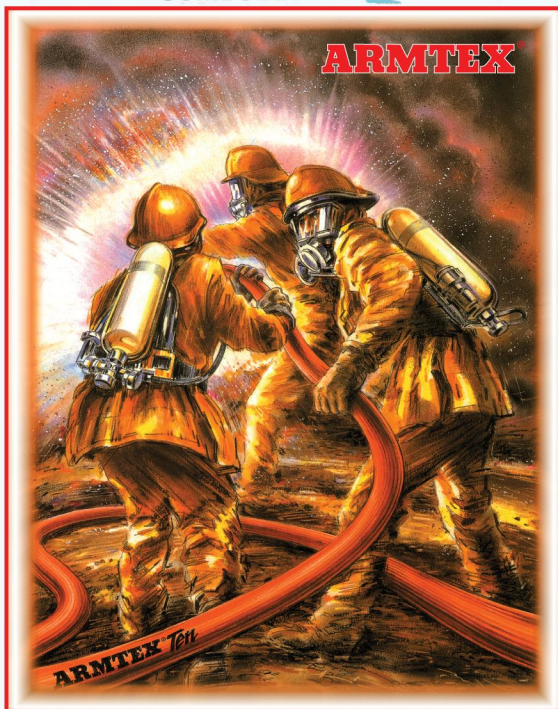


EIS EPOXY INDUSTRIAL SUPPLY SAFETY CATALOG



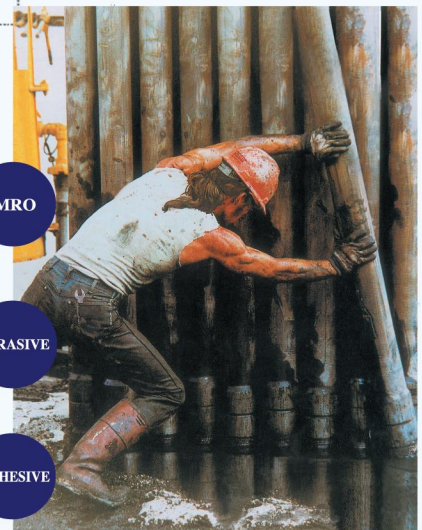
RESCUE



FIRE



JARUSSALAM



MRO

ABRASIVE

ADHESIVE

SAFETY

Devcon

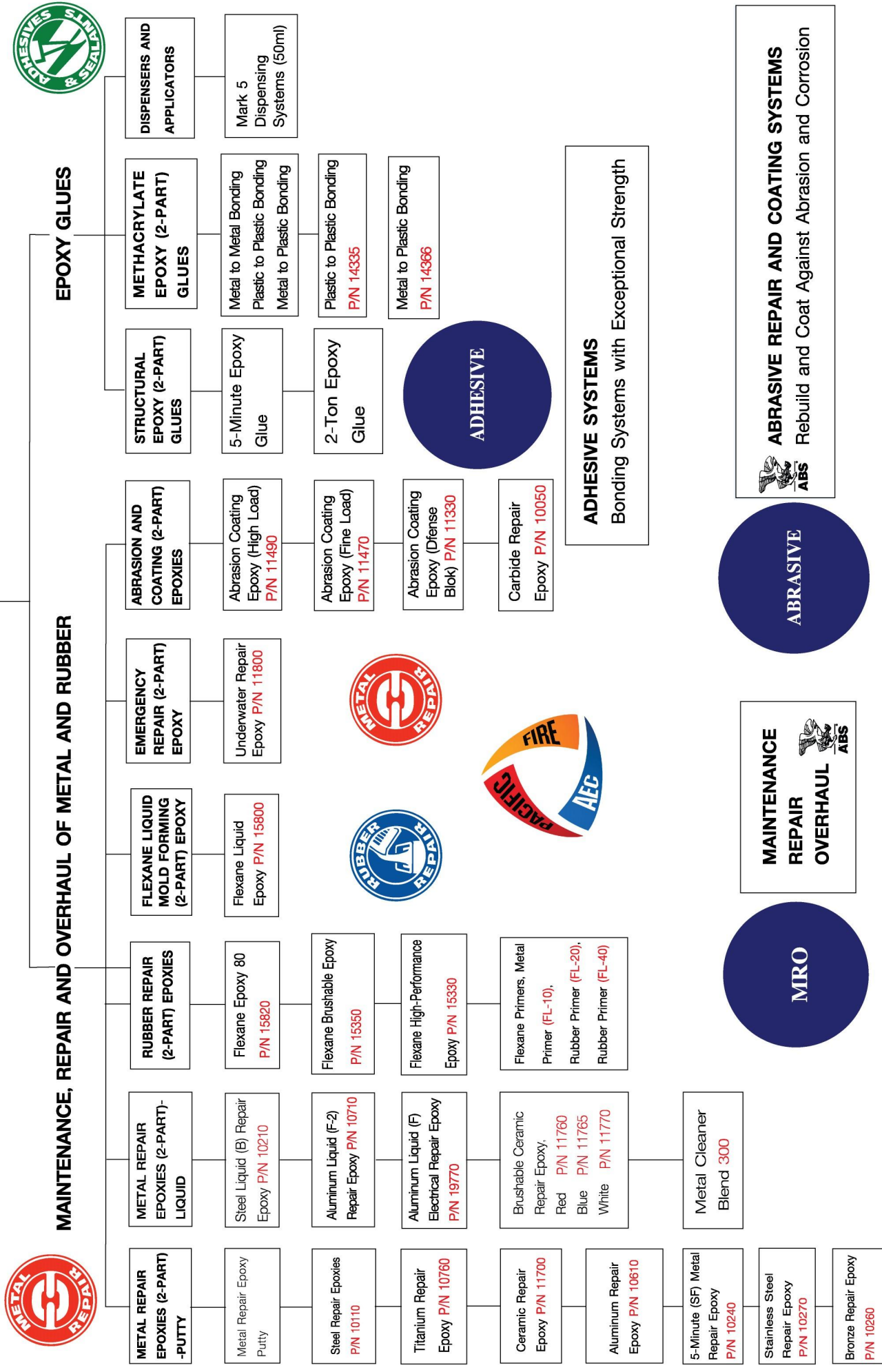
EIS



PACIFIC AND FIRE AEC Co., Ltd.

Tel. 0-2038-5840-41 Fax. 0-2886-7585 www.eis-pacific.com



Devcon® DEVCON PRODUCT APPLICATION



Metal Repair Selector Guide



METAL/EQUIPMENT REPAIR

 											
	Plastic Steel® Putty (A)	Aluminum Putty (F)	Titanium Putty	Magic Bond	Wear Guard High Temp.	Ceramic Repair Putty	Brushable Ceramic	Wear Guard High Load, Fine Load, Combo Wear	Plastic Steel B Alum F2	Stainless Steel Putty ST	Wet Surface Putty
METAL/EQUIPMENT REPAIR											
Acid Resistant Coating						▲	▲				
Casting Repair	▲	▲	▲								
Chemical Resistant Coatings			▲			▲					
Chocking, Leveling Compound								▲			
Coating (Impact, Abrasion)					▲	▲	▲	▲			
Condenser Tube Sheet Coating						▲					
Corrosion Resistant Coating					▲	▲	▲	▲			
Cyclones					▲			▲			
Epoxy (Fast-Cure Repairs)				▲							
Fans/Exhauster Fan Blades						▲		▲			
Holding Fixtures (Making Molds)									▲		
Hopper (Rebuild and Coat)							▲	▲			
Leaks (Drums, Pipes, Tanks)	▲			▲							
Lining Coal Chutes					▲			▲			
Machinable Repair Material	▲	▲	▲						▲	▲	
Meat & Poultry Plants	▲		▲				▲			▲	
Pipe Elbow Coatings/Linings					▲			▲			
Pulverizers/Mills					▲			▲			
Pump Repairs-Slurry			▲			▲		▲			
Pump Repairs-Water			▲								▲
Rebuild Worn threads, Keyways, Metal	▲		▲						▲		
Repairing Engine Blocks	▲		▲								
Shaft Repairs			▲								
Tank Linings					▲	▲					▲
Tank Repairs (Hole)	▲			▲							
Valve Rebuild/Repairs	▲	▲	▲								
Wet/Damp Surface Bonding				▲							▲

METAL REPAIR

Devcon®

METAL REPAIR PUTTIES

*Repair All Metal Surfaces * Match the Devcon Product to the Type of Metal (Steel, Stainless Steel, Aluminum, Brass, Alloys) * Prepare Surface * Mix Properly * Apply



PLASTIC STEEL A
P/N 10110



RESIN



HARDENER



PLASTIC STEEL-5 Minute (SF)
P/N 10240

REPAIR

*Gaps and Holes from Rust or Corrosion * Cracks * Castings, * Pipes *Keyways* Pump Bodies * Impellers * Tanks * Exhaust Fans* Rebuild Metal Threads * Linings

PLASTIC STEEL A: P/N 10110 (454 gr.) .03m @ .025 in (6.3mm) Thickness

Repairs: Steel Structures, Metal Plates, Cast Iron and Castings. Can be Machined, Drilled or Tapped.

Drying Color: Grey Putty. Working Time: 20 minutes. Full Cure: 16 hours.

Volume Mix Ratio: 2.5:1. Working Temperature: Dry: 121C, Wet: 50C

Adhesive Tensile Shear Strength: 2,800 psi. (19.31 MPa)

Compressive Strength: 8,260 psi (56.95 MPa)

Hardness: 85 Shore D

TDS/MSDS:[http://www.devcon.com/products/products.cfm?brand=Devcon&family=Plastic%20Steel%20AE%20Putty%20\(A\)](http://www.devcon.com/products/products.cfm?brand=Devcon&family=Plastic%20Steel%20AE%20Putty%20(A))

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American Bureau of Shipping



PLASTIC STEEL -5 Minute (SF): P/N 10240 (454 gr.) .03m @ .025 in (6.3mm) Thickness

Fast Repair: Steel structures, Metal Plates, Cast Iron and Castings. Can be Machined and Drilled.

Drying Color: Dark Grey Putty. Working Time: 5 minutes. Full Cure: 1 hour

Volume Mix Ratio: 1:1. Working Temperature: Dry: 95C

Adhesive Tensile Shear Strength: 2,026 psi. (14.0 MPa)

Compressive Strength: 10,400 psi (56.95 MPa)

Hardness: 85 Shore D

TDS/MSDS:<http://www.devcon.com/products/products.cfm?family->

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ALUMINUM PUTTY (F): P/N 10610 (454 gr.) .04m @ .025 in (6.3mm) Thickness

Repairs: Aluminum Castings and Non-rusting metal structures. Can be Machined and Drilled.

Drying Color: Aluminum Putty. Working Time: 20 minutes. Full Cure: 16 hours

Volume Mix Ratio: 4:1. Working Temperature: Dry: 121C, Wet: 50C

Adhesive Tensile Shear Strength: 2,026 psi. (14.0 MPa)

Compressive Strength: 8,240 psi (58.0 MPa)

Hardness: 85 Shore D

TDS/MSDS:<http://www.devcon.com/products/products.cfm?family->

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METAL REPAIR

Devcon®

METAL REPAIR PUTTIES

*Repair All Metal Surfaces * Match the Devcon Product to the Type of Metal (Steel, Stainless Steel, Aluminum, Brass, Alloys) * Prepare Surface * Mix Properly * Apply



STAINLESS STEEL ST P/N 10270



BRONZE BR P/N 10260

Proportional
Mixing



ALUMINUM F : P/N 10610

STAINLESS STEEL PUTTY (ST) : P/N 10270 (454 gr.) .03m @ .025 in (6.3mm) Thickness

Repairs: Rebuild, Repair Stainless Steel Structures and Tanks. Can be Machined, Drilled or Tapped.

Drying Color: Dark Grey Putty. Working Time: 20 minutes. Full Cure: 16 hours.

Volume Mix Ratio: 3.75:1. Working Temperature: Dry: 121C, Wet: 50C

Adhesive Tensile Shear Strength: 2,385 psi. (16.4 MPa)

Compressive Strength: 8,400 psi (57.9 MPa)

Hardness: 85 Shore D

TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=105&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

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BRONZE PUTTY (ST) : P/N 10260 (454 gr.) .03m @ .025 in (6.3mm) Thickness

Repairs: Bronze & Brass Parts, Castings and Bushings

Repairs: Rebuild, Repair Stainless Steel Structures and Tanks. Can be Machined, Drilled or Tapped.

Drying Color: Bronze Putty. Working Time: 20 minutes. Full Cure: 16 hours.

Volume Mix Ratio: 3:1. Working Temperature: Dry: 121C, Wet: 50C

Adhesive Tensile Shear Strength: 2,680 psi. (18.47 MPa)

Compressive Strength: 8,400 psi (58.88 MPa)

Hardness: 85 Shore D

TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=104&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

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ISSA MARINE PART NOS.	ISSA
Devcon #10110 Plastic Steel Putty (A), 454g	81-22-51
Devcon #10240 Plastic Steel 5 Minute (SF)	81-22-62
Devcon #10260 Bronze Putty (BR)	81-22-90
Devcon #10270 Stainless Steel (ST)	81-22-92
Devcon #11800 Underwater Repair Putty (UW)	81-22-46



PRECISION REPAIR

Devcon®

PRECISION REPAIR EPOXY for METAL REPAIR

* Repair Machine Parts * Suitable for Precision Machining * Strong Adhesion & Wear Resistance* Prepare Surface * Mix Properly * Apply* Machine

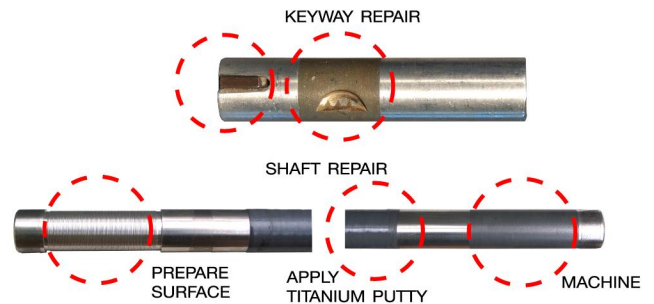


Titanium P/N 10760



Rebuild and Machine
To Original Dimensions
with TITANIUM PUTTY

TITANIUM REPAIR



REPAIR

*Bearing Housings & Shafts * Wear Rings * Keyways * Valves *Hydraulic Cylinders* Pump Parts * Hubs * Rebuild Metal Threads * Wear Parts * Valve Faces* Valve Seats

Titanium Putty: P/N 10760 (454 gr.) .03m @ .025 in (6.3mm) Thickness

Repairs: Rebuild Bearing Housings, Worn Shafts, Use with All Metals. Can be Machined, Drilled or Tapped.

