repair Putty is a smooth ceramic-filled epoxy putty with exceptional wear resistance. The "no-slump" nature of SUPER CERAMIC Repair Putty makes it ideal for repairing overhead, vertical or curved surfaces.

Use & Benefits

SUPER CERAMIC Repair Putty is well suited for the repair of "severe service" pump equipment commonly found in industries, such as pulp and paper mills, chemical processing, refineries, marine and coal mining operations as well as many others.

Surface Preparations

The repair area should be free of all grease, dirt and oxidation. The surface should be sandblasted to "near white" metal using an 8 to 40 mesh grit. Grinding is suitable for small areas or when other methods are prohibited. The entire area should then be washed down with IMPAX IXT-59 Safety Solvent.

NOTE: Be careful not to touch the repair area with bare hands after solvent washing. SUPER CERAMIC Repair Putty should be applied as soon as possible after blasting to prevent oxidation.

Application Instructions

SUPER CERAMIC Repair Putty's consistency was designed to provide a stiff mix to insure its "no-slump" capabilities when applied to overhead, vertical or curved surfaces.

Place 7 parts resin and 1 part hardener by weight or 4.3 parts resin and 1 part hardener by volume on a clean, flat surface and mix thoroughly with a trowel or wide blade tool. Material should have a streak-free gray color.

NOTE: Do not mix more than 4 minutes or "no-slump" properties may diminish. Do NOT power mix.

When repairing a pump casing, the entire housing should have approximately 3mm (1/8") of SUPER CERAMIC Repair Putty applied to it. Be sure to allow adequate clearance between housing and impeller. If it is not possible to coat the entire housing, do not feather edge the SUPER CERAMIC. Instead, square off the repair area to leave at least a 3mm (1/8") application of SUPER CERAMIC Repair Putty at the edge of the damaged area.

NOTE: Do not mix more material than can be applied in 20 minutes.

Top coating SUPER CERAMIC Repair Putty with additional layers must be accomplished prior to the first layer taking a hard set -- 4 hrs. @ 22°C (72°F). Once SUPER CERAMIC Repair Putty hardens, the surface must be brush blasted or abraded to insure inter-layer bonding of subsequent layers.

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Physical Properties

COMPRESSIVE STRENGTH	877.5 kp/cm^2 (12,700 psi)	ASTM D-695
COEFFICIENT OF LINEAR THERMAL EXPANSION	44.6 X 10^{-6}/ºC 24.8 X 10^{-6}/ºF	ASTM D-698
TENSILE SHEAR STRENGTH	125.4 kp/cm2 (1,800 psi)	ASTM D-1002
HARDNESS	Shore D = 90	ASTM D-1706
IZOD IMPACT STRENGTH	0.28 foot pounds/inch notch	ASTM D-256
SERVICE TEMPERATURE	-73ºC to 260ºC (-100ºF to 500ºF)	

Product Information

COLOR	Resin – Gray, Hardener – White Gray after mixing
MIX RATIO	7 to 1 by weight 4.3 to 1 by volume
COVERAGE	280 cc (17 cu.in.)
APPLICATION TEMPERATURE	13°C (55°F) to 35°C (95°F)
CURE TIME (approximate)	24 hours @ 22ºC (72ºF)
POT LIFE	20 minutes @ 22ºC (72ºF)
CLEAN UP	IMPAX IXT-59 Solvent or similar
APPLICATION TEMPERATURE	13°C (55°F) to 35°C (95°F)
UNIT PACKAGING	Resin (NH): 227 cc (7.7 oz) in a 12 oz plastic jar Hardener (NH): 53 cc (1.8 oz) in a 4 oz plastic jar
UNIT WEIGHT (1 lb kit)	Resin: 405 g (0.89 lbs) Hardener: 60 g (0.13 lbs)

Reference

For detailed information on the repair of eroded Kort nozzles, refer to SUPER PRODUCTS Repair Procedure #831. For detailed information on other repairs, contact ITW Polymer Technologies.

Date

10/2005

EQUIPMENT FOUNDATION SYSTEMS

ITW Polymer Technologies

Super Ceramic Repair Liquid

Technical Bulletin # 819F

Product Description

SUPER CERAMIC Repair Liquid is a unique ceramic filled, high build, brush able epoxy coating. Formulated for unequaled chemical and corrosion resistance with outstanding wear properties under adverse environments.

Use & Benefits

SUPER CERAMIC Repair Liquid is ideally suited for lining and resurfacing all types of severe service equipment commonly found in chemical plants, power plants, pulp & paper mills, mining operations, water treatment plants and a variety of other industrial and marine applications.

Surface Preparation

The repair area should be free of all grease, dirt and oxidation. The surface should be sandblasted to "near white" metal using an 8 to 40 mesh grit size. Grinding is suitable for small areas or when other methods are prohibited. The entire area should then be washed down with IMPAX IXT-59 Safety Solvent.

NOTE: Be careful not to touch the repair area with bare hands after solvent washing. Unit should be repaired as soon as possible after blasting to prevent oxidation.

