LANXESS

Urethane Systems

WRM® 80 T KIT
Trowelling Repair Kit

Description

WRM® 80T is a three part ambient temperature curing polyurethane kit. When the component parts are mixed, a thixotropic paste is formed. The mixed material may then be applied immediately to a variety of surfaces in thicknesses from 1mm to 15mm. The thixotropic properties allow thick coatings to be applied to vertical surfaces or the underside of horizontal surfaces without slumping or falling off. The mixture can be worked with ease using trowels or other suitable tools.

WRM® 80T is used for repair and rehabilitation work on worn equipment and for providing wear resistant coatings on new equipment. It may be used in places of restricted accessibility. The material has a working life of 30 to 40 minutes at ambient temperature which enables large jobs to be undertaken without the risk of the mixed material setting before the operator has finished the work. The cured coating has a hardness of 80 Shore A.

Properties	Part A resin	Part B curing agent	Part C additive
Colour	Yellow liquid	Beige paste	Colourless liquid
Solids %	100	100	100
Flash Point °C	>250	>170	>200
TLV (C)	0.02	Not volatile	Not volatile

Before mixing

Part B is paste – like in consistency and will not solidify. Before removing any of the Part B or adding it to the Part A stir the Part B to ensure a homogenous mixture.

Part A will become solid with a waxlike appearance at temperatures below 23 °C. The material must be returned to a liquid state before mixing. The can with its lid still closed tightly may be placed in an oven, heated enclosure or hot water at a temperature between 60 °C and 70 °C for sufficient time to liquefy the Part A resin. The time normally required is 1 – 1.5 hours for a 4kg kit.

The can or its lid may bulge slightly due to expansion of nitrogen used to exclude moisture. Care should be taken when prising the lid loose to prevent it flying off. In hot climates with temperatures in excess of 30 °C it is possible to melt the contents by standing the cans in direct sunlight. The cans of Part A resin must NEVER be heated with a direct flame or on an electric hot plate.

AFTER PART A HAS BEEN COMPLETELY MELTED THE CLOSED CAN SHOULD BE ALLOWED TO COOL TO AMBIENT TEMPERATURE BEFORE MIXING WITH PART B CURING AGENT.

If the melted Part A resin is not used and solidifies again, the reheating process should not be repeated more than two to three times. Prolonged or repeated heating of the Part A Resin will cause degradation and may produce low strength or soft volcanizates with poor performance.

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Mixing

Mixing is simplified if the rim of the Part A can is removed. Hand mixing is satisfactory for 1kg kits. The 4kg kit should be mixed with a power mixer. For hand mixing, use a steel spatula, long enough to reach the bottom of the can. For power mixing, use a small Jiffy mixer driven by an electric or air drill.

Scrape the whole of the contents of the Part B can into the Part A can and mix thoroughly. The sides and bottom of the can must be scraped closely with a spatula. Failure to do this will result in sticky soft spots in the finished coating. This procedure must be adopted whether hand or power mixing. The Jiffy mixer blade on its own will not remove resin from the can sides. Mixing time by hand should take no more than 3 minutes, power mixing should be faster.

The mix will now be a viscous liquid. Add Part C additive from the plastic bottle supplied and mix thoroughly, again scraping sides and bottom of can. Extra care should be taken to ensure even dispersion of the Part C throughout the mix as the amount used is relatively small compared to the overall mixture. The mix thickens on the addition of Part C.

NB: THIS VISCOUS LIQUID PRODUCED WHEN PARTS A & B ARE MIXED TOGETHER MAY BE USED FOR SIMPLE CASTING JOBS. DO NOT ADD PART C IF A POURABLE CONSISTENCY IS REQUIRED

Application

The surface to which **WRM® 80T** is applied should be prepared and primed with WRM Primer Multi as detailed in the WRM Primer Multi datasheet.

WRM® 80T is applied by methods to cement rendering and similar tools are recommended. Steel floats, spatulas paint scrapers, pointed trowels, polyethylene templates and screeds are typical of the equipment required according to the type of work to be undertaken. To spread a layer of material on a surface to a controlled thickness it is useful to construct a screed or straight edge with two protruding lugs equal to the thickness required.

WRM® 80T is doctored or squeegeed by placing a mass of it in front of the screed and dragging it forward, so depositing the required thickness as it passes under the screed. The grooves left by the lugs may be filled in later after some curing has taken place.