Drying Color: Grey Putty. Working Time: 20 minutes. Full Cure: 16 hours.

Volume Mix Ratio: 3.1:1. Working Temperature: Dry: 155C, Wet: 66C

Adhesive Tensile Shear Strength: 2,000 psi. (13.78 MPa)

Compressive Strength: 15,200psi (104.8 MPa)

Hardness: 87 Shore D. Chemical Resistance: Excellence

TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=124&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

[id=124&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA](http://www.devcon.com/products/products.cfm?family-id=124&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)



Wear Resistant WR-2 Putty: P/N 11410 (454 gr.) .03m @ .025 in (6.3mm) Thickness

Repairs: Wear Resistant Epoxy for Repairing, Flange Faces, Abrasive Friction Damage. Can be Machined

Drying Color: Dark Grey Putty. Working Time: 20 minutes. Full Cure: 16 hours.

Volume Mix Ratio: 4.3:1. Working Temperature: Dry: 104C, Wet: 54C

Adhesive Tensile Shear Strength: 2,200 psi. (15.16 MPa)

Compressive Strength: 15,200psi (67.56 MPa)

Hardness: 85 Shore D. Chemical Resistance: Excellence

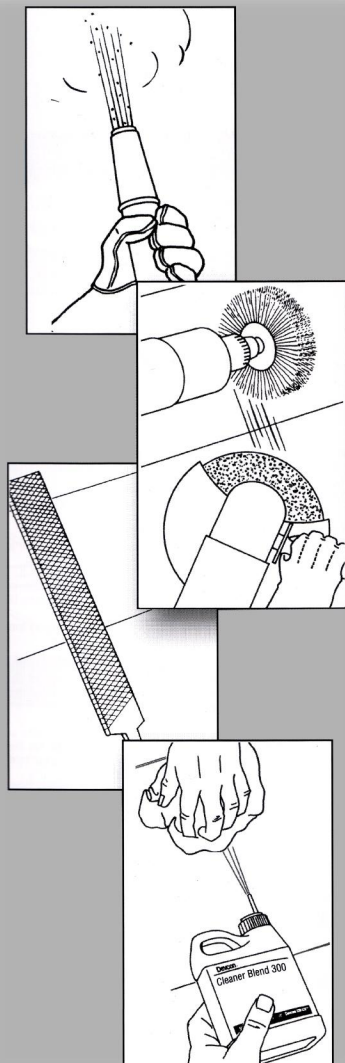
TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=111&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

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SURFACE PREPARATION



Devcon®



PREPARED SURFACE



CLEAN, GREASE FREE, ROUGH

DEGREASING

The degreasing of surfaces that are immersed in oil is usually the most difficult to do. There is always the possibility of the absorbed oil in the metal surface that will cause an adhesion problem after the epoxy is cured. An oily pump shaft or bearing housing is an excellent example of a part that would be immersed in oil prior to using Devcon Metal Repair Epoxies.

1. Apply Cleaner Blend 300 to the oily surface. Repeated applications of these cleaners will help to "draw" the oil out of the surface.
2. Absorbed oil from metal surfaces that have been constantly immersed in oil, should be removed by heat. The heat forces the oil out of the pores. Heating the part with a heat gun, or putting the part in an oven will produce this effect.
3. Allow the surface to cool and then degrease again with Cleaner Blend 300

SURFACE ROUGHENING

Always abrade a smooth surface to increase the adhesion of the epoxy to the substrate. Many field applications are redone because someone forgot to get a good surface profile.

1. If the surface was cleaned by abrasive blasting, grinding, shotblasting, or needle gun, the "roughen" effect should be sufficient to coat.
2. Otherwise, roughen the surface with a coarse sandpaper or a file.

WET SURFACES

1. General procedure concerning any area that is to be repaired using Devcon Industrial Epoxies: "It Must Be Dry!!!"
2. An exception is when you use Devcon's Wet Surface Epoxy UW. (See the Underwater Surfaces section.)
3. First stop all leaks or seepage. This may be done by many means:
 - a. Shut off the flow or pressure.
 - b. Fit a wooden peg or a sheetmetal screw into the hole to stop flow.
 - c. Stuff with wax, cork, plumber's caulk, Mortite, or a cloth into the opening to stop the flow of liquid.
4. If the leak is caused by corrosion, the side wall might be weak. Open the orifice until good metal is exposed and the wall is thick enough to be plugged. Then plug the opening with the recommended materials. (See number 3.)
5. Remove surface condensation "sweating" and dampness by using a hot air gun or a similar device.
6. Continue with the General Surface Preparation Guidelines.

GENERAL SURFACE PREPARATION

1. All surfaces must be dry, clean, and rough.
2. Stop all liquids from leaking onto the surface, while repairing the substrate.
3. Remove all paint, rust, grime from surface by abrasive blasting or other mechanical techniques.
4. Degrease area with Cleaner Blend 300.
5. Provide a "profile" on the metal surface by roughening the surface through abrasive blasting or mechanical means.

CLEAN SURFACES

1. If surface is oily or greasy, use Cleaner Blend 300 to cleanse the surface.
2. After the recommended method of cleaning, abrasive blasting is done to the surface to produce a good "Surface profile". Oils and contaminants usually get imbedded into the surface, and do not wash away with degreasing.
3. The blasting medium should be angular grit such as silicon carbide, Black Beauty, or aluminium oxide. A .003 to .005 mil profile should be attained. The medium Black Beauty (Size 1240 medium grade) will produce this grade.
4. If you cannot abrasive blast the substrate, you may use a coarse grinding wheel (60 grit or coarser), or a needle gun to achieve the desired mil profile.
5. High velocity water blasting with abrasive medium is also recommended. After the blasting, degrease again with Cleaner Blend 300. This helps wash away blasting medium that becomes lodged in the profile of the metal. Be sure to apply Devcon Epoxies immediately after blasting to prevent rust blooming.
6. Always try to make the repair as soon as possible after cleaning the substrate, to avoid oxidation or flash rusting. If this is not practical, a general application of FL-10 Primer will keep metal surfaces from flash rusting.

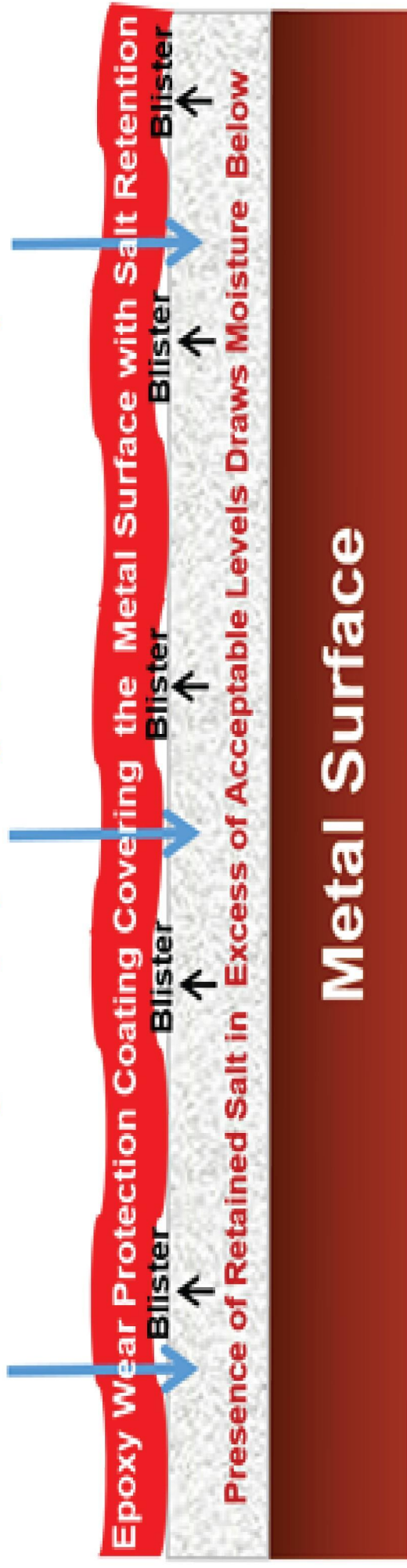
EFFECT OF RETAINED SALT ON ADHESION OF EPOXY



REMOVAL OF ABSORBED AND RETAINED SALTS FROM METAL ALLOYS BEFORE APPLYING DEVCON EPOXY

Metals exposed to sea water or other salt solution, will have a level of absorbed salt retained in the metal that if not removed will cause blistering between the layers of the metal and the epoxy coat causing the epoxy to release and peel from the metal surface. The following diagram demonstrates this.

Moisture Passes Through the Epoxy Coating by Osmosis Caused by Salt Retention



Grit-blasting or Wire Brushing alone will not remove salt which has been absorbed into the metal. A combination of Grit-blasting, High-pressure-Water-Blast and or Boiling the Metal Parts is required to sufficiently remove the retained salt. Depending on the type of metal Steels, Cast Iron or Alloys of Bronze, Salt Removal might require several treatments to get the salt levels below accepted levels. Leave the treated metal overnight to allow any salts in the metal to "sweat" to the surface. Repeat treatments to "sweat out" all soluble salts. Perform chloride or sodium contamination test to determine soluble salt content (should be no more than 40ppm/<30 μ S/cm). The Bresle Patch Test is the most accurate test method. See Below:

SALT REMOVAL TECHNIQUES BEFORE APPLYING DEVCON EPOXIES



Note: For metals exposed to sea water or other salt solution, grit-blast and high-pressure-water-blast the area, then leave overnight to allow any salts in the metal to “sweat” to the surface. Repeat blasting to “sweat out” all soluble salts. Perform chloride contamination or Bezel test to determine soluble salt content (should be no more than 40ppm). ALLOY METALS may have less salt penetration. CARBON STEELS, CAST IRON, CAST METALS may have higher salt concentration due to porous surface and the presence of rust and corrosion.

STEP 1- Pressure Wash All Surfaces to Remove Surface Dirt, Grease, Salt. Allow to Dry and Then Measure the Amount of Salt Present on the Metal.

Impeller (Bronze Monel (B/M))
35 S/cm (24.56ppm)



Pump Cover- Cast B/M
76 S/cm (53.34 ppm)



Pump Body-Cast B/M
144 S/cm (101.06 ppm)



STEP 2- Power Wire Brush or Grit Blast to Remove Salt, Corrosion, Rust. Clean Surface with Devcon 300 Allow the Salt to Sweat One (1) Day. Measure the Amount of Salt.

Impeller (Bronze Monel (B/M))
30 S/cm (21.05 ppm)

Pump Cover- Cast B/M
35 S/cm (24.56 ppm)

Pump Body-Cast B/M
19 S/cm (13.33 ppm)



STEP 3- Boil the Parts in Water for One (1) Hour. Clean Surface with Devcon 300 Allow the Salt to Sweat One (1) Day. Measure the Amount of Salt.

Impeller (Bronze Monel (B/M))
24 S/cm (16.84 ppm)

Pump Cover- Cast B/M
18 S/cm (12.63 ppm)

Pump Body-Cast B/M
Salt Passed-Step 2



CONCLUSION: The Proper Technique for Salt Removal Below an acceptable level of US Navy Standard of <30 S/cm requires a three (3) step process. ①Water Pressure Blast, ②Power Brushing or Grit Blasting + cleaning with Devcon Cleaner 300, ③Boiling the Parts Followed by cleaning with Devcon Cleaner 300.

PHYSICAL PROPERTIES



TYPICAL PHYSICAL PROPERTIES



Mix ratio by weight (resin:hardener)	Mix ratio by volume (resin:hardener)	Viscosity with hardener (cps)	Specific Volume (in. ³ per lb.)	Pot life in minutes @ 75 °F	Coverage per lb. in sq. in. 1/4" thick	Operating temperature (max. °F)	Adhesive tensile shear (psi ASTM D 1002)	Tensile strength (psi ASTM D 638)	Compressive strength (psi ASTM D 695)	Flexural strength (psi ASTM D 790)	Modulus elasticity in tension (psi ASTM D 638 [x10 ⁵])	Coefficient of thermal expansion (ASTM D 696 in./in. °F [x10 ⁻⁶])	Thermal conductivity (ASTM C 177 [cal/cm/sec·cm ³ ·°C x10 ⁻³])	Dielectric constant (ASTM D 150)	Dielectric strength (ASTM D 149 volts/mil)	Cured shrinkage (in./in. ASTM D 2566)	Cured hardness (shore D ASTM D 2240)
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(GENERAL REPAIR PUTTY)

PLASTIC STEEL PUTTY (A)	10110	9:1	2.5:1	Putty	11.9	45	48	250	2,800	3,220	8,260	5,600	8.5	48	1.37	67.5	30	0.0006	85
PLASTIC STEEL 5-MINUTE PUTTY (SF)	10240	1.7:1	1:1	Putty	12.2	5	49	200	2,026	3,100	10,400	7,680	7.5	34	2.65	35.0	30	0.0006	85
ALUMINUM PUTTY (F)	10610	9:1	4:1	Putty	17.5	60	70	250	2,600	3,680	8,420	6,760	8.0	29	1.73	21.4	100	0.0008	85
ALUMINUM LIQUID (F-2)	10710	9:1	5:1	15/25,000	17.5	75	70	250	2,700	5,000	9,820	3,540	7.5	50	1.58	8.6	100	0.0009	85
STAINLESS STEEL PUTTY (ST)	10270	11:1	3.75:1	Putty	12.4	58	50	250	2,385	3,340	8,400	5,280	8.0	34	1.23	75.0	30	0.0010	85
BRONZE PUTTY (BR)	10260	9:1	3:1	Putty	12.4	35	50	250	2,680	2,640	8,540	6,180	8.0	33	1.57	75.0	25	0.0010	85

(PRECISION REPAIR EPOXIES)

