resimac Ltd.

LEAK SEALING AND PIPE REPAIR SYSTEMS

Products and Systems

Paste Grades

101 Metal Repair paste – Two component epoxy repair paste
Rebuild, resurface worn and corroded parts and used as structural adhesive

103 Metal Repair Stick – Fast curing epoxy putty
Emergency repairs to leaking pipes, tanks, flanges etc

104 Metal Repair Fluid XF – Rapid curing two component epoxy fluid
Emergency repair material which is water and oil tolerant

105 Aqua Stick – Fast curing underwater repair putty
Emergency repairs to metallic surfaces underwater

302 Epoxy Repair paste – Two component surface tolerant epoxy repair paste. Ideal for reprofiling corroded pipes.

Products and Systems

Wrapping Systems

101 Epoxy Repair Paste and 807 Reinforcement Tape – Epoxy paste and wetted out reinforcement sheet used to composite wrap pipes.

109 Self-Amalgamating Repair Tape – A Silicone tape designed for live leak sealing on low pressure pipes up to 43 psi (3 bar)

110 Rubber Tourniquet – A reusable torniquet designed for emergency leak sealing on live water pipes with103 emergency repair stick. Withstands pressures up to 5 bar (72.5psi)

108 Pipe Repair Tape – A water activated repair bandage for sealing leaking pipes. Can be used with 103 emergency repair stick. Withstands 400 psi.

301 Epoxy resin and hardener – A solvent free epoxy resin that can be used for pipe wrapping. Pressure resistant up to 300 psi.

310 Carbon Fibre Wrap– Advanced engineered composite repair solution

Resimac 101 Metal Repair Paste and 807 Wrap

Steps to do before external repair wrap

1. Roughen the area to be repaired/wrapped using a suitable tool. Ideally this would be an MBX bristle blaster. If this is not available use any tool such as a mechanical grinder, course files, wire brushes or very course grit paper. It is important to expose the glass fibre within the GRE.

2. Clean the roughened area with a suitable solvent such as xylene to remove any grease or dust.

3. Stabalise any cracks if possible, by drilling a small hole at each end if deemed neccessary.

4. Mix a small amount of Resimac 101 metal repair paste as per the data sheet and force this into any cracks or any other damaged areas. Smooth this out to the contours of the pipe circumference. If possible tighten the flanges to close this crack/gap and smooth off any Resimac 101 that has exuded out.

5. Calculate the circumference of the pipe and cut a length of Resimac 807 reinforcement sheet 3 times this length.

6. If this length is deemed too long to handle for wrapping this can be cut into more manageable lengths and applied at the opposite side to the previous completed wrap.

PIPE REPAIR SYSTEMS

Quick application guide

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101 Metal Repair Paste

- Solvent free epoxy repair paste
- High build capability 25mm without slumping
- Fully machineable once cured

Cure Times

At 20°C (68F°) the product will have the following cure times –

Usable Life	30mins
Machining	2 hours
Maximum Overcoating	6 hours
Full cure	3 days

Coverage Rates

1kg (2.2lb) of fully mixed product will give the following coverage rates –

0.406m²at 1mm 4.3ft² at 40mil
0.203m²at 2mm 2.2ft² at 80mil
0.135m²at 3mm 1.45ft² at 1/8"

Colour

Mixed material - Dark grey
Base component – Dark grey
Activator component –Light grey

Over-coating times

Minimum - as soon as it is touch dry.

Maximum - the over-coating time should not exceed 6 hours.

Typical Application

Worn pump shafts
Cracked pump or valve casings
Scored hydraulic rams
Worn bearing housings
Damaged flanges
Leaking tank seams
Worn keyways
Cracked engine blocks
Plate bonding

Technical specifications and characteristics

Mixing ratios	By weight	5:1
	By volume	3:1
Volume capacity		
	Metric	406cc/kg
	Imperial	24.5cu in/2.2lb

Surface Preparation

Metallic Substrates –Mechanical abrasion

1. All oil and grease must be removed from the surface using an appropriate cleaner such as MEK.
2. All surfaces must be mechanically abraded using handheld grinders to ***ISO 8501/4 ST3 (SSPC SP3 ST3)***.
3. Once abraded, the surface must be degreased and cleaned using MEK or similar type material.
4. All surfaces must be coated before gingering or oxidation occurs.