Curved surfaces, both convex and concave may be similarly coated by cutting appropriately shaped templates. In this way worn components, either metal or rubber may be repaired and their original profile restored. The diagram illustrates this technique.

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Curing

WRM® 80T will remain tacky for about 2 hours after placement. It will set to an elastic solid after 2 hours but will not have strength. It will have slight surface tack which will disappear in another 2 hours The material will cure in 24 hours and may be put into service. However, a full 7 days are needed for it to reach optimum physical properties.

If the cure has to be shortened, the use of hot air blowers or heated enclosures at temperatures from 60°C - 100°C may be used. The cure may be reduced to 3 hours if 90oC can be obtained.

After 2 hours, no damage will be done if the curing material is contaminated with water.

Shrinkage

Shrinkage at 30°C is 1% and 1.8% at 90 ºC.

Safety in handling

WRM® 80T does not have a flash point below 170 °C. However, the solvents used for degreasing the work pieces or for smoothing the trowelled coating may be inflammable.

Precautions should be taken when inflammable solvents are in use. Operators should not smoke whilst working with **WRM® 80T** or associated solvents.Concentrations of inflammable vapour should be kept within safety limits by the use of explosion proof exhaust fans or by working in the open.

All welding, grinding and wire brushing should be segregated from the work area if inflammable solvents are in use.

Safety spectacles or goggles should be worn when mixing the components to protect the eyes from chance splashes. An emergency eye wash bottle filled with sterile eye irrigating solution should be close at hand.

Part A Resin contains less than 0.5% free isocyanate and will give off vapour which may be found by some operators to be irritating. Adequate ventilation in the work area will dilute the levels of isocyanate vapour to less than the TLV (C) value of 0.02 p.p.m. Volatility of the isocyanate is lower at ambient temperature so the amount that may cause irritation is minimised. Respirators should be worn if prolonged work is being undertaken. Cartridges such as Protector RC56, RC69 or RD75 changed at correct intervals will remove any irritating vapour.

After the Part A reacts with the Part B, the small amount of isocyanate present will be consumed in the reaction.

Part B Curing Agent should not be allowed to come in contact with the skin or eyes.

Clean-up

Uncured trowellable may be removed from tools by washing with MEK.

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Shelf life

Polyurethane in its unreacted state must be protected from water and water vapour. Unreacted Part A Resin reacts very rapidly with atmospheric moisture and will from a fully cured hard skin on its top surface in 48 hours in climates with relative humidifies of 50% or greater. All cans prior to delivery are flushed with nitrogen to exclude moisture and only dry ingredients are used in manufacture.

The material will withstand transport through hot climates at 45 °C but WRM kits should be stored on receipt in a cool place. For large users who maintain significant stock holdings the material is best stored in an air conditioned space at 20 °C.

Providing the cans are intact, the shelf life of Part A, Part B and Part C stored under moderate and steady room temperatures will be 12 months.

Mix ratio

If less than a kit is used, the ratio of Part A:Part B:Part C is 100:23:2.4 by weight. Rough estimates will not provide satisfactory end products, the portions must be weighed accurately. Calculations should be checked when scaling amounts that depart from packed kit sizes.

The Part A can has sufficient room to accommodate all of the Part B and provide sufficient freeboard for mixing. Empty cans should be disposed of in a safe manner.

Coverage

1kg of **WRM® 80T** will cover 0.9m2 at 1mm thickness.

Pack size

WRM® 80T is a three component kit supplied in 1kg and 4kg sizes. The weights of the individual components are shown on the label together with other relevant information.

Note: **WRM® 80T** kits do not contain 4,4 ' –Methylenebis (2-chloroaniline) MOCA, MBCA.

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Unless specified to the contrary, the values given have been established on standardized test specimens at room temperature. The figures should be regarded as guide values only and not as binding minimum values. Kindly note that the results refer exclusively to the specimens tested. Under certain conditions, the test results established can be affected to a considerable extent by the processing conditions and manufacturing process.

LANXESS Deutschland GmbH
Business Unit Urethane Systems
Kennedyplatz 1
50569 Cologne
Germany

Customers in the USA are kindly requested to refer to:
LANXESS Corporation
Business Unit Urethane Systems
2 Armstrong Road
Shelton, CT 06484
USA

Customers in APAC are kindly requested to refer to:
LANXESS Chemical (China) Co,. Ltd.
6F, 5 Corporate Avenue, No. 150
Hubin Road, Huangpu District
Shanghai, 200021, P.R.
China