TITANIUM PUTTY	10760	4.3:1	3.1:1	Putty	11.7	21	47	350	2,000	4,000	18,800	7,700	9.5	22	1.95	44.8	56	0.0010	87
WEAR RESISTANT (WR-2)	11410	9:1	4:1	Putty	13.9	60	56	250	2,200	4,300	9,800	6,500	7.5	32	1.67	6.3	4,000	0.0005	85
FASTMETAL	10780	1.07:1	1:1	Putty	17.2	4	69	250	2,000	3,145	12,700	7,000	8.5	32	2.04	18.6	370	0.0093	85

(ABRASION-RESISTANT SYSTEM)

BRUSHABLE CERAMIC-RED,BLUE		5.6:1	3.4:1	32,000	16.5	40	7.6 ⁵	350	2,000	3,800	15,200	8,000	9.0	19	1.92	38.7	382	0.0020	90
CERAMIC REPAIR PUTTY	11700	7:1	4.3:1	Putty	16.4	25	66	350	2,000	3,900	12,700	6,475	9.0	17	1.88	41.0	370	0.0022	90
WEAR GUARD (HIGH LOAD)	11490	2:1	2:1	Putty	12.9	45	50	300	2,375	4,210	11,000	7,140	8.5	32	1.75	41.0	340	0.0006	87
WEAR GUARD (FINE LOAD)	11470	2:1	2:1	Putty	12.4	45	50	300	2,375	4,300	11,000	7,190	8.5	34	1.81	46.0	340	0.0014	87
CARBIDE PUTTY	10050	8:1	4:1	Putty	15.9	50	64	250	1,350	2,640	8,160	5,480	8.0	14	1.25	25.0	200	0.0009	85

(EMERGENCY REPAIR PRODUCT)

UNDERWATER REPAIR PUTTY (UW)	11800	14:1	1:1	Putty	17.0	45	68	250	2,685	2,760	5,625	4,990	7.5	18	1.41	8.6	150	0.0020	82
HVAC (SPECIAL F)	19770	0.9:1	1:1	Putty	16.1	60	64	250	2,500	3,720	8,420	6,260	7.8	29	1.73	21.4	100	0.0009	85
ZIP PATCH	11500	1:1	1:1	Set	-	5	-	200	2,400	10,000	-	19,000	2.9	64	1.71	43.5	250	0.0010	70

METAL CASTING

PLASTIC STEEL LIQUID (B)	10210	9:1	3:1	15/25,000	13.1	45	52	250	2,800	4,900	10,200	7,480	8.5	38	1.39	67.5	30	0.0006	85
ALUMINUM LIQUID (F2)	10710	9:1	5:1	15/25,000	17.5	75	70	250	2,700	5,000	9,820	3,540	7.5	50	1.58	8.6	100	0.0009	85
ALUMINUM WEAR	DE087	4:1	9:1	Putty	15.38	50	65	250	2,580	-	9,840	7,260	-	-	1.80	-	400	0.005	85

METHODS FOR MIXING DEVCON EPOXIES

Devcon®

PLASTIC STEEL A

10110



RESIN

HARDENER

Proportional
Mixing



"HARDENER"



"RESIN"



CORRECT MIXING OF DEVCON 2-PART REPAIR AND COATING EPOXIES CREATES MAXIMUM STRENGTH AND ADHESION THREE (3) METHODS FOR MIXING DEVCON EPOXIES

1. **"Whole Set Mixing"** (Complete Amounts of Resin and Hardener Mixed Together (Suitable for All Devcon Epoxies))
2. Proportional Mixing **"By Volume"** (Suitable for Devcon Epoxy Putty)
3. Proportional Mixing **"By Weight"** Using a Scale (Suitable for Devcon Epoxy Putty, Liquid Epoxy and Brushable/Trowelable Epoxies)

DEVCON BRUSHABLE CERAMIC-RED, BLUE, WHITE



RESIN



HARDENER

WHOLE SET MIXING: Recommended

Proportional Mixing Weight (Using Scale): 5.6 (Resin) :1 (Hardener)

DEVCON 10260 BRONZE PUTTY (BR)



RESIN



HARDENER

WHOLE SET MIXING: Recommended When Covering Large Areas

Proportional Mixing: Volume: 3 (Resin) :1 (Hardener)

Proportional Mixing: Weight (Using Scale): 9 (Resin) :1 (Hardener)

DEVCON 10760 TITANIUM PUTTY (BR)



RESIN



HARDENER

WHOLE SET MIXING: Not Recommended

Proportional Mixing: Volume: 3.1 (Resin) :1 (Hardener)

Proportional Mixing: Weight (Using Scale): 4.3 (Resin) :1 (Hardener)

Note:

(1) The **"Proportional Mixing"** by Weight or by Volume is found in the catalog or the Technical Data Sheet.

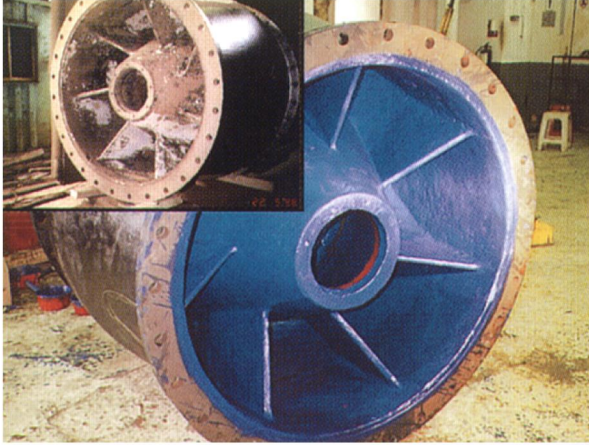
(2) It is recommended that the **"RESIN"** Parts of Liquid and Brushable Epoxies Be Stirred Before Adding the Hardener to Loosen Any Solid Materials That May Have Settled to the Bottom.

(3) Correct Mixing is When the Resin and the Hardener Are Mixed Together to Form a Single Color (The Color of The Resin). The Mixing of the Two-Parts Should Not Be Longer Than 30-45 Seconds.

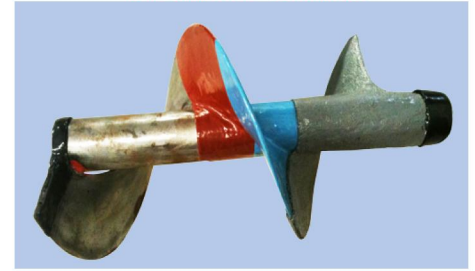
(4) When Mixing By Volume Caution Must Be Taken So That Mixing Tools Do Not Cross Contaminate the Resin and the Hardener.

ABRASION/CORROSION&WEAR

Devcon®



IMPELLER REPAIR BRUSHABLE CERAMIC



ABRASION/CORROSION & WEAR REPAIR EPOXIES

* Alumina Filled Epoxy * Strong Adhesion & Wear Resistance* * Protect Against Chemical Corrosion*Protect Dry Handling & Storage Machinery *Prepare Surface * Mix Properly * Apply by Troweling or Brushing*

Ceramic epoxies are used to rebuild and repair damage from abrasion/corrosion and wear on pump casings, impeller blades, valves, process machinery, circulating water equipment, chutes, hoppers and equipment used in corrosive and abrasive environments. Coating this equipment extends the working life and improves performance.

Ceramic Repair Putty: P/N **11700** 3 lbs. (1.35 kg.) .66m @ .025 in (6.3mm) Thickness

Repairs: Rebuilds Pump Linings and Impellers, Fan Housing, Filter Plate

Drying Color: Red Putty. Working Time: 20 minutes.

Handling Time: Full Cure: 16 hours. Recoat Time: 2-3 hours

Volume Mix Ratio: 4.3: 1. Working Temperature: Temperature: Dry: 155C, Wet: 66C

Adhesive Tensile Strength: 2,000 psi (13.8MPa) Compressive Strength: 12,700 psi (87.56 MPa)

Hardness: 90 Shore D

Drying Color: Red Putty

TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=125&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

[id=125&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA](http://www.devcon.com/products/products.cfm?family-id=125&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)



Brushable Ceramic: 2 lbs. (1 kg) 1.0 m @ .015 in (15 mils) Thickness

P/N **11760** - Red; P/N **11765** - Blue; P/N **11770** - White (certified safe for use with food and liquid processing equipment)

Repairs: Use with new equipment or after repair of worn metal to coat & seal metal surfaces. Provides exceptional corrosion and abrasion resistance for internal surfaces of pumps, impellers, valves, heat exchangers & production equipment.

Working Time: 20 minutes. Handling Time: Full Cure: 16 hours. Recoat Time: 2-3 hours

Mix Ratio (By weight): 5.6: 1. Working Temperature: Temperature: Dry: 155C, Wet: 66C

Adhesive Tensile Strength: 2,000 psi (13.8MPa) Compressive Strength: 15,200 psi (104.80 MPa)

Hardness: 90 Shore D

Chemical Resistance: excellent

Coating Thickness: 10-20mils (.010-.020 in.) Coverage: 1m²

Application Notes: 1 Pre-stir resin before adding hardener. 2 Mix hardener completely with resin. 3 To achieve a smooth and shiny surface brush the last coat lightly with MEK (Methyl Ethyl Ketone) before the Brushable Ceramic is completely dry.

TDS/MSDS: <http://www.devcon.com/products/products.cfm?family=Brushable%20Ceramic%20Red>



ABRASION/CORROSION&WEAR

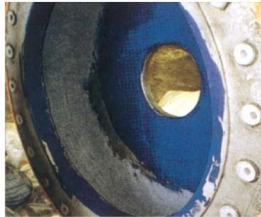
Devcon®



Repair/Line Chutes in Crushers with **Wear Guard High Load**



Repair/Line Cold Pipe Elbows with **Wear Guard High Load**



Repair/Line Pump Bodies with **Wear Guard Fine Load**



Repair/Line Delivery Pipe with **Wear Guard Fine Load**

HIGH-ALUMINA CERAMIC BEAD FILLED EPOXY SYSTEM FOR OUTSTANDING ABRASION RESISTANCE IN PROCESSING EQUIPMENT



WEAR GUARD HIGH LOAD P/N11490

Carbide Epoxy Putty: P/N 10050 3 lbs. (1.35 kg.) .04m² @ .025 in (6.3mm) Thickness

Repairs: Lower Cost Alternative to Ceramic Repair Putties and Epoxies For Rebuilding Metal and Providing Protection for Elbows, Pulverizers, Cyclones and Exhauster Liners.

Drying Color: Grey Putty. Working Time: 20 minutes. Handling Time: Full Cure: 16 hours

Volume Mix Ratio: 4: 1. Working Temperature: Dry: 100°C, Wet: 49°C

Adhesive Tensile Strength: 1,350 psi (9.3 MPa) Compressive Strength: 8,160 psi (56.26 MPa)

Hardness: 85 Shore D

TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=100&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

[id=100&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA](http://www.devcon.com/products/products.cfm?family-id=100&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

WEAR GUARD® TROWELABLE ABRASION/CORROSION & WEAR EPOXIES

Wear Guard High Load: P/N 11490- 30 lbs. 1.0m² @ .025 in (6.3mm) Thickness

Repair: Scrubbers, Ash Handling Systems, Pipe Elbows, Coal Pipe Lining, Screens, Chutes, Bins, Hoppers, Impellers. For Abrasion Resistance against particle size > 3.17mm

Drying Color: Non-sag Grey Putty. Working Time: 30 minutes. Handling Time: Functional Cure: 4-6 hours

Volume Mix Ratio: 2: 1. Working Temperature: Temperature: Dry: 132°C, Wet: 60°C

Adhesive Tensile Strength: 1,474 psi (10.16 MPa) Compressive Strength: 11,000 psi (75.85 MPa)

Hardness: 87 Shore D

TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=118&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

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Wear Guard Fine Load: P/N 11470- 30 lbs. 1.0m² @ .025 in (6.3mm) Thickness

For Abrasion Resistance against particle size < 3.17mm

Repair: Scrubbers, Slurry Pumps, Screens, Screw Conveyors, Chutes,

For Abrasion Resistance against particle size > 0.17mm

Drying Color: Non-sag Grey Putty. Working Time: 30 minutes. Handling Time: Functional Cure: 6-8 hours

Volume Mix Ratio: 2: 1. Working Temperature: Temperature: Dry: 132°C, Wet: 60°C

Adhesive Tensile Strength: 1,375 psi (9.48 MPa) Compressive Strength: 11,000 psi (75.85 MPa)

Hardness: 87 Shore D

TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=118&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

[id=118&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA](http://www.devcon.com/products/products.cfm?family-id=118&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

Wear Guard High Temp: P/N 11480- 30 lbs. 1.2m² @ .025 in (6.3mm) Thickness

Special High Temperature Formula for Wear Resistance. Non-sag Putty.

For Abrasion Resistance against particle size < 3.17mm. High Temperature Applications.

Repair: Scrubbers, Ash Handling Systems, Pipe Elbows, Coal Pipe Lining, Screens, Chutes, Bins, Hoppers, Impellers. For Abrasion Resistance against particle size > 3.17mm

Drying Color: Non-sag Grey Putty. Working Time: 30 minutes. Handling Time: HEAT CURE

Volume Mix Ratio: 6: 1. Working Temperature: Temperature: Dry: 200°C, Wet: 66°C

Adhesive Tensile Strength: 2,300 psi (15.85 MPa) Compressive Strength: 13,200 psi (91.0 MPa)

Hardness: 87 Shore D

TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=119&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

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ABRASION/CORROSION&WEAR



KEY FEATURES

- 4X better abrasion resistance than competition
- 7X better drop impact strength than ceramic tile
- Superior sliding abrasion resistance
- Withstands high impact conditions
- Less prone to unexpected fractures



P/N 11330

P/N 11340

DFense Blok™

DFense Blok™ is a revolutionary wear and abrasion protection epoxy compound formulated to significantly outlast traditional wear and abrasion products while also providing superior performance in the most severe conditions.