Metallic Substrates – Abrasive blast cleaning

1. All oil and grease must be removed from the surface using an appropriate cleaner such as MEK.
2. All surfaces must be abrasive blasted to ***ISO 8501/4 Standard SA2.5 (SSPC SP10/ NACE 2)*** minimum blast profile of 75 microns (3mil) using an angular abrasive.
3. Once blast cleaned, the surface must be degreased and cleaned using MEK or similar type material.
4. All surfaces must be coated before gingering or oxidation occurs.

PLEASE NOTE: *For salt contaminated surfaces the substrate must be pressure washed with clean water and checked for salt contamination, please refer to the surface preparation and pre-application guide for further information.*

Mixing and Application

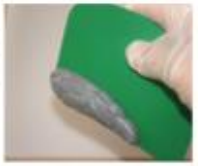
STEP 1
Ensure you have 1 x base unit, 1 x activator unit, 1 x spatula, 1 applicator, 1 x clean mixing area.

STEP 2
Take equal 3 equal measures of base material, clean the spatula, then take 1 measure of the activator.

STEP 3
Mix the two components using the spatula provided, ensure any unmixed material around the edges is mixed.

STEP 4
To ensure the product is fully mixed create a diamond pattern on the surface and look for any areas which are not mid grey in colour.

STEP 5
Once the material is fully mixed use the applicator tool provided to apply the 101 metal repair paste to the surface.



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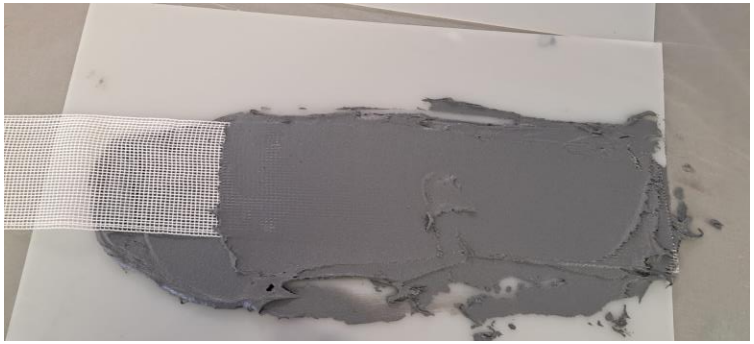
Step 1

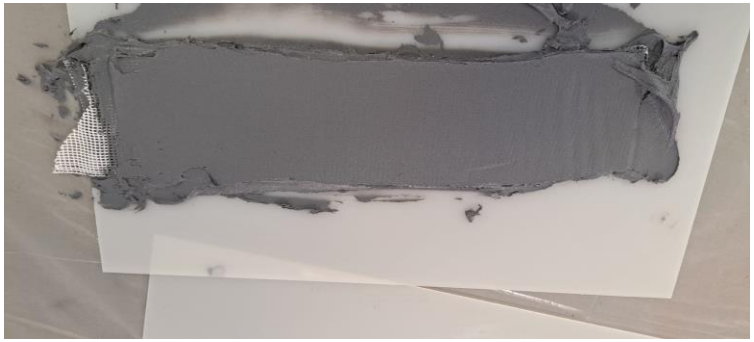
Mix Resimac 101 and wet out pre cut length of 807 tape into the mixed material folding over the tape and continue to wet out.

Step 2



Continue to fold the 807 into the mixed 101 until it is fully wetted out as in step 3.

Step 3



Fully wetted out 807.