Application Instructions

Place 5 parts resin (by volume) and 1 part hardener in a clean, smooth sided container and mix thoroughly. Material should have a streak-free dark orange color. Do not mix more than five minutes.

DO NOT mix more material than can be applied in 15 minutes.

SUPER CERAMIC Repair Liquid may then be applied with a stiff, short bristle brush or plastic squeegee. Apply a thin coat, wetting out the application surface to fill all pitted areas and sealing the metal surfaces against corrosion.

When lining new equipment, the entire interior housing should have approximately 1.5 mm (1/16") of ceramic liquid. Be certain to maintain proper clearances between housing and impeller. This preventative maintenance procedure will greatly extend the longevity of severe service equipment as well as reducing costs due to downtime.

NOTE: When applying more than one coat add the black tube of additive to the second coat to obtain a dark brown color. This will help differentiate between the coats. Top coating SUPER CERAMIC Repair Liquid with additional layers must be accomplished prior to the first layer taking a hard set - 2 hrs. @ 22°C (72°F). Once SUPER CERAMIC Repair Liquid hardens, the surface must be brush blasted or abraded to insure inter-layer bonding.

SUPER CERAMIC Repair Liquid was specifically designed for use with SUPER CERAMIC Repair Putty for restoring original equipment dimensions to severely damaged units. Refer to Bulletin #821.

Physical Properties

COMPRESSIVE STRENGTH	1190.0 kg/cm^2 (16,900 psi)	ASTM D-695
FLEXURAL STRENGTH	563.4 kg/cm2 (8000 psi)	ASTM D790
ADHESIVE TENSILE SHEAR STRENGTH	220.0 kg/cm^2 (3125 psi)	ASTM D1002
HARDNESS	Shore D = 90	
SERVICE TEMPERATURE	-73°C (-100°F) to 260°C (500°F)	

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Product Information

COLOR	Resin > Orange / Hardener > Black = Dark Orange after mixing Additive > Black = Dark Brown after mixing
COVERAGE	300 cm^3 (18 cubic inches.)
MIX RATIO	10 to 1 by weight 5 to 1 by volume
APPLICATION TEMPERATURE	13°C (55°F) to 35°C (95°F)
UNIT PACKAGING	Resin (NH): 265 cc (9 oz) in a 12 oz plastic jar Hardener (H): 38 cc (1.3 oz) in a 4 oz plastic jar
UNIT WEIGHT	Resin: 408 g (0.9 lbs) Hardener: 41 g (0.1 lbs)
SHIPPING WEIGHT	0.8 kg (1.8 lbs)
CHEMICAL RESISTANCE	Excellent against acids, bleach, and petroleum products.
CURE TIME (approximate)	24 hrs. @ 22ºC (72ºF)
POT LIFE	15 minutes @ 22ºC (72ºF)
CLEAN UP	IMPAX IXT-59 Epoxy Solvent or equal
SHELF LIFE	

Date

09/2005

INDUSTRIAL PRODUCTS

PHILLYBOND #6

Technical Bulletin # 470

Epoxy repair and patching compound

Product Description

PHILLYBOND #6 is a two-component, high strength epoxy paste for the repair of punctures or cracks in tanks, pumps, pipes, steam lines, sea chests, valve bodies, etc. The material is also used to fill holes, voids and to provide a smooth surface for repairs [at temperatures up to 428°F (220°C)], PHILLYBOND #6 is resistant to most acids, alkali and hydrocarbons and will adhere to clean surfaces such as steel, cast iron, bronze, aluminum, copper, nickel, wood and most plastics.

Surface Preparation

Repair surfaces must be clean and sound and free of oil, dirt, old paint and other foreign matter. Blast, abrade or clean surface with emery cloth to rough bright finish for best adhesion. Final rinse of surface with Impax IXT 59 solvent helps to ensure complete removal of grease and oils.

Mixing and Application Instructions

Mix white resin with black hardener - four parts resin to one part hardener by weight or volume - with putty knife or similar tool until a streak-free uniform color is achieved. As PHILLYBOND #6 is a fast curing system, mix only that amount that can be used in 10-15 minutes. Apply the mixed compound to the repair area forming a cross section of at least 3/8" (9.5mm) thick. The patch should extend at least 2" (5cm) on all sides of the damaged area. PHILLYBOND #6 may be smoothed by wetting putty knife with IXT 59 solvent or water. After hardening PHILLYBOND #6 can be machined or sanded, as desired, for a smoother surface.

Technical Information

COLOR:	Gray (resin – white; hardener – black)
CURE TIME:	1 hr @72 °F (22 °C) @ ½ " (12.7mm) thickness
MIXING RATIO:	4:1 by volume and weight
PACKAGING:	1 lb (454 grams) kit, 10 kits per case
	1 gallon (3.785 liter)kit
POT LIFE:	10 -15 minutes @72 °F (22 °C)
SHELF LIFE:	Two years/ Store in a cool dry area
TEMPERATURE RESISTANCE:	428 °F (220 °C)
SHEAR STRENGTH:	1000 psi (70.3 cm^2/kg)
VISCOSITY:	Paste putty
MIL SPEC:	R-17882-C

Date

07/2006

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INDUSTRIAL PRODUCTS

ITW Polymer Technologies

PHILLYCLAD® #8

Fast Set, Laminating Epoxy

Technical Bulletin # 966C

Product Description

PHILLYCLAD #8 is a two component fast setting epoxy laminating resin system designed for high strength fiberglass reinforced repairs to pipes, tanks, valves, and other equipment subject to corrosion or erosion.