DFense Blok TROWELABLE ABRASION/CORROSION & WEAR EPOXIES

DFense Blok: P/N 11330- 30 lbs. 1.0m @ .025 in (6.3mm) Thickness

Repair: Scrubbers, Ash Handling Systems, Pipe Elbows, Chippers, Screens, Chutes, Bins, Hoppers, Impellers. For Abrasion Resistance against particle size < 3.17mm

Drying Color: Non-sag Grey Putty. Working Time: 30 minutes. Handling Time: Functional Cure: 4-6 hours

Volume Mix Ratio: 2: 1. Working Temperature: Dry: 132 C, Wet: 60 C

Flexural Strength: 7,876 psi (54.30 MPa) Adhesive Tensile Strength: 2616 psi (18.03 MPa) Compressive Strength: 7,145 psi (71.45 MPa) Hardness: 77 Shore D

Chemical Resistance: Very Good

TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=505&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

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DFense Blok Surface Wetting Agent :P/N 11340- 1 lb. 1.16m @ 0.01 in (12 mil)

Use: Use with DFense Blok and other Devcon Abrasive Wear Epoxies , High Load and Fine Load for ease of application and improved cured adhesion properties (shear, peel, impact)

Drying Color: Orange Gel. Working Time: 10 minutes. Handling Time: Functional Cure: 4-6 hours

Volume Mix Ratio: 2: 1. Working Temperature: Dry: 132 C, Wet: 60 C

Adhesive Tensile Strength: 2616 psi (18.03 MPa) Compressive Strength: 5,032 psi (34.69 MPa)

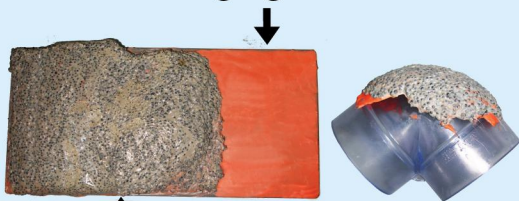
Hardness: 71 Shore D

Chemical Resistance: Excellent

TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=506&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

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Surface Wetting Agent : P/N 11340



DFense Blok : P/N 11330 (30 Lbs.)

POWER Mixer with Paddle



SUGAR FACTORY



SUGAR FACTORY-MRO

RAW CANE PROCESSING: KNIFE REPAIR & CONVEYOR BELT REPAIR

Problem: Damage to cutting knives and steel conveyor belts

Solution: Use **Devcon 10760** Titanium for excellent wear resistance & adhesion (p. T4)
Use **Devcon 10110** Plastic Steel A for General Metal Repair (p. T2)

CRUSHING- GROOVED ROLLERS & CENTRIFUGAL BASKETS

Problem: Abrasion and Corrosion Damage on Grooved Roller

Solution: Use **Devcon 11700** Ceramic Repair Putty to repair worn areas before coating

Use **Devcon 11760** (red) & 11765 (blue) Brushable Ceramic to coat Grooved Roller (p. T-7)

Use **Devcon 10760** Titanium to repair worn shaft (p. T4)

Problem: Abrasion and Corrosion Damage on Centrifugal Basket

Solution: Use **Devcon 11760** (red) & 11765 (blue) Brushable Ceramic to coat Basket (p. T-7)

Use **Devcon 10780** Wear Resistant Putty to rebuild worn areas (p. T-4)

BAGASSE HANDLING: CORROSION & ACID PROTECTION

Use **Devcon 11700** Ceramic Repair Putty to repair worn areas before coating (p. T7)

Use **Devcon 11760** (red) & 11765 (blue) Brushable Ceramic to coat Grooved Roller (p. T-7)

Use **Devcon 10270** (ST) Stainless Steel Putty to repair tanks and sheets made of stainless steel (p. T3)

JUICE PRODUCTION- SPLIT CASE PUMPS (p. T9& 10)

Use **Devcon 11760** (red) & 11765 (blue) Brushable Ceramic to internally coat pumps (p. T-7)

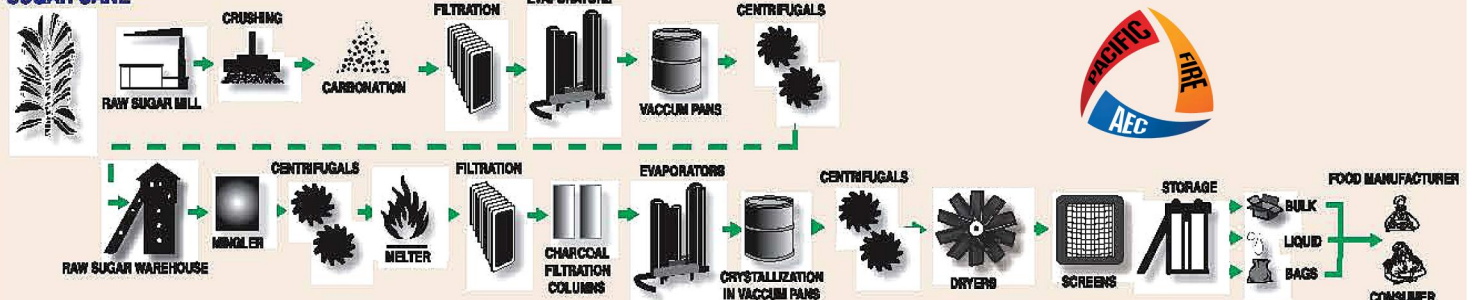
CO-GENERATION (p.T14)

Exhaust Fans- Use **Devcon 11760** (red) & 11765 (blue) Brushable Ceramic to coat fan impellers (p. T-14).

HEAT EXCHANGERS- Heat Exchanger Repair (p T23)

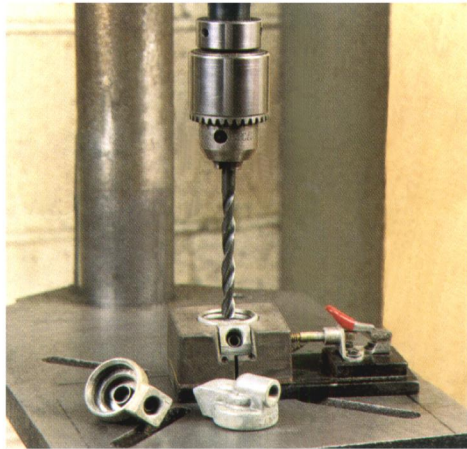
CANE SUGAR REFINERY

SUGAR CANE



CASTING & MOLDING

Devcon®



PLASTIC STEEL LIQUID P/N 10210



Alumimum Wear Compound P/N DE 087



RUBBER CASTING P/N 15800

P/N 205200



MOLD, CASTING & LIQUID EPOXY COMPOUNDS STEEL AND ALUMINUM CASTING

Plastic Steel® Liquid B: P/N 10210- 454 gr. .03m @ .025 in (6.3mm) Thickness

P/N 10230- 11.36 KGS (25 LBS.). .083m @ .025 in (6.3mm) Thickness

Use: Steel Filled Liquid Epoxy for making holding fixtures, forming dies & molded parts. Once hardened, material can be drilled, tapped, and machined. Low Viscosity. Self-Leveling

Drying Color: Dark Grey Liquid. Brush a thin coat on the mold substrate, then pour.

Working Time: 20 minutes. De-molding Time: 12 hours. Full Cure: 16 hours.

Mix Ratio By Weight: 9:1. Working Temperature: Dry: 105C, Wet: 50C

Adhesive Tensile Shear Strength: 2,800 psi. (19.30 MPa)

Compressive Strength: 10,200 psi (70.32 MPa)

Hardness: 85 Shore D

TDS/MSDS: [http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=102&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

id=102&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA

Aluminum Liquid F-2: P/N 10710- 454 gr. .045m @ .025 in (6.3mm) Thickness

Use: Aluminum Filled Liquid Epoxy for making holding fixtures, forming dies & molded parts. Self-Leveling. Use for leveling fixtures. Once hardened, material can be drilled, tapped, and machined. Can be machined to metallic finish.

Drying Color: Aluminum Liquid. Brush a thin coat on the mold substrate, then pour.

Working Time: 20 minutes. De-molding Time: 10 hours. Full Cure: 16 hours.

Mix Ratio By Weight: 9:1. Working Temperature: Dry: 105C, Wet: 50C

Adhesive Tensile Shear Strength: 2,700 psi. (18.62 MPa)

Compressive Strength: 9,820 psi (67.70 MPa)

Hardness: 85 Shore D

TDS/MSDS: [http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=108&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

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Flexane 80 Liquid B: P/N 15800- 454 gr. .045m @ .068 in (6.3mm) Thickness

Use: Urethane Filled Liquid Epoxy for making rubberized holding fixtures, forming dies & molded parts. Once hardened, material can be drilled, tapped, and machined. Cover and Protect electrical components and wire from impact & vibration

Drying Color: Black Rubber Liquid. Brush a thin coat on the mold substrate, then pour.

Application Note: Used hot air blower on external surface of mold to remove air bubbles from mixture.

Working Time: 20 minutes. De-molding Time: 10 hours. Full Cure: 16 hours at Room Temp.

Mix Ratio By Weight: 77:23. Working Temperature: Dry: 82C, Wet: 50C

Tensile Strength: 2,100 psi. (14.48 MPa)

Tear Resistance: 350 pli

Hardness: 87A Shore D

TDS/MSDS: [http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=151&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

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MOLD PERFORMANCE AND REPAIR EPOXIES

Aluminum Wear Compound: P/N DE087 20 lbs. (9kgs.). .042m @ 0.5 in (12.5mm) Thick

Use: Seal or Repair Leading Edges of Molds* Fill Pores or Voids in Castings* Bi-Metal Corrosion Protection

Drying Color: Dark Grey Putty.

Working Time: 30 minutes. Fixture Time: 4 hours @ 0.5" 12.5 mm. Full Cure: 12-16 hours.

Mix Ratio By Weight: 9:1. Working Temperature: Dry: 121C, Wet: 50C

Flexural Strength: 7,260 psi. (65.36 MPa)

Compressive Strength: 9,480 psi (65.3 MPa)

Hardness: 88 Shore D

TDS/MSDS: Please Contact Pacific and Fire AEC Co., Ltd.

METALLIC PUTTY: P/N 205200 (200 gr.) .042m @ 0.5 in (12.5mm) Thick

Use: Repair and Metallic Polished Finish on Internal Mold Surfaces. Create Miniature Models.

Drying Color: Light Grey Aluminum. Three (3) Part Mixture.

Working Time: 10 minutes. Cure Time: 8 hours

Mix Ratio By Weight: 5:1. Working Temperature: Dry: 160C

Flexural Strength: 700-800 kg/cm

Compressive Strength: 600-700 kg/cm

Hardness: 92-97 Shore D

TDS/MSDS: Please Contact Pacific and Fire AEC Co., Ltd.

QuikAlum Epoxy Stick

See: "Special Repair Epoxy" Page

RUBBER REPAIR EPOXY

Devcon®



Flexane 80 : P/N 15820



Flexane HP Putty : P/N 15330



MDL. FL-10
METAL PRIMER

MDL. FL-40
RUBBER PRIMER

MDL. FL-20
ADHESION PRIMER

APPLICATIONS



Delivery Hose Repair



Mdl. 15330 + FL-20

URETHANE RUBBER REPAIR EPOXY PRIMERS

Note: Use the following Devcon Primers for the best results:

P/N 15980 (FL-10) For applying Devcon Urethane Epoxies to Metals

P/N 15985 (FL-20) For applying Devcon Urethane Epoxies to Rubber, Wood, Fiberglass and concrete. Apply before re-coating with a second application of Devcon Urethane Epoxies.

P/N 15984 (FL-40) Used for Maximum Peel Strength when applying to Rubber products.

Flexane 80: P/N 15820 1 lb. (454 gr.) .06m² @ .025 in (6.3mm) Thickness

Line or Repair Process Equipment subject to impact, abrasion, vibration, expansion & contraction Repair Tear & Cracks in Conveyor Belts. *Use in molding fixtures* Noise Reduction* Specialized Repair of Industrial Rubber Liquid and Solids Delivery Hoses* Specialized Repair of Voids and Cracks in Heavy Equipment Tires* Rubber Roll Repair*

Drying Color: Black Med. Hard Rubber. Working Time: 15 minutes. Full Cure: 16 hours.

Mix Ratio: Mix Completely for Best Results.

Volume Mix Ratio: 72:28. Working Temperature: Dry: 121°C, Wet: 50°C

Tensile Strength: 1,700 psi. (11.71 MPa) Tear Resistance : 300 pli

Hardness: 87A Shore D

TDS/MSDS: [http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=152&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

[id=152&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA](http://www.devcon.com/products/products.cfm?family-id=152&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)



Flexane HP Putty: P/N 15330 1 lb. (454 gr.) .06m² @ .025 in (6.3mm) Thickness

Tough, Flexible Urethane Epoxy Line or Repair Process Equipment subject to Impact, Abrasion, Vibration, Expansion & Contraction* Repair Tears & Cracks in Conveyor Belts. *Use in molding fixtures* Noise Reduction* Repair of Industrial Rubber Liquid & Solids Delivery Hoses* Specialized Repair of Voids and Cracks in Heavy Equipment Tires* Highly Resistant to Impact and Abrasion.

Drying Color: Black Med. Hard Rubber. Working Time: 15 minutes. Full Cure: 16 hours.

Mix Ratio: Mix whole set for best results.

Volume Mix Ratio: 94:6. Working Temperature: Dry: 82°C, Wet: 24°C

Tensile Strength: 4,500 psi. (31.02 MPa) Tear Resistance : 400 pli

Hardness: 78A Shore D

TDS/MSDS: [http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=149&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

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Flexane Brushable: P/N 15350- 1 lb. (454 gr.) 1.0m² @ .50 mils in (1.27mm) Thickness

Coat Equipment subject to Impact, Abrasion & Wear Create a Wear Buffer between Metal Pipe and Pipe Supports* Repair & rebuild internal rubber coated parts in pumps, valves and tanks* Excellent impact and abrasion resistance.

Drying Color: Black Med. Hard Rubber. Working Time: 15 minutes. Full Cure: 24 hours.

