Technical Data Sheet
June 2013

PX800LM

A fast curing, metal reinforced epoxy resin designed for the emergency repair of metal parts

Application

- Formulated to repair, patch and rebuild metal parts
- Repair cracks and breaks in machinery

Key Properties

- Repairs in under an hour
- Excellent resistance to oil, gasoline water and other chemicals
- Easy to mix and use

Description

- Basic Two-component epoxy adhesive
- Resin RX800LM
- Hardener HX800LM

Physical Data (approx. – values)

	Resin	Hardener	Mixed
Colour	Grey	White	Grey
Specific Gravity	2.46	1.40	1.93
Viscosity (mPas) @ 25°C	Thixotropic	Thixotropic	Thixotropic

Cure Schedule (150ml sample)

Temperature	Working Life (minutes)	Gel Time (minutes)	Light Handling (minutes)	Full Cure (hours)
RT	5	7	60	24
30°C			40	12
40°C			30	6
50°C	-	-	20	4

*RT is defined as 20-25°C

Cure time will depend on cross sectional area, ambient conditions, and mixing method. The above are typical values and will vary depending on the cured mass and application. Hotter temperatures may be used for faster cure but will result in higher post cure shrinkage and higher cure exotherm. Experimentation and testing is suggested to avoid side effects. For maximum properties a post cure may be required – Contact our technical service department for advice.

Processing

Mix ratio by weight 1.7:1
Mix ratio by volume 1.1:1

Typical Properties

Test	Result	Unit
Hardness	80	Shore D
Operating Temperature	-40 to +100	°C (Application and geometry dependant)
Thermal Conductivity	1.3	W/mK
Tensile Strength	30-40	MPa
Coefficient of Linear Expansion	50-60	ppm/°C
Water Absorption (7 days @ 23°C)	0.09	%

Chemical Resistance

7 day, room temperature cure (30 day immersion) @ 25°C

Kerosene	Very Good	Methanol	Unsatisfactory
Hydrochloric 10%	Very Good	Toluene	Very Good
Chlorinated Solvent	Unsatisfactory	Ammonia	Very Good
Sulphuric Acid 10%	Very Good	Sodium Hydroxide 10%	Very Good

Epoxies are very good in water, saturated salt solution, Leaded gasoline, mineral spirits, ASTM #3 oil, and propylene glycol.
Epoxies are generally not recommended for long-term exposure to concentrated acids and organic solvents.

Application Information

1. All surfaces must be dry, clean and rough
2. If surface is oily or greasy, degrease the surface with a suitable solvent.
3. Remove all paint, rust and grime from the surface by abrasive blasting or other mechanical techniques.
4. Aluminium repairs: Oxidation of aluminium surfaces will reduce the adhesion of an epoxy to a surface.
   This film must be removed before repairing the surface, by mechanical means such as grit-blasting or chemical means.
5. Provide a 'profile' on the metal by roughening the surface. This should be done ideally by grit blasting (8-40 mesh grit), or by grinding with a course wheel or abrasive disc pad. An abrasive disc may be used provided white metal is revealed. Do not 'feather-edge' epoxy materials.
6. Epoxy material must be 'locked' in by defined edges and a good 3-5mil profile.
7. Metal that has been handling seawater or other salt solutions should be grit-blasted and high water pressure blasted and left overnight to allow any salts in the metal to 'sweat' to the surface.

   Repeat blasting may be required to 'sweat-out' all the soluble salts. A test for chloride contamination should be performed prior to any epoxy application. The maximum soluble salts left on the substrate should be no more than 40ppm.
8. Solvent cleaning should follow all abrasive preparation.
   This will help to remove all traces of sandblasting, grit, oil, grease, dust or other foreign substances.
9. Under cold working conditions, heating the repair area to 38-43°C immediately before applying PX800LM is recommended. This procedure dries off any moisture, contamination or solvents and assists the epoxy in achieving maximum adhesion to the substrate.
10. Always try to make the repair as soon as possible after cleaning the substrate, to avoid oxidation or flash rusting.

Application

For best results, PX800LM should be kept and applied at room temperature.
PX800LM can be applied when temperatures are between 13-52°C.
Spread the putty over the prepared surface with a putty knife.
Press firmly to ensure maximum surface contact and avoid trapping air.
To bridge large gaps or holes use fibreglass, expanded metal or other mechanical fasteners.

Curing

A 12.7mm thick section of PX800LM will harden at 20°C in 1 hour.
The material will be fully cured in 16 hours at which time the material can be machined, drilled or painted.

Approvals	
RoHS compliant	Yes
UL94-V0	No
REACH (SVHC concentration)	0%

Packaging

Available in Twin Cartridges

Availability

Available through distribution and www.resins-online.com

Cartridges – Part Numbers	
Available on request	

It is essential for best results that the cartridge is 'balanced' before use to ensure correct mixing.
Loading the cartridge into the gun before attaching the mixer element and pumping the gun to push a small amount of the contents forward will achieve this. Wipe the excess from the cartridge tip and add the static mixer. The cartridge is now ready for use.

Twinpacks – Part Numbers	
Available on request	

Twinpacks are pre-weighed resin and hardener components contained in a tough flexible film, separated by a removable clip and rail.
Once the clip and rail is removed the resin and hardener is thoroughly mixed within the bag and is immediately ready for use.
Mixing will normally take ~ 2 minutes due to the viscosity; but pay special attention to the corners.
Twinpacks are ideal for small to medium production runs, prototyping and on-site or field use.
The twinpack weight/volume may also be tailored to a specific size on request.
For further details please visit www.robnor.co.uk

Bulk Materials – Part Numbers	
Available on request	

Both resin and hardener are supplied in 5kg, 25kg and 200ltr drums and fully evacuated and ready for use.
Care should be taken to ensure when mixing the resins air is not entrained in the mixture.
If this is unavoidable the mixed resin and hardener should be re-evacuated before dispensing.
The bulk resin and hardener materials can be dispensed from suitable dispensing machinery and Robnor Resins produce a range of these machines, details that can be provided on request.

Kits and Sets – Part Numbers	
PX800LM/GY/500KIT	

Kits and Sets are provided in separate containers to the correct ratio.
In Kit form, pour the hardener into the larger resin container and use it as a mixing vessel.
Stir well using an appropriate mixer until homogeneous.

Note: Incomplete mixing will be characterised by erratic or partially incomplete cure even after extended time periods.

Cleaning

All equipment contaminated with mixed material should be cleaned before the material has hardened.
TS130 is a suitable non-flammable cleaning agent, although other solvents may be found suitable.
TS130 will also remove cured material provided it is allowed to soak for a number of hours.

Storage and Shelf Life

Material stored in the original unopened containers under cool dry condition between 15° and 25°C will have a shelf life of at least two years. Once used the containers must be kept sealed to prevent effects from water, air or contaminants.

Health and Safety

Epoxy resin systems may cause sensitisation by skin contact or inhalation may be corrosive, harmful or toxic.
It is therefore strongly recommended that skin and eye contact is avoided by the using of appropriate personal protective equipment such as gloves, safety glasses or goggles and overalls.
Wash any contamination from the skin immediately and thoroughly and do not eat, smoke or drink in the working vicinity.
Under normal working conditions a good source of ventilation is adequate, however if the material is heated, or where vapour levels are likely to exceed the occupational exposure limits appropriate respiratory protection must be worn.
Local exhaust ventilation (LEV) may be required especially for curing ovens or where large volumes of material are curing.
The above is given as a guide only; please refer to RX/HX800LM Health and Safety data or our Technical Service Department for individual/specific advice.

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