Step 4

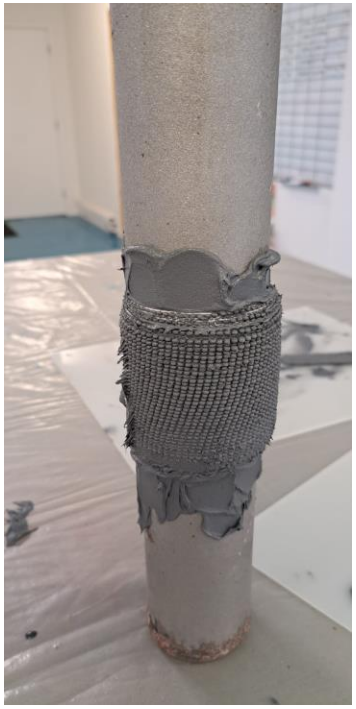
Remove the wetted out 807 as it is now ready for wrapping of the pipe.

PIPE REPAIR SYSTEMS

Step 5

Prior to wrapping the pipe with the 101 it is important to also apply a thin layer of 101 onto the prepared pipe surface.

Step 6



Following wetting out of the pipe wrap the 101 with 807 around the circumference of the pipe at least 3 times ensuring it is pulled tight to force material through and avoid air entrapment

Step 7

Once all tape is wrapped apply more Resimac 101 to obliterate the 807 mesh.

Step 8

Smooth out the repair with an applicator tool or gloved hand.

109 Self-Amalgamating Repair Tape

Sizes

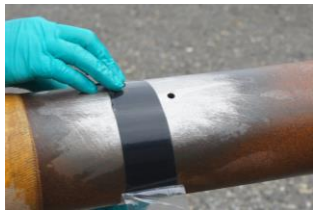
- 24mm x 3.6M (1” x 12’): Suitable for 48mm (2”) diameter pipe and under repairs.
- 48mm x 10.9M (22 x 36’): Suitable for 48-150mm (2-6”) diameter repairs

109 Self-Amalgamating Repair Tape

Quick Application Guide

Step 1

Centre the tape over the leak and wrap firmly around the pipe, stretching it to approximately double its natural length.



Step 2

Remove the backing film as you wrap, overlapping each layer by 50% for a secure seal.

Step 3

Ensure the wrap extends at least 50mm beyond the leak on both sides (increase for high-flow leaks).

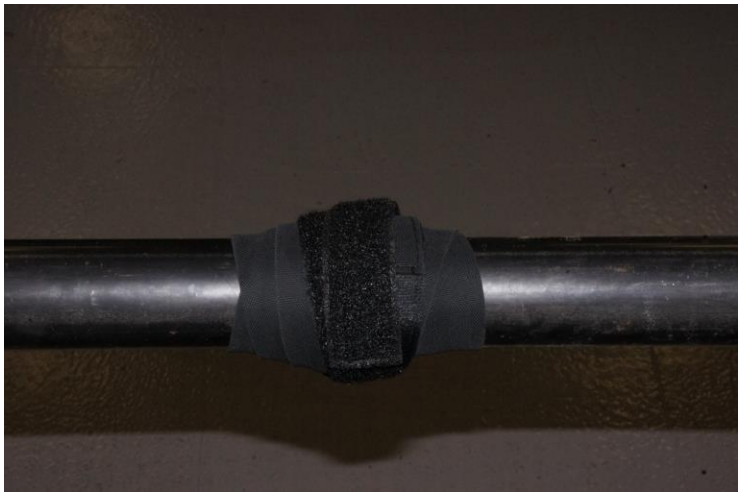
Step 4

Apply a minimum of 5 layers, repeating as needed until the leak is fully sealed.

110 Rubber Tourniquets

Sizes

- 30mm x 1M (1.18” x 3’): Up to 4” diameter pipe repairs.
- 30mm x 1.5M (1.18” x 4.6’): Up to 5” diameter pipe repairs.
- 30mm x 2M (1.18” x 6.4’): Up to 6” diameter pipe repairs.