Mix Ratio: Mix completely for best results. Application Rate: 50 mils (1.27mm) /coat

Volume Mix Ratio: 80:20. Working Temperature: Dry: 82°C, Wet: 50°C

Tensile Strength: 3,500 psi. (24.13 MPa) Tear Resistance: 400 pli

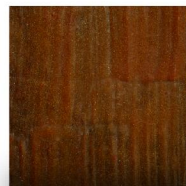
Hardness: 86A Shore D

TDS/MSDS: [http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=150&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

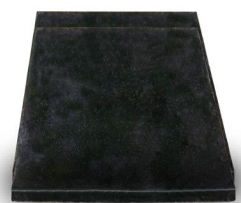
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Mdl. 15350 Brushable
Coat Pipe Racks /
Prevent Damage



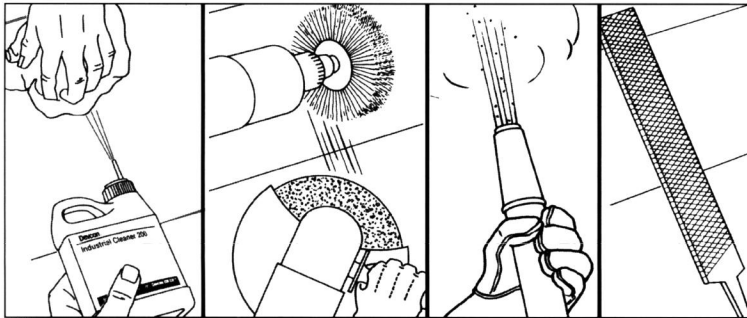
Mdl. 15350 Brushable
Coat Metal / Lower
Vibration



Mdl. 15820 Flexane Putty
Coat Metal / Lower Impact
Damage

CLEANING & PRIMING RUBBER

Devcon®



FL-10
P/N 15980



FL-40
P/N 15984



FL-20
P/N 15985

Surface Preparation for Flexane Technology

The successful application of any product in the Devcon Industrial Product Line is largely dependent on proper surface preparation. Flexane urethane technology has stringent preparations that must be met to ensure a successful application. Dust, dirt, oil, grease, rust and dampness affect adhesion of *all* Flexane products. Surface conditions will vary from job to job while temperature and humidity condition change "hourly". The following guidelines will help to prepare the substrate for use with *Devcon Flexanes*. This section describes the general surface preparation, as well as the methods to use to prepare the surface.

General Surface Preparation

1. All surfaces must be dry, clean and rough.
2. Stop all liquids from leaking onto the surface, while repairing the substrate.
3. Remove all paint, rust, and grime from surface by abrasive blasting or other mechanical techniques.
4. Degrease area with **Devcon Cleaner Blend 300**.
5. Provide a "profile" on metal surfaces and rubber surfaces by roughening the surface.
6. Moisture in the surface will affect adhesion of urethane materials. Always remember to use the appropriate primer for maximum adhesion to that substrate.

Clean Surfaces - Rubber

1. First, using a grinder with a wire wheel or rubber rasp, grind the surface to produce a good "surface profile". Oils and contaminants that are imbedded into the rubber surface are usually released at this time.
2. User **Devcon's Cleaner Blend 300** with an abrasive pad to remove all the oil and grease from the rubber's surface to get a clean surface.
3. Wipe the surface with a clean lint-free cloth numerous times until black residue no longer transfers onto the white cloth.

Clean Surfaces - Metal

4. If the metal surface is oil or greasy, use Devcon Cleaner Blend 300 to cleanse the surface.
5. After this recommended method of cleaning, abrasive blasting is done to the surface to produce a good "surface profile". Oils and contaminants usually get imbedded into the surface, and do not wash away with degreasing. Use a 25-40 grit or coarser abrasive for this process.
6. If you cannot abrasive blast the substrate, you may use a coarse sandpaper (60 grit or coarser), to achieve the desired surface.
7. Always try to make the repair as soon as possible after cleaning the substrate, to avoid oxidation or flash rusting. Immediately coating the metal with FL-10 primer will keep the metal surfaces from rusting.

Clean Surfaces - Concrete

8. Concrete being a very porous substrate requires multiple cleaning. Degrease the area with Cleaner Blend 300 or any water-based emulsion cleaner and rinse the area. Multiple cleaning may be necessary. A power washer or steam cleaner is useful for this step. Let the floor dry thoroughly before applying Primer and Flexane.

Degreasing

The degreasing of surface that are immersed in oil is usually very difficult to do. There is the possibility that the absorbed oil out in the metal surface will cause an adhesion problem while the Flexane is curing. An oily feeder bowl, or a gasket area are excellent examples of problem areas that would be immersed in oil prior to using Devcon Flexane Urethanes.

1. Apply **Cleaner Blend 300** to the oily surface. Repeated application of these cleaners will help to "draw" the oil of the surface. When cleaning a rubber surface, the use of an abrasive pad will help in the degreasing process.
2. Absorbed oil from metal surfaces that have been constantly immersed in oil should be removed by heat. The heat forces the oil of the pores. Heating the part with a heat gun, or putting the part in an oven will produce this effect. Repeat heating the metal surface followed by cleaning until no oils are present.

Surface Roughening

Always abrade a smooth surface to increase the adhesion of the Flexane to the substrate. Many field applications are redone because someone neglected to obtain a good surface profile.

1. If the surface was cleaned by abrasive blasting, shotblasting, or disc sanding, the "roughened" effect should be sufficient to proceed.
2. Otherwise, roughen the surface with a coarse file, an abrasive pad or sandpaper to get a surface profile.

Substrate Priming

Many field applications using Devcon's Flexane technology are unsuccessful because the technician fails to use the proper primers to adhere the Flexane to the substrate. There are 2 different priming systems to use when applying Flexane. They are as follows:

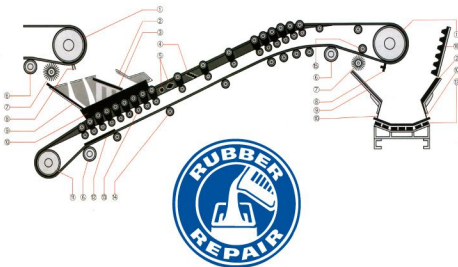
1. **Metal Surfaces** : Use 2 coats Devcon's **FL-10** Primer to coat all metal substrates. This applies to stainless steel and aluminum too!
2. **Rubber Surfaces** : Use Devcon's **FL-20** Primer to coat all gum rubbers, neoprene, or cured urethane.
3. **Immersion Substrates**: Use both Primers, **FL-10** and **FL-20** to coat any metal substrate that will be immersed in any aqueous solution. First apply the FL-10 Primer and let dry 60 minutes. Next coat with the FL-20 Primer. Let dry 30 minutes before applying the Flexane material.
4. **Concrete**: Use Devcon's **FL-20** Primer to coat this substrate. Concrete being a very "porous" substrate may need multiple coats of FL-20 Primer for proper adhesion. Let Primer dry 30 minutes between coats.
5. **Wood, Fiberglass**: Use Devcon's **FL-20** Prime for all wood products. The soft woods will need 2 coats of Prime because of their absorption characteristics.

It should be noted that applying 2 coats of FL-10 Primer to metal substrates will improve the adhesion over a 1 coat priming system.

All other substrates, please consult factory for a proper selection of Primers and their correct application procedures.

BELT REPAIR

Devcon®



FLEXANE 80 PUTTY: 15820



Flexane 80 Liquid : 15800

SPECIALIZED CONVEYOR BELT, COATING AND SEALING RUBBER EPOXY COMPOUNDS

DEVCON R-FLEX Belt Repair P/N 15565 1 lb. (454 gr.) P/N 15565 4lbs. (1.8 kg.)

Devcon® R-Flex® is formulated to quickly repair tears, gouges, and holes in styrene-butadiene rubber (SBR) heavy weight conveyor belts. Offering excellent abrasion resistance as well as superior adhesion, the R-Flex® urethane compound is easy to mix and cures quickly — the repaired belt can be back in service just 90 minutes after application. High Adhesion to SBR Belts.

Drying Color: Black Med. Hard Rubber. Working Time: 7 minutes. Functional Cure: 90 min.

Full Cure: 16 hours. Self- Leveling, Non-Sag

Mix Ratio: Mix completely for best results.

Volume Mix Ratio: 88:12. Working Temperature: Dry: 121 °C, Wet: 50 °C

Adhesion 7 days : 128 pli. Tear Resistance : 1,462 pli. Abrasion Resistance: 270 mg loss/1,000 rev.

Hardness: 92A Shore A

TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=521&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

[id=521&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA](http://www.devcon.com/products/products.cfm?family-id=521&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)



Flexane 80: P/N 15820 1 lb. (454 gr.) .06m @ .025 in (6.3mm) Thickness

*Line or Repair Process Equipment subject to impact, abrasion, vibration, expansion & contraction*Repair Tear & Cracks in Conveyor Belts. *Use in molding fixtures*Noise Reduction* Specialized Repair of Industrial Rubber Liquid and Solids Delivery Hoses* Specialized Repair of Voids and Cracks in Heavy Equipment Tires*Rubber Roll Repair*

Drying Color: Black Med. Hard Rubber. Working Time: 15 minutes. Full Cure: 16 hours.

Mix Ratio: Mix completely for best results. Volume Mix Ratio: 72:28. Working Temperature: Dry: 121 °C, Wet: 50 °C

Tensile Strength: 1,700 psi. (11.71 MPa) Tear Resistance : 300 pli

Hardness: 87A Shore D

TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=152&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

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URETHANE RUBBER LIQUID EPOXY COMPOUNDS

Flexane 80 Liquid: P/N 15800- 1 lb. (454 gr.) .06m² @ .025 in (6.3mm) Thickness

Use: Urethane Rubber Liquid Epoxy for making rubber parts, forming molds dies & non-scratching holding fixtures & linings. Encapsulate Wire & Electronic parts from impact, vibration, expansion & contraction * Can be drilled and machined*

Note: use blow dryer to remove air bubbles when making molded parts.

*Line or Repair Process Equipment subject to impact, abrasion, vibration, expansion & contraction*Repair Tear & Cracks in Conveyor Belts. *Use in molding fixtures*Noise Reduction* Specialized Repair of Industrial Rubber Liquid and Solids Delivery Hoses* Specialized Repair of Voids and Cracks in Heavy Equipment Tires*Rubber Roll Repair*

Drying Color: Black Med. Hard Rubber.

Working Time: 20 minutes. Demolding Time: 10 hours Full Cure: 16 hours. No Heat Required

Mix Ratio: Mix completely for best results. Mix Ratio By Weight: 77:23

Working Temperature: Dry: 121 °C, Wet: 50 °C

Tensile Strength: 2,100 psi. (11.71 MPa) Tear Resistance : 350 pli

Hardness: 87A Shore D

TDS/MSDS:[http://www.devcon.com/products/products.cfm?family-](http://www.devcon.com/products/products.cfm?family-id=151&sr=1&CFID=224217973&CFTOKEN=ba731160ca429311-1511AA2F-B1E9-1309-BD89D99D825C57BA)

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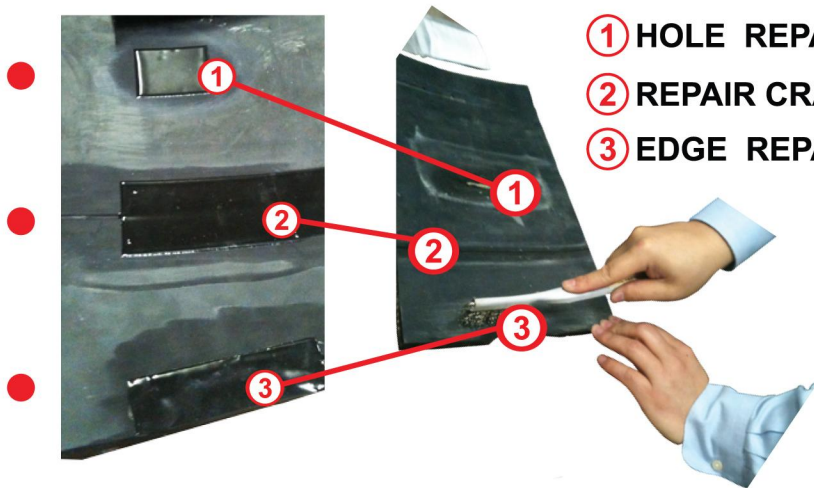


BELT REPAIR

Devcon®



R-FLEX BELT REPAIR TECHNOLOGY



- ① HOLE REPAIR
- ② REPAIR CRACKS
- ③ EDGE REPAIR

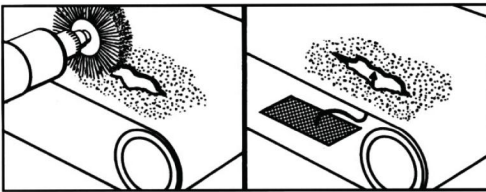


Figure 1

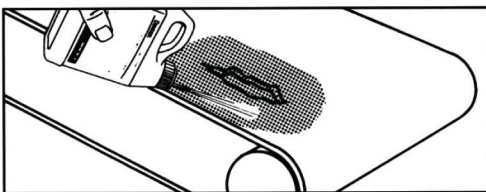


Figure 2

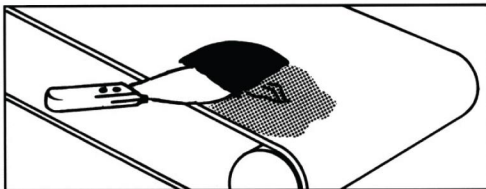


Figure 3

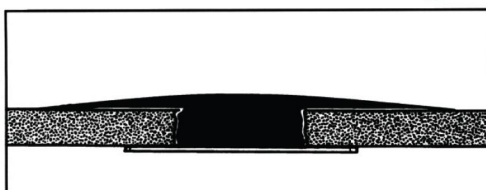


Figure 4

Urethane Molding and Rubber Repairing

Conveyor Belt Repairs

DEVCON R-FLEX P/N 15565 (URETHANE BELTS)

Two different types of belting repairs can be performed with Devcon's Flexane technology. The most common repair is a "hole" in belt. This is caused when by the aggregate being transported wedges itself into the wiper area, thus a tear or hole in the belt. The other type of repair occurs at the "Clips". This area is where the belt is spliced. Some conveyor belts have metal detectors at the pulley area, so you need to coat the clip area to hide the metal pins. The fine aggregate gets into the pins of the metal splice and wears out the "pins". Therefore it is recommended that the metal splice area be coated with Flexane. We will show both repairs. They are as follows:

1.Surface Preparation : Follow the section under " Clean Rubber Surfaces "

Remember to grind the belt area well, to get good adhesion. **Figure1.**

For a "Tear" or "Hole" in Belt : First apply duct tape underneath the belt to stop anything from going through. Then abrade the area, cleaning off the dust when finished. **Figure 2.**

2.Apply FL-20 Primer around the tear area and approximately 4-8 inches around the tear. Let dry for 30 minutes.