Uses & Benefits

PHILLYCLAD #8 is also used to repair leaks in cargo heating coils, turbine drains, deck steam lines and other similar areas at operating temperatures to 220°C (428°F).

PHILLYCLAD #8 has excellent resistance to salt water, crude and refined oil, gasoline, caustics and most acids. When used with four layers of fiberglass tape PHILLYCLAD #8 has the capability to withstand in excess of 70 kg/cm$_2$ (1000 psi) hydrostatic pressure after one hour cure.

Surface Preparations

Repair effectiveness is dependent upon cleanliness of the surface of the repair area. Maximum adhesion is assured by removal of all grease, oil, paint and foreign matter. Surface must be cleaned to rough, bright metal finish by blasting, grinding or with emery cloth. Rinse surface with PRT-59 solvent to ensure a clean area.

Application Instructions

Do not mix hardener with resin until preparations are completed as working time of catalyzed material is approximately 15 minutes at 22°C (72°F). Mix PHILLYCLAD #8 by adding hardener to resin and stirring vigorously until a streak-free uniform color is achieved.

For repair of leaks, brush PHILLYCLAD #8 over an area extending 7.5cm (3") on each side of the repair area. Apply 3.75 or 7.5cm (1-1/2" or 3") fiberglass tape in a spiral wind, overlapping one-half of previous turn. Cover the coated area. Brush additional coat of PHILLYCLAD #8 and repeat for 4 wraps.

PHILLYCLAD #8 may also be used as a coating without fiberglass reinforcement and may be machined after it is fully cured using water as a coolant.

Physical Properties

TEMPERATURE RESISTANCE:	Up to 220°C (428°F)
VISCOSITY:	Liquid, Brushable, Pourable
MIL SPEC:	R-17882-C

Product Information

COLOR:	Resin - White Hardener - Black Mixed - Gray
MIX RATIO:	4:1 Resin to hardener by volume or weight
PACKAGING per Kit:	500 grams (1.1 lb.) Kit, 16 Kits per case
CURE TIME (approximate):	Glass reinforced patches 3.0 to 6.5mm (1/8" to 1/4") thick approximately 1 hour @ 22°C (72°F). Thinner coats and lower temperatures require longer.
POT LIFE:	10-15 min. @ 22°C (72°F)
SHELF LIFE:	2 years
CLEAN UP:	PRT-59 or similar epoxy solvent

Date

09/2008

EQUIPMENT FOUNDATION SYSTEMS

ITW Polymer Technologies

IMPAX IXT-59 Solvent

For General Epoxy Cleanup

Technical Bulletin # 859C

Product Description

IMPAX IXT-59 is an aromatic hydrocarbon solvent used for general epoxy cleanup of tools and equipment used for mixing and applying epoxy materials. It must be used before the epoxy has set. Formerly known as PRT-59, IXT-59 is also used for removing grease, oil and other contaminants from surfaces prior to applying epoxy materials.

Application Instructions

WARNING: IXT-59 Solvent causes skin irritation on prolonged contact and may cause eye irritation. Wash hands with soap and water immediately after cleaning up with IXT-59.

CAUTION: IXT-59 is FLAMMABLE.

Physical Properties

DENSITY	7.66 lb./gal. - (0.9 gr/cc)	ASTM C-581
FLASH POINT	89ºF (31.7ºC) Tag Closed Cup	ASTM C-582
POUR POINT	-139ºF (-95ºC)	ASTM D-2568

Product Information

PACKAGING / WEIGHT per Unit:	1 gallon – 8 lbs. (3.6 kg)
	5 Gallon – 40 lbs. (18 kg)
SHELF LIFE:	12 months in closed container

Date

09/2005

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EQUIPMENT FOUNDATION SYSTEMS

ITW Polymer Technologies

Release Agent

Technical Bulletin # 814C

Product Description

ITW POLYMER TECHNOLOGIES RELEASE AGENT prevents adhesion between most ITW Polymer Technologies' products and surfaces of metal, glass, rubber and many plastics. It is used where the minimum possible clearance between resin and mating surface is required.

Use & Benefits

RELEASE AGENT does not contain silicone oils. When properly used the release agent coating is only a few molecules thick and there is minimal, usually zero, transfer to the cast resin.

Application Instructions

The aerosol spray should be held 9" to 12" from the surface and a maximum of 1 second of spray on any given area will be ample. The surface should not appear wet even when freshly sprayed.

Do not substitute other release agents for ITW POLYMER TECHNOLOGIES RELEASE AGENT without testing their effect on adhesion, clearance and surface bubbling.

Date

10/2006

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