110 Rubber Tourniquets

Quick Application Guide

Step 1

Mix a small quantity of 103 Repair Stick (refer to TDS) and shape it to cover the leak area with a 25mm (1") overlap and 10mm (0.4") thickness.

Step 2

Apply the mixed material directly above the live leak without covering the leaking section of the pipe.

Step 3

Begin wrapping the tourniquet around the pipe, ensuring the first wrap secures the repair material in place.

Step 4

On the second wrap, cover the repair material and use firm pressure to force it into the leak area.

Step 5

Each wrap should overlap the previous by approximately 50%, extending at least 75mm (3") beyond the repair area on both sides.

Step 6

Wrap the entire length of the rubber tourniquet and fasten securely with the velcro attachment for a firm hold.

108 Pipe Repair Tapes

Sizes

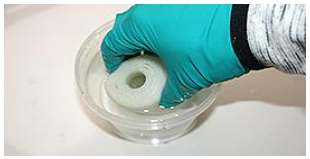
- 50mm x 1.8M (2” x 6’) : Up to 24mm (1”) diameter pipe repairs.
- 50mm x 3.6M (2” x 12’) : Up to 48mm (2”) pipe diameter repairs.
- 75mm x 3.6M (3” x 12’) : Up to 75mm (3”) pipe diameter repairs.
- 100mm x 3.6M (4” x 12’) : Up to 200mm (8”) pipe diameter repairs.
- 100mm x 9.1M (4’ x 30’) : >200mm (8”) pipe diameter repairs.
- 150mm x 9.1M (6” x 30’) : >200mm (8”) pipe diameter repairs.

108 Pipe Repair Tapes

Quick Application Guide

Step 1

Ensure you have:
Foil wrapped 108 pipe repair tape
1 x tub of water
1 x pair of gloves
103 Metal repair stick
110 Rubber tourniquet (optional)

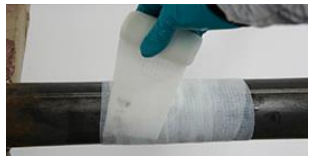


Step 2

Cut the required volume of 103 metal Repair stick, mix by hand until uniform colour and press into leak point. Hold in place until cured or secure with 110 Tourniquet (remove 110 when cured).

Step 3

Open package, submerge the roll in a tub of clean water and squeeze 2 or 3 times and for around 5 seconds.



Step 4

Wrap the tape as tightly as possible, keep the bandage wet and apply the full roll (apply further rolls as required).

Step 5

Once the resin starts to foam wet your hands and massage the surface of the bandage until you have a fully cured hard white resin on the surface of the pipe.

108 Pipe Repair Tapes

Bandage Requirements

Guide to pipe diameter, pressure, operating temperature, bandage width & repair width.

			Bandage Requirements		
Nominal Pipe Diameter	**Minimum repair width**	**Operating Temperature**	**50psi/3.4Bar (10 wraps min)**	**150psi/10.3Bar (15 wraps min)**	**400psi/27.5Bar (20 wraps min)**
12.5mm	50mm	120° C (248° F)	1 of 50mm x 1.8M	1 of 50mm x 1.8M	1 of 50mm x 1.8M
25mm	50mm	120° C (248° F)	1 of 50mm x 1.8M	1 of 50mm x 1.8M	1 of 50mm x 1.8M
50mm	55mm	120° C (248° F)	1 of 50mm x 3.6M	1 of 50mm x 3.6M	1 of 50mm x 3.6M
75mm	75mm	120° C (248° F)	1 of 50mm x 3.6M	1 of 100mm x 3.6M	2 of 100mm x 3.6M
100mm	90mm	120° C (248° F)	2 of 50mm x 3.6M	2 of 100mm x 3.6M	2 of 100mm x 3.6M
150mm	120mm	120° C (248° F)	2 of 50mm x 3.6M	3 of 100mm x 3.6M	3 of 100mm x 3.6M
200mm	175mm	120° C (248° F)	2 of 100mm x 9.1M	3 of 100mm x 9.1M	4 of 100mm x 9.1M
300mm	200mm	120° C (248° F)	3 of 100mm x 9.1M	4 of 100mm x 9.1M	5 of 100mm x 9.1M
450mm	240mm	120° C (248° F)	6 of 100mm x 9.1M	8 of 100mm x 9.1M	11 of 100mm x 9.1M