3. Mix Flexane 80 Putty and apply into the tear and around the tear area 4-8 inches.

Figure 3.

4. By applying Flexane 80 Putty around the tear area and "feathering out" the Flexane material, you make a repair that will be almost on the same plane as the belt, not a "bump" on top of the belt. Apply at least an 1/8" of material to the belt for strength and flexibility. **Figure 4.**

RUBBER ROLLER REPAIR

Devcon®



ROLLER REPAIR IN PRINTING FACTORY



Figure 1

Figure 3

Figure 4

Figure 2

Rubber Roll Repair/Rubber Linings

Flexane's ability to "adjust" its durometer has always been an excellent feature in helping to repair rubber rolls in the paper industry. The rubber-lined condenser water boxes also provide an excellent application for our Flexane products. These two applications are done in the field today. Roll repairs require a careful surface preparation and application savvy to ensure the Urethane material adheres to both the metal shaft and rubber coating. Here is a typical application for a rubber roll :

1. Surface Preparation : Clean the surface of the rubber roll to get all oils and greases out of the surface. Follow the *Degreasing Section* of this manual.

Then while the roll is on the lathe, machine the worn rubber completely off the roll. You may take the rubber down to the metal "core" shaft, or just "undercut" the rubber at least a 1/8". Be sure to leave a "distinct" edge on both sides of the worn area. **Figure 1.**

2. After the roll has been completely cleaned, apply **FL-10** Metal Primer to the metal "core" of the roll, and then apply **FL-20** Rubber Primer to the "edges" of the rubber, and over to the **FL-10**.

Note: If you are only going to machine a small portion of the rubber off this roll to rebuild the roll back to its original shape, make sure the "edges" of the roll are coated with FL-20 Primer. This is essential for good adhesion. **Figure 2.**

3. After all the priming has been completed, you are ready to apply the Flexane material. Have the lathe move slowly in a clockwise direction. As the roll is "turning", start to apply the Flexane material. Be sure to compress the urethane onto the metal shaft and into the "edges" of the existing rubber. Try to make the finish of the repair as smooth as possible. Let the lathe spin for a few hours, allowing the Flexane material to "set-up" and cure.

Note: Sometimes a "thick" build up of urethane material, if not continuously kept in motion, will tend to "drop off" or "seg". **Figure 3.**

Now you are ready to machine the rubber repair. Machining the repair can be difficult. Remember the frictional heat that builds up when machining will cause the Flexane to "rip and tear", leaving a rough surface.

Machining instructions: For grinding, use a No. 60 diamond wheel. For machining, use a carbide bit, taking a "small pass" without generating a great amount of frictional heat.

Figure 4.

Rubber Repair Selector Guide

Devcon®



Flexane Applications

	Flexane 80 putty <i>P/N 15820</i>	Flexane High Performance Putty <i>P/N 15330</i>	Flexane Fast Cure Putty <i>P/N 15049</i>	Flexane Fast Cure Liquid <i>P/N 15050</i>	Flexane Brushable <i>P/N 15350</i>	Cable Cast FR	R-Flex Belt Repair Kit <i>P/N 15565</i>	Flexane 80 Liquid <i>P/N 15800</i>	Flexane 94 Liquid <i>P/N 15250</i>	Edge & Seal <i>P/N OF 039</i>	High Temp Edge & Seal <i>P/N OF 045</i>
Casting Molds. Rubber Parts							▼	▼	▼		
Conveyor Belt Repair	▼		▼	▼			▼				
Coatings Chutes / Hoppers	▼	▼			▼						
Coating (Impact Abrasion)	▼	▼			▼						
Expansion joints / Control joints			▼	▼							
Feeder Bowl Coating	▼	▼									
Gaskets										▼	▼
Holding Fixtures							▼	▼			
Metal Coatings		▼	▼	▼	▼		▼	▼			
Mold Molding							▼	▼			
Noise Reduction Coating	▼						▼	▼			
Potting Compound						▼				▼	▼
Repair Rubber Rolls	▼						▼	▼	▼		
Re-Packing Electrical Cable						▼					

EMERGENCY REPAIR

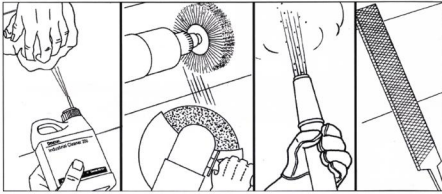
Devcon®



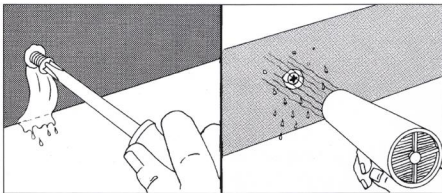
REPAIR

High-performance technology for repairing, patching, and rebuilding equipment in habitually wet environments, including under water.

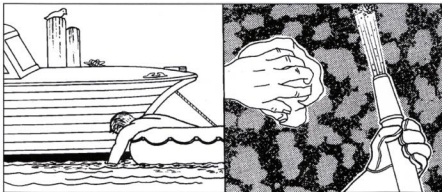
SURFACE CLEANING



DRY & CLEAN



UNDER WATER REPAIR



UW P/N 11800

Underwater Repairs

Surfaces underwater cannot receive the same surface preparation previously outlined in this surface prep guide, but they do need some attention. They are as follows:

1. Remove all dirt, barnacles, flaking paint, and algae/seaweed from the substrate.
2. Wipe area with a clean cloth to remove any film on the surface. Obviously you cannot degrease underwater, but wiping and turning a clean cloth often will remove any film on the surface.
3. Abraid the surface if possible. (use mechanical means or a file to accomplish.)
4. The oxidation can be removed by mechanical means, such as water, grit-blasting, or by chemical means.

Underwater Repair Putty (UW): P/N 11800 (454 gr.) .04m² @ .025 in (6.3mm) Thick

Repairs: Penetrates wetness to bond securely to steel, iron, aluminum, brass, bronze, concrete, wood, and some plastics. Invaluable for use in pulp and paper mills, wastewater treatment plants, and marine environments. Eliminates the need for substrate to be thoroughly dry before repair. Non-rusting; easy-to-mix and apply. Non-sagging. Bonds, patches and seal metals.

Drying Color: Grey Putty. Working Time: 30 minutes. Full Cure: 24 hours.

Volume Mix Ratio: 1:1. Working Temperature: Dry: 100 °C, Wet: 50 °C

Adhesive Tensile Shear Strength: 2,685 psi. (18.51 MPa)

RepairitQuik Epoxy Putty Stick is a hand-kneadable, fast-setting polymer compound for permanent repairs to many surfaces including metals, wood, glass, concrete, ceramics and numerous plastics. This general-purpose epoxy putty comes in a handy "Tootsie-Roll®" form with the curing agent encapsulated in the contrasting color base material.



Certified to Standard 61 by The National Sanitation Foundation for use in contact with drinking water.

QuikAluminum Epoxy Putty Stick is a hand-kneadable, fast-setting, aluminum-reinforced polymer compound for permanent repairs to anything made of aluminum. It also bonds to other metals, wood, glass, masonry and many plastics. It comes in a handy "Tootsie-Roll®" form with the curing agent encapsulated in the contrasting color base material.



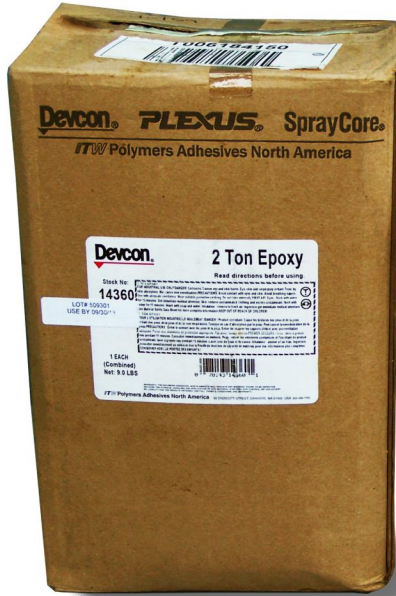
RepairitQuik

FACTORY PACK

Devcon®



ADHESIVES



FACTORY PACK- Industrial Size Packaging for Production Lines. Saves Time and Money.

2 Ton® 2-Part Epoxy Adhesive **P/N 14360 (9lbs/Set)** **P/N 14310 (Dev-Tube)**

Extremely strong, water-resistant epoxy adhesive that forms a powerful bond with ferrous and non-ferrous metals, ceramics wood, concrete, or glass in any combination.

Extremely strong, medium-cure, water-resistant clear adhesive that will self-level after application.

Intended Use: Bonding parts in a structural environment or potting electronic components and assemblies Product features: Cures without shrinking Cures at room temperature Good impact resistance Produces strong, rigid bond on metal, ceramics, wood, concrete, glass, or combinations.

KEY FEATURES

- Fills poorly mated joining surfaces while providing excellent adhesion
- Water resistant formula
- Good impact resistant
- Can be used to encapsulate parts
- Listed under NSN stock #8040-00-162-9704

5 Minute® Epoxy Adhesive **P/N 14630 (9lbs/Set)** **P/N 14250 (Dev-Tube)**

Rapid-curing, general-purpose adhesive/encapsulant which easily dispenses and mixes in seconds, dries in 15 minutes and reaches functional strength in 1 hour.

Intended Use: Bonds metals, fabrics, ceramics, glass, wood, and concrete (in combinations) Product

Features: 100% reactive, no solvents Good solvent resistance Bonds metals, fabrics, wood, and concrete

KEY FEATURES

- Bonds rigid durable substrates such as metals, glass, ceramics, concrete and wood in all combinations
- Forms a clear hard rigid bond self-leveling liquid in minutes
- Listed under NSN Stock#8040-00-264-6816:#8040-01-067-6126
- Functional strength in 1 hour
- 100% reactive, no solvents

PHYSICAL PROPERTIES

Devcon®



ADHESIVES

	OEM Material	5 Minute Epoxy 14250/14630	2Ton Clear Epoxy 14310/14360	Epoxy Plus 25 14278	Plastic Welder 14335/14340	Flex Welder 14345	Metal Welder/ Metal Welder II 14366/14363
METAL	Aluminum	*	*	*	○	○	*
	Brass	*	*	*			
	Cast Iron	*	*	*	*	✓	*
	Copper	*	*	*			
	Ferrite	✓	✓	*	*	✓	*
	Painted metals	✓	✓	✓	✓	✓	*
	Plated metals				✓		✓
	Sheet metal			*	*		*
	Stainless steel1	*	*	*	○	○	*
	Cold rolled steel	*	*	*	*	*	*
	Galvanized			*		○	
PLASTIC	ABS			✓	*	✓	*
	Acrylics			*	*	✓	*
	Fiberglass	✓	✓	*	*	*	*
	Gel coats			*	✓	✓	*
	Epoxy	✓	✓	*	*	✓	*
	Polyamides(Nylon)			*	*	✓	○
	Polyester			*	*	*	*
	Polycarbonate			✓	*	✓	*
	PPO and PPO blends				*	*	*
	Vinyls	✓	✓	✓	*	✓	*
	RIM urethane				*	✓	*
	SMCs			✓			*
	Styrene resins			✓	*	*	*
	Polyacrylate(CAL, CAB, CAP)			✓	*	✓	*
	Polyurea				*	✓	✓
	Cellulosics				*	✓	✓
	Polysulfone				✓		*
	Phenolics			✓	*	✓	*
	Laminates			✓	*		*
WOOD	Wood (hard and soft)	*	*	*	✓	✓	✓
	Plywood	*	*	*	✓	✓	✓
	Particle board	*	*	*	✓	✓	✓
OTHER	Brick	*	*	*	*	✓	*
	Concrete	*	*	*	*	✓	*
	Honeycomb	✓	✓	*	*	✓	*
	Ceramics	✓	✓	*	*	✓	✓
	Glass	✓	✓	✓			

* Excellent Choice ✓ Good Choice ○ Requires Metal Prep 90

CONSUMER PACK

Devcon®



CONSUMER PACK 2-PART EPOXY GLUES

2 TON EPOXY

: P/N S-35 (28.4 gr)

Strength : 2,500 lbs/in²
 Drying Color : Clear
 Waterproof. Temperature to : 94°C
 Handling Time : 2 hours; Full Cure: 8 hours
 Working Time : 10 minutes
 Mix Ratio : 1:1

Bonds: Metal & Wood, Concrete, Glass & China, Ceramics, Fiberglass, Stones & Gems, Jewelry



5 MINUTE EPOXY

: P/N S-205 (28.4 gr.)

Strength : 1,500 lbs/in²
 Drying Color : Clear
 Waterproof. Temperature to : 94°C
 Handling Time : 15 minutes; Full Cure: 1 hour
 Working Time : 5 minutes
 Mix Ratio : 1:1

Bonds: Metal & Wood, Concrete, Glass & China, Ceramics



2 TON EPOXY

: P/N S-30 (56.8 gr.)

Strength : 2,500 lbs/in²
 Drying Color : White
 Waterproof. Temperature to : 94°C
 Handling Time : 2 hours; Full Cure : 8 hours
 Working Time : 30 minutes
 Mix Ratio : 1:1

Bonds : Metal & Wood, Concrete, Porcelain & China, Ceramics, Fiberglass, Pearl Decoration



2 PART REPAIR EPOXY (Metal Surface Repair. Can be drilled, taped, sanded & painted)

PLASTIC STEEL EPOXY

: P/N S-5 (56.8 gr.)

Strength : 2,500 lbs/in²
 Drying Color : Dark Grey
 Waterproof. Temperature to : 121°C
 Handling Time : 2 hours; Full Cure: 16 hours
 Working Time : 20 minutes
 Mix Ratio : 1:1

Repairs and Fills Gaps in : Copper & Steel, Aluminum, Stainless Steel, Brass & Iron, Pewter



THERMOPROBE



TP7-C



TP9



Recommended Operation per API 7: International Safety Guide for Oil Tankers and Terminals, API 4 and other recommended procedures and standards.