Low Pressure Live Leak Repair
103 Metal Repair Paste
108 Pipe Repair Tape

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301 Epoxy Resin Repairs

Sizes

301 Epoxy Resin and Hardener – 300gm and 6kg

701 Glass Tape – 50mm x 50mtr

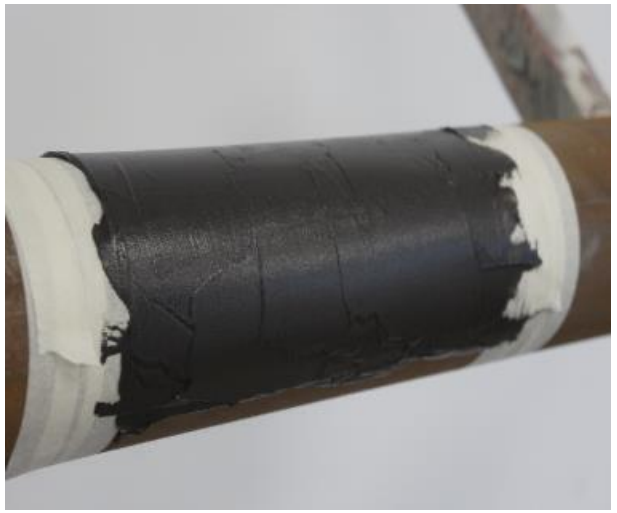
703 Glass Tape – 100mm x 50mtr

302 Epoxy Repair Paste

Two component surface tolerant repair paste for recontouring equipment, prior to another Resimac wrapping or plate bonding system being applied.

Sizes

302 Epoxy Repair Paste – 200gm 1kg and 6kg



PIPE REPAIR SYSTEMS

Quick application guide

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302 Epoxy Repair Cement

Solvent free epoxy repair paste
High build capability 20mm without slumping
Suitable for manual/ mechanical prep surfaces

Cure Times
At 20°C (68F°) the product will have the following cure times

Usable Life	30mins
Touch dry	6 hours
Hard dry	12 hours
Full cure	2 days

Coverage Rates
1kg (2.2lb) of fully mixed product will give the following coverage rates –
0.625m² at 1mm
6.7ft² at 40mil
0.313m² at 2mm
3.3ft² at 80mil
0.208m² at 3mm
2.2ft² at 1/8"

Surface Preparation

Hand tools, use a wire brush or coarse sand paper to abrade the surface. Ensure all loose material and as much surface contamination is cleaned from the surface.

Mechanical tools, use a handheld mechanical grinder with a coarse grinding pad or rotary wire brush. DO NOT POLISH THE SURFACE, ENSURE THAT THE SURFACE HAS A CROSS HATCH PATTERN.

MBX bristle blaster, for the best mechanical surface preparation results use an MBX bristle blaster.

Once the surface has been cleaned ensure the repair area is washed down with solvent such as MEK (Methyl Ethyl Ketone).

Colour
Mixed material - Black
Base component – Black
Activator component – Beige

Over-coating times
Minimum - as soon as it is touch dry.
Maximum - the over-coating time should not exceed 24 hours.

Typical Applications

Damaged flanges
Leaking tank seams
Plate bonding
Rebuilding internal tank surfaces
Internal & External pipeline surface

Technical specifications and characteristics

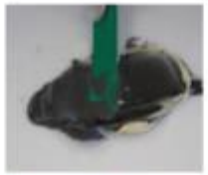
Mixing ratios	By weight	1:1
	By volume	1:1
Volume capacity		
	Metric	625cc/kg
	Imperial	38cu in/2.2lb

Mixing and Application

STEP 1
Ensure you have 1 x base unit, 1 x activator unit, 1 x spatula, 1 applicator, 1 x clean mixing area.