Custody Transfers, Hazardous Location, Intrinsically safe, Inventory, PET, Tank, Pipeline, Barge, Ship, Railcar, Tank Truck, Viscosity, Petroleum, Portable, Digital, Thermometer, Inspector, NIST, Certified, Ex, UL, ATEX, IECEx, TIIS, GOST, Gasoline, Diesel, Asphalt, Molten Sulphur, Petrochemical, Viscous, Caustic, Acid, Chemical, Alkali, Molasses, Syrup, Distilled spirits, Aviation fuel

The **TP7-C** is an intrinsically safe digital gauging thermometer designed for use in hazardous locations. ThermoProbe has designed the TP7-C with reliable RTD sensors based on our previous industry-standard thermometers such as the TP7 and TP8.

SPECIFICATIONS: <http://www.thermoprobe.net/product/tp7-c/>

Certifications

The TP7-C certifications are recognized internationally (IECEx), in Europe (ATEX), Japan (TIIS) and Russia (GOST).



II 2 (1) G Ex ib [ia] IIB T4
DEMKO 11 ATEX 1104891X
IECEx ULD 11.0008X

The **TP9** ergonomic probe storage and stainless construction is well suited for gauging heavy products that are hard to clean such as asphalt. With multiple probe configurations and allowable lengths up to 50 meters (165 ft), the TP9 is well suited to many tank gauging applications.

Certifications

The TP9 certifications are recognized internationally (IECEx), in Europe (ATEX), Japan (TIIS) and Russia (GOST).



II 2 (1) G Ex ib [ia] IIB T4
DEMKO 11 ATEX 1104891X
IECEx ULD 11.0008X

SPECIFICATIONS: <http://www.thermoprobe.net/product/tp9/>

TL1-W Intrinsically Safe Portable Stem Thermometer for Laboratory and Field Reference – Rugged Design. The TL1-W is an intrinsically safe digital laboratory thermometer designed for use in hazardous locations. The TL1-W is an improved version of the original ThermoProbe model TL1. The TL1-W is intended to be used anywhere a precision glass stem thermometer or other type thermometer is used.

Certifications

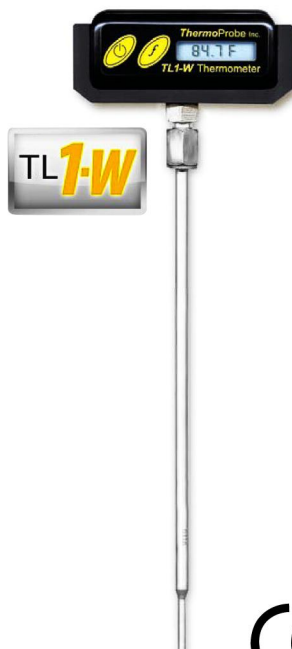
The TL1-A certifications are recognized in Europe (ATEX) and internationally (IECEx).



II 2 G Ex ib IIC T4
DEMKO 11 ATEX CO09993X
IECEx ULD 11.0009X

SPECIFICATIONS: <http://www.thermoprobe.net/product/tl1-w/>

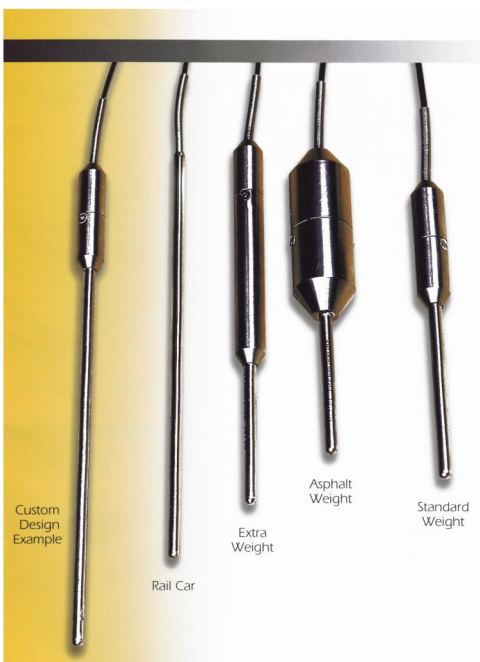
DIGITAL THERMOMETERS



TL1-W



TL1-R



PROBE TYPES



EIS 25

OIL GAUGING



KOLOR KUT-Petroleum and Liquid Product Indicator

Directions for Use: Put a thin film of Kolor Kut on the tape or rod where the level of the water (bottom of tank), alcohols (bottom of tank) or gasoline (upper tank) or liquid (upper tank) is expected. Lower the tape or rod into the tank or drum. Level will appear as a color contrast on the tape or rod. Instantaneous color change in hydrocarbons and acids. Color change in heavy oils will take 10-15 seconds.

KOLOR KUT WATER FINDING PASTE: P/N KK01 3 oz. Tube

Kolor Kut Water Finding Paste **KK01** offers a simple way to check for the presence of water in petroleum fluids such as: gasoline, kerosene, diesel, and heavy fuel oil, by "sticking" the tank (with a measuring stick, rod or bar) with the paste applied to it. The color of the paste changes instantly upon contact with water.

Golden brown color, Turns Bright Red upon contact with Water.

Gauge water level in all petroleum products and hydrocarbons &

Acids (Sulfuric, Nitric, Hydrochloric), Amonia, Soap solutions, Saline and Chloride Solutions.

MSDS: <http://icllabs.com/wp-content/uploads/2015/12/Kolor-Kut-WFP.pdf>

KOLOR KUT GASOLINE FINDING PASTE: P/N KK 02 2.25 oz./jar

Kolor Kut Gasoline Finding Paste **KK02** offers a simple way to check for the presence of hydrocarbon fuels such as: gasoline, kerosene, diesel, and heavy fuel oil, by "sticking" the tank (with a measuring stick, rod or bar) with the paste applied to it. The color of the paste changes instantly upon contact with water.

Light pink color, Turns Red upon contact with Gasoline, Diesel, Naptha, Kerosene, Gas Oil, Crude Oil, Jet Fuels & other Hydrocarbons

MSDS: <http://icllabs.com/wp-content/uploads/2015/12/Kolor-Kut-GGP.pdf>

KOLOR KUT MODIFIED WATER FINDING PASTE: KKM3 2.5 oz. Tube

Kolor Kut Water Finding Paste **KK01** offers a simple way to check for the presence of water (as little as 6%) in blended and oxygenated fuels such as: Gasohol, E20, Bio-fuels and Bio- diesel where the presence of ethanol is present. KKM3 is used by "sticking" the tank (with a measuring stick, rod or bar) with the paste applied to it. The color of the paste changes instantly upon contact with water.

Dark brown color, Turns Bright Red upon contact with water. Gauge water level

In Methanol and Ethanol (Biofuels). Alcohol solutions with as little as 6% water will appear as a light yellow color. Normal gauging appearance, Dark Red shows the water level and light yellow shows the alcohol/water level. Conforms to Mil-W-83779 standard.

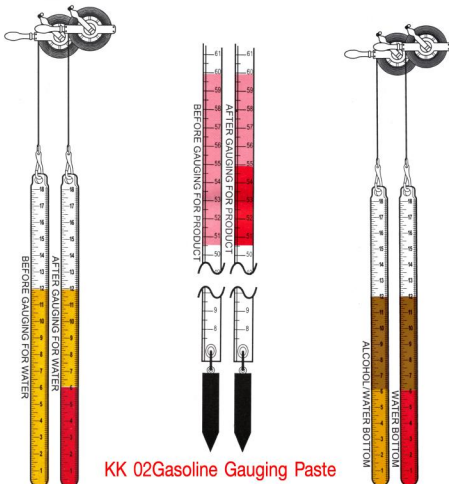
MSDS: <http://icllabs.com/wp-content/uploads/2015/12/Kolor-Kut-Modied-WFP.pdf>

LUFKIN OIL GAUGING & LAYOUT TAPES

NOTE: Gauging Tapes and Plumb Bobs are sold separately

TAPE PART NO.	DESCRIPTION	REPLACEMENT BLADE	PLUMB BOB
CN1290SF/590	1/2" X 25' Atlas Chrome Nubian	OCN1290SF/590	590G Inage 20 oz. Marking " & 1/8"
C1290SF/590	1/2" X 25' Atlas Chrome Clad	OC1291SF/590	590G Inage 20 oz. Marking " & 1/8"
CN1291SF590	1/2" X 33' Atlas Chrome Nubian	OCN1291SF/590	590G Inage 20 oz. Marking " & 1/8"
CN1293SF590	1/2" X 50' Atlas Chrome Nubian	OCN1293SF/590	590G Inage 20 oz. Marking " & 1/8"
CN1293SMEF/590	1/2" X 50' (13mmx 15 m) Atlas Chrome Nubian	OCN1293SMEF/590	590GM Inage Marking in cm
CN1297SMEF/590	1/2" X 100' (13mmx 30 m) Atlas Chrome Nubian	OCN1297SMEF/590	590GM Inage Marking in cm
C2276D	1/4" X 50' Derrick	OC2276D	
C2276ME	1/4" X 100' (6mm x 30m)	OC2276ME	
9312D	3/4" X 12' Mezurall		

• P/N 590 Inage Plumb Bob 1" rd x 6" : No Markings

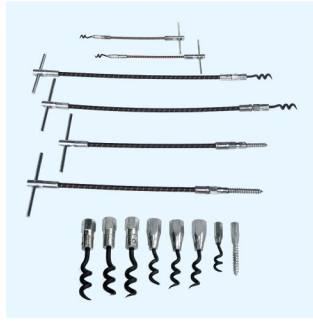
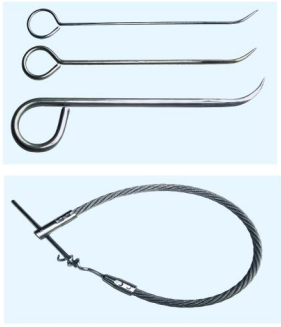


KK 02 Gasoline Gauging Paste

KKM3 Mod. Water Paste

KK01 Water Finding Paste

GARCO PACKING TOOLS



INDIVIDUAL TOOL

SETS

SET #	TOOL NUMBERS	STYLE	TIP NUMBERS
"A" SET- 11 PCS. IN PLASTIC BOX	F-1, F,2, P7, P8, P9	FLEX & PICK	C1,C2
"B" SET- 17 PCS. IN PLASTIC BOX	F-1, F,2, F3, P7, P8, P9	FLEX & PICK	C1,C2,C3 W1,W2,W3

GARCO PACKING TOOLS

Complete line of packing removal tools sold as individual tools or sets.

Corkscrew style (W 1-W3) for removing most packing types.

Woodscrew style for removing hardened packing.

Solid Shaft Picks (P7 P9) for removing dry and cracking packing

TOOL NUMBER	LENGTH	STYLE	REPLACEMENT TIP
F-1	7.5" (19 CM) 5/16" + PACKING	FLEX & CORKSCREW	C1 CORKSCREW W1 WOODSCREW
F-2	11" (28 CM) 7/16" + PACKING	FLEX & CORKSCREW	C2 CORKSCREW W2 WOODSCREW
F-3	14.5" (36.8CM) 1/2" + PACKING	FLEX & CORKSCREW	C2 CORKSCREW W2 WOODSCREW
P-7	10" (25.4 CM) 1/8" + PACKING	PICK	-
P-8	10" (25.4 CM) 3/16" + PACKING	PICK	-
P-9	10" (25.4 CM) 5/16" + PACKING	PICK	-

PACIFIC AND FIRE AEC Co.,Ltd

COMPANY PROFILE

Pacific and Fire AEC., Co., Ltd. has been operating in Thailand for more than 25 years. Pacific and Fire AEC, Co., Ltd. imports, stocks and distributes products from the USA, Europe, the UK and Asia. The main office is located in Nonthaburi Province with delivery, distribution and training throughout Thailand and to several countries making up the newly formed ASEAN Economic Community. The sixteen employees of this company function in sales, customer service, maintenance, distribution and sales support.

MISSION STATEMENT: To Partner with Our Customers and Suppliers to Make Thailand and the ASEAN Economic Community Safer Places to Live and Work.

CORE VALUES:

- Improve Worker Safety
- Improve Worker Performance
- Offer High Quality Products & Services to International Standards Providing Value to Our Customers.
- Perform Our Duties Respectfully, Honestly with Hard Work and Innovation
- Train in the Proper Use, Warranty and Service the Products Sold
- Provide Benefit to Our Customers, Employees, Thai Society and the ASEAN Economic Community.



HAND CLEANER



1111-06

1115-06

1204-21

GOJO Original Formula 1111-06 Cream-style hand cleaner with skin conditioners. Removes heavy grease, tar and oil. Rub on, wipe clean with towel, rinse hands. 4.5 lbs. Canister-6/case

GOJO Original Formula 1115-06 Cream-style hand cleaner with skin conditioners. Removes heavy grease, tar and oil. Rub on, wipe clean with towel, rinse hands. 4.5 lbs. Canister-6/case. Use with dispenser 1204-21

SDS: http://images.salsify.com/image/upload/s--SxoVTiM__--/a1xboy41zhwvztzfswt.pdf



GOJO Natural Orange Pumice Hand Cleaner with Hand Pump 0955-04 Lotion-style hand cleaner with pumice scrubbing particles. Gently removes heavy grease, tar and oil. Cleans fast. Put on, wipe clean with towel, rinse hands. 1-USG. Canister-4/case

SDS: <http://images.salsify.com/image/upload/s--1pbAJJ4Q--/gwgnbxd5zlxtabqwuf.pdf>



0915-06

0905-06

1204-04

GOJO Original Formula 0915-06 Lemon Pumice Cream-style hand cleaner with skin conditioners and pumice scrubbing particles. Removes heavy grease, tar and oil. Rub on, wipe clean with towel, use without water or with water, rinse hands. 4.5 lbs. Canister-6/case

GOJO Original Formula 0905-06 Lemon Cream-style hand cleaner with skin conditioners without pumice scrubbing particles. Removes heavy grease, tar and oil. Rub on, wipe clean with towel, rinse hands. 4.5 lbs. Canister-6/case

HAND ANTIBACTERIAL LOTION



7220-04

7200-01

GOJO 7220-04 Rich Pink Refill High Performance, gentle antibacterial lotion soap. For cleaning lightly soiled hands. 2000ml. Use with PRO TDX Dispenser

SDS: <http://images.salsify.com/image/upload/s--qexq6TZQ--/rx960ulpslrw61x2hq3.pdf>



5392-02

2720-12

PURRELL 5392-02 Advanced Hand Sanitizer Foam Refill High Performance, gentle antibacterial lotion soap. Kills 99.99% of most common germs. Thick, rich foam. 1200ml. Use with 2702 TFX 1200ML Dispenser

SDS: <http://images.salsify.com/image/upload/s--BCjbhJnM--/xfqadvq9y2iueqfeguqa.pdf>

PURRELL 5362-02 Premium Hand Sanitizer Foam Refill High Performance, gentle antibacterial lotion soap with vitamin E and Aloe. Kills 99.99% of most common germs. Thick, rich foam. 1200ml. Use with 2702 TFX 1200ML Dispenser

ANTI-SEIZE & RUST PREVENT

NEVER-SEEZE ANTI-SEIZE COMPOUNDS



- Protects against rust, corrosion, carbon fusion and seizure at high temp.
- Faster and easier disassembly during repairs and shut down.
- Color: Silver. Pressure Rating: 32,000 (tensile) Max.

Temperature Rating: 1,800F (800C). Mariners Choice Temperature Rating : 2,450 F (1,116 C)

NSA-16 Aerosol 16 oz. 12/cs.

NSBT-16 Paste 1 lb. Can (Brush Top) 12/cs

NSBT-8N Nickel Anti-seize Paste (Brush Top) 8 oz.

NMCBT-16 Mariners Choice Paste (Brush Top) 16 oz.

NS-160 Paste 1 lb. Can 12/cs.

NS-168 Paste 8 lb. Can 4/cs.

LIQUID WRENCH SUPER PENETRANTS



LIQUID WRENCH SUPER PENETRANTS

Loosen nuts, bolts, parts quickly with this penetrant

Use on welded joints, refinery pipes, spot-repair of steel structures.

PENETRANT P/N 6030 Aerosol 16 oz.

Loosen rusted bolts and parts by spraying and allowing the compound to seep in and loosen

L1-04 Liquid 4 oz. Bottle

L1-12 Aerosol 12 oz.

L2-12 Aerosol 12 oz. Penetrates, Lubricates, Protects (Use as a replacement for WD-40)

CROWN BRAND COMPOUNDS



COLD GALVANIZING P/N 7007

Aerosol 16 oz.

Zinc spray provides corrosion protection to metal surfaces.



P/N NMCBT-16

P/N NSBT-8

P/N NS- 42 B



FLUID FILM RUST PROTECTION

Lanolin based rust inhibitor and protection compound for use on all metal surfaces. Locks out and displaces moisture. Lubricates moving parts. Long lasting protection.

AS 11 Aerosol 11 oz.

DNAS Liquid 55 Gallon

MOLYSLIP®



MOLYSLIP MBG

COPASLIP-Formulated to not harden or soften under extreme temperature and operating conditions. Very wide operating range from -40°C to +1100°C (-35°F to +2000°F) Prevents metal-to-metal contact to increase reliability and component life. Provides permanent protection against rust and corrosion.

13005 500 gr. Can, 13050 5 kg. Can, 13001 100 gr. Tube, 13004 400 ml Spray Can

ALUMSLIP is an anti-seize assembly compound which is also a highly efficient thread lubricant and protective. ALUMSLIP contains finely divided lamellar particles of aluminum together with micronised talc and graphite, compounded with a non-melt bentone grease base. 11005 500 gr. Can

MOLYSLIP MBG is a bentone grease with molybdenum disulphide. The bentone base gives great stability at high temperatures, resistance to water and acids, and infusibility. It will not soften under heavy working conditions up to its working temperature limit. Moly slip 5976-25 Kg. Pail

SAFETY LIGHTING

WORKSAFE ALKALINE - The WorkSAFE series includes 2D and 3D-sized flashlights (both available in waterproof models), lanterns, All UL Class I, Division I rated for unsurpassed safety in the most hazardous environments and they're all affordable enough to meet even the most modest budgets. Waterproof and floats. Polyethylene body. UL standard embossed on body.



- 1.(2-D Cell) Model 13740 (2117) (Value Model) Model 14460 (2217) (Best Model)
 - 2.(3-D Cell) Model 14240 (2114) (Value Model) Model 14720 (2224) (Best Model)
 - 3.(6-V Cell) Model 07050 (2206) Lantern Style with Glove Size Handle
- ** Value Model (brass switch contact) Best Model (steel and brass switch contact)
- * Batteries not included
- DATA SHEETS: <http://www.flashlight.com/worksafe-alkaline/>

PELICAN SAFETY FLASHLIGHTS Xenon Bulbs * Hazardous Location * Water Resistant

FM PELICAN



- ** Must use "Alkaline" Batteries for maximum bulb life
- 1.Model 2400C-Stealthlite 45 Lumens One hand switch + Model 700 Helmet Mount (4-AA Cell-included)
 - 2.Model 2000C-Saberlight 53 Lumens Lens Shroud Twist on/off
 - 3.Model 1900C-Mitylight Lens Shroud Twist on/off
- CERTIFICATIONS:** lass I, Division 1 / Class I, Division 1 / Class II, Division 2 / IECEx ib
- DATA SHEETS: <http://www.pelican.com/us/en/pro/products/safety-ash-lights-and-headlamps/>



MAG INSTRUMENT

- 1.P/N M2A01H Flashlight With Pouch (2-AA cell)
 2. P/N S2D016, S3D016, S4D016 (2-D cell , (3-D cell) , (4-D cell)
 3. P/N S6D016 (6-D cell)
- www.maglite.com

MAG INSTRUMENT Incandescent Bulb *Water Resistant* Aluminum Body

Every Mag-Lite flashlight embodies a precise balance of rene optics, efficient power, durability and quality. Each Mag-Lite D-Cell flashlight includes two high intensity White Star Lamps for enhanced brilliance and extended range.

- 1.Model M2A01H-Mini maglite Compact flashlight + cloth holder
- 2.Model S2D016 (2-D Cell) S3D016 (3-D Cell), S4D016 (4-D Cell) Full Size Flashlight
- 3.Model S6D016 (6-D Cell) 178 Lumens

Division 1 WorkSAFE™ I

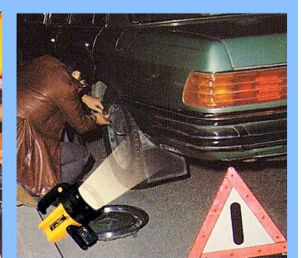
HAZARDOUS AREA

MODEL NUMBER	Type Designation	MSHA Approved	Underwriter Laboratories Division 1			
			Class I Group C	Class I Group D	Class II Group G	Class III
13740 / 14460	II	✓	✓	✓	✓	✓
14240 / 14720	II	✓	✓	✓	✓	✓
2206	II	✓	✓	✓	✓	✓

RECHARGEABLE

Qualifications of Rechargeable

1. Charge 12V / 220V
2. Complete Set include 6V battery and charger
3. Adjustable handle for carry



LED SAFETY LIGHTING



BRIGHTSTAR WORKSAFE LED

- For use in hazardous situations
- Division 1 Class 1
- World's Most Affordable
- Waterproof

- Anti-roll tube

WorkSafe™ Model # 2217- #15460 LED (2-D CELL)

Power Source: 2x 'D' Cell Alkaline Light Source: LED

Life: 30,000 hrs Runtime: 200 hrs Light Output: 80

Lumens Beam Distance: 99 Meters

WorkSafe™ Model # 2224- # 15720 LED (3-D CELL)

Power Source: 3 x 'D' Cell Alkaline Light Source: LED

Life: 30,000 hrs Runtime: 250 hrs Beam Distance: 88

meters Light Output: 60 Lumens



PELICAN LED LIGHTS

The new **3315 LED** Flashlight: the lightweight compact design houses 3AA batteries that power a single LED for 160 lumens of super bright LED light.

CERTIFICATIONS: Class I, Division 1 / Class II,



#700 HELMET LIGHT HOLDER FOR SAFETY AND FIREFIGHTING



The **2690** is made of impact and chemical resistant ABS and it's water resistant for all-weather use. It comes with an adjustable and comfortable cloth strap, as well as a heavy duty rubber strap that will not slip off your climbing helmet or hard hat. 74 lumens of LED light, 11 hours of battery run time and weighing in at 4.1 ounces CERTIFICATIONS: Class I, Division 1 / Class II, Division 1 / Class III, Division 1 / IECEx ia



MINI MAGLITE® LED FLASHLIGHT

145 m Beam

97 Lumens

MAGLITE® 2-CELL D LED FLASHLIGHT

412 m Beam

168 Lumens

MAGLITE® 3-CELL D LED FLASHLIGHT

412 m Beam

168 Lumens

LINE CARD

Devcon

Devcon

Metal Repair and Wear Coat
Emergency Repair

Honeywell

Honeywell Firefighting Gloves



HYSAFETY
EURO VI
FIREMAN VI



BSP FIREFIGHTING SUITS
EN Manufactured to NFPA
Eagle I, Eagle II, Century Series
Phenix Tech. Helmets-NFPA



THERMOPROBE- Intrinsically Safe
Thermometers Tank Gauging
Thermometer Stem Thermometer
for Labs and Field Reference



UVEX-Lens

Cleaning Supplies



EYESALINE
Eyewash



BOUTON - Lens Cleaning
Supplies



HARVIK- Firefighting
Boots EN & NFPA



SICOR- Firefighting
Helmets-EN

PGI- Firefighting
Hoods-NFPA



KOLOR KUT

Water Finding Paste-KK01&KKM3
Gas Finding Paste- KK02



MOLYSLIP

Anti-Seize Lubricants Copaslip
High Temp

NEVER-SEEZE

Anti-Seize Lubricants



DRAEGER

SCBA- PSS 3000/5000
Respirators, Gas Detectors
Chemical Protection Suits

KIDDE



Battery Operated Smoke Detector
HSG HOME SAFEGUARD
25-S Detector Tester to NFPA



TEMPEST- PPV BLOWERS

DD-Series- Direct drive

BD-Series- Belt Drive

EB- Electrical and Hazardous Area

FIREFIGHTING HOSES

ARMTEX ARMTEX

BLINDEX BLINDEX

TITAN TITAN



MORSE Industrial Bandsaws

GARCO

Packing Tools



GOJO

Industrial Hand Cleaners



AMKUS - Hydraulic Rescue Tools



PARATECH- Air Lifting Bags
Rescue Tools, Rescue Struts



VIPER- Firefighting Nozzles

Viper SG3012/SG7515- Adjustable

Rylstatic- New Nozzle Technology

BD3012/BD7515- Adjustable



MSA- Safety Helmets and Wear



Nemesis- Eye Protection

HAZARDOUS AREA FLASHLIGHTS



BRIGHTSTAR- UL DIV1

Lights and Lantern



PELICAN- FM Approved

Lights and Headlamps



MAGLITE- Aluminum Body



DELTA FIRE Foam Equipment

Foam Branch HV225/450

Foam Eductors Z225/450

Mobile Foam DF130

WARRANTY

PACIFIC AND FIRE AEC Co., Ltd. WARRANTY TERMS

WHAT IS PROTECTED: Pacific and Fire AEC Co., Ltd. (Seller) provides a LIMITED one year warranty on all products sold by the company. The agreement is between the Seller and the Purchaser. The one (1) year warranty begins on the day the tax invoice is issued and continues for 365 days. The warranty is valid when the item purchased is used correctly, for the intended purpose and application, stored and maintained according to the owner's manual and used in a safe manner by trained persons. If there is any question regarding the use, maintenance, storage or safe practice when using any of the products sold by Pacific and Fire AEC Co., Ltd., please contact the seller to provide any information the user may require.

EXCLUSIONS: The Limited One Year Warranty covers all defects in material and workmanship with the following exceptions, specified as follows: (1) damage or failure due to accident, neglect in maintenance, unsafe or incorrect use in the wrong application, normal wear and tear, mishandling, damage from improper storage. Repairs or modifications from any person other than the trained technician at Pacific and Fire AEC Co., Ltd., voids the warranty.

WARRANTY CLAIMS: When a warranty claim is submitted, the defective goods must be returned to Pacific and Fire AEC Co., Ltd. for inspection. Once the goods are received, the goods will be inspected to determine the cause of the defect. Once the cause is determined, a reply will be provided to the purchaser as to the cause and whether the defect is covered by the warranty or falls under the "exclusion" clause.

1. If the item defect is covered by the warranty, by the decision of Pacific and Fire AEC Co, Ltd., the item can be repaired or replaced as may be fitting to the nature of the defect.
2. If the defect is not covered by the warranty, Pacific and Fire AEC Co., Ltd. will supply supporting information and offer to repair or replace the item as the standard repair or replacement cost.

WHO PAYS FOR WHAT: Pacific and Fire AEC Co., Ltd. will collect the item and return it to the company for inspection at no charge. If the item is located outside of the Bangkok Metropolitan Area, the purchaser will return the item to Pacific and Fire AEC Co., Ltd. at their own expense.

REPAIR: Pacific and Fire AEC Co., Ltd., offers repairs on all items that can be repaired that are distributed and sold by the company. The procedure to repair is that the item is returned to Pacific and Fire AEC Co., Ltd. for inspection and quotation on the repair. There is a THB.500 inspection charge on most items. For Breathing Air Compressors the inspection charge is THB. 5,000. The inspection charge will be included in the amount of the repair if the repair is made. If the decision is made not to repair, the inspection charge will be collected in cash with the return of the item.



PACIFIC AND FIRE AEC Co., Ltd.



HEAD OFFICE

PACIFIC AND FIRE AEC Co.,Ltd.

51/193 Moo1 Soi Wat-Bangsrimuang Thanam-non Rd.
T.Bangsrimuang A.Muang Nonthaburi 11000 Thailand
Tel : 02-038-5840-41 Fax : 02-886-7585

Customer Service : DEVCON Epoxies

Mobile Phone : 081-825-1634

E-mail : csdevcon@pacificandfire.com

Line Id : devcon__pacific

Customer Service : Industrial Tools And Safety

Mobile Phone : 081-829-7261

E-mail : customer@eis-pacific.com

Line Id : devcon__pacific



www.pacificandfire.com www.eis-pacific.com