STEP 2
Take equal measures of the base and activator material.

STEP 3
Mix the two components using the spatula provided, ensure any unmixed material around the edges is mixed.



STEP 4
To ensure the product is fully mixed create a diamond pattern on the surface and look for any areas which are not black in colour.

STEP 5
Once the material is fully mixed use the applicator tool provided to apply the metal repair paste to the surface.

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QAG302.rv3.22082019

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Quick Application Guide Resimac 301 Epoxy Resin

Step 1

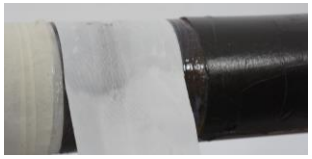
Ensure you have:
1 x base unit
1 x activator unit
1 x spatula
1 x brush
1 x 701 or 703 glass tape

Step 2

Mix the two components using the spatula provided, ensure any unmixed material around the edges is mixed.

Step 3

Apply the mixed material at 1mm WFT using a brush.



Step 4

Wrap the glass tape around the pipe 3 times to create an anchor point.

Step 5

Then wrap the glass tape along the length of the pipe ensuring you overlap the glass tape by 50%.

Step 6

Once the entire length of pipe has been wrapped apply mixed resin to the pipe surface, wrap the tape 3 times around the pipe to terminate the repair.

Step 7

After the pipe wrap has been terminated, apply another layer 301 Epoxy Resin & Hardener at 500 microns WFT and repeat the glass tape wrapping.

Step 8

After the 2nd wrap of glass tape has been terminated. Apply 301 Epoxy Resin & Hardener at 500 microns WFT and repeat the glass tape wrapping process for a 3rd and final time.

Step 9

The completed system will range from 2-5mm dry film thickness depending how much 302 Epoxy Repair Cement has been applied.

Step 10

After 24hours at 20˚C (68˚ F) this repair system will be ready for service.

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Repair - Protect - Upgrade

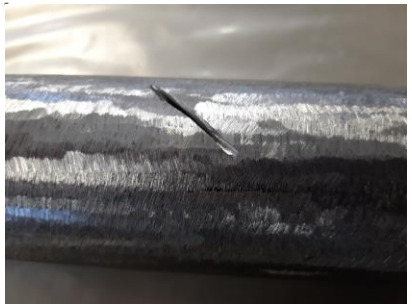
101 Bonding Steel Doubler Plate and overcoated with 301

CARBON FIBRE WRAP SYSTEM

High Strength Composite Repair

The Carbon Fibre Repair System is an advanced repair solution designed for damaged pipes and process systems. The system is based on a surface tolerant, high build epoxy filler and epoxy resin hardener, when combined with carbon fibre fabric, it gives a high strength finish to external pipe surfaces. The repair system is solvent free making it ideal for in-situ repairs and confined spaces.

Hydrostatic Test Results



Damage type	Surface preparation	Repair system	Cure period (@20c)	Highest pass pressure (Bar)	Fail pressure (Bar)
Saw cut	Mech prep	103	16 hrs	30	40
5.5mm hole	Mech prep	103 + 108 (High pressure resistance method)	16 hrs	35	40
Saw cut	Mech prep	302 Plate bond (no wrap)	16 hrs	25	30
Saw cut	Mech prep	101 Plate bond (no wrap)	16 hrs	100	No Fail (>125 Bar)
5.5mm hole	Mech prep	302 plate bond, 301 wrap	7 day	75	100
5.5mm hole	Mech Prep	103, 301 wrap	7 day	50	75
Saw cut	Mech prep	302, 301 wrap, carbon wrap	72hrs	60 Bar	70 Bar