

TECHNICAL DATA

Acid Resistant Epoxy Binder

Epirez[®] 133AR

Acid Resistant Epoxy Binder (133AR) has been specially formulated for combination with selected aggregates to produce a trowel applied epoxy composite for application to concrete where a chemically resistant surface is required.

Acid Resistant Epoxy Binder (133AR) Mortars resists a wide range of acids, including concentrated sulphuric acid, as well as alkalis and solvents.

Acid Resistant Epoxy Binder (133AR) should be blended with suitable aggregates in varying proportions depending on the application and service conditions. For flooring applications, a mortar screed composed of one volume **Acid Resistant Epoxy Binder (133AR)** to three volumes **Epirez[®] Epoxy Mortar Aggregate Extender (QA3)** is recommended.

Areas of Application

- Food industries
- Mining industries
- Plating shops
- High acid resistant floors
- Chemical industries
- Waste water treatment
- Battery manufacturers
- Bund and pit linings
- Bleaching areas
- Paper manufacturers
- Pharmaceutical industries
- Chemical containment

Features

- Monolithic protection
- Foot traffic in 24 hours
- Broad chemical resistance
- Excellent mechanical properties
- Solvent free
- Resists 98% sulphuric acid

The information contained in this Technical Bulletin is as up to date and correct as possible as at the time of issue. The data provided should be used as a guide only as the performance of the product will vary depending on differing operating conditions and application methods.

The sale of any product described in this Technical Bulletin will be in accordance with ITW Polymers & Fluids Conditions Of Sale, a copy of which is available on request. To the extent permitted by law, ITW Polymers & Fluids excludes all other warranties in relation to this product.

General Properties

*(Based on 1 volume Acid Resistant Epoxy Binder (133AR) to 3 volumes Epoxy Mortar Aggregate Extender (QA3))

Shelf Life	: 2 Years
Mixing Proportions (by volume only)	: 1 Hardener to 3 Compound
Solids Content	: 100%
Application Temperatures	: 10°C - 30°C
Work Time	: 30 minutes at 25°C
Cure Time	: 24 hours at 25°C
Mixed Viscosity	: 0.7 Pa s
Full Chemical Resistance	: 7 days at 25°C
Weather Resistance	: Excellent
Abrasion Resistance	: Excellent (withstands steel wheels)
Maximum Operating Temperature	: 65°C
Flexural Strength	: > 10 MPa
Compressive Strength	: 65 MPa
Tensile Strength	: > 10 MPa
Tensile Bond Strength	: 2.7 MPa (concrete failure)
Water Permeability	: 1.2×10^{-16} m/s
Resistance to Chlorides	: Excellent

Chemical Resistance

Acid Resistant Epoxy Binder (133AR) / Epoxy Mortar Aggregate Extender (QA3) mortars, when fully cured are resistant to the splashes and spills of many chemicals, e.g.

Acids:	• sulphuric acid	98%	Alkalies:	• caustic soda	20%
	• sulphuric acid	30%		• ammonia solution	10%
	• hydrochloric acid	32%	Solvents:	• alcohol	
	• nitric acid	20%		• methylethylketone	
	• acetic acid	10%		• trichloroethylene	
	• lactic acid	5%		• ethyl acetate	
	• phosphoric acid	20%		• hexane	

Surface staining may result from exposure to some aggressive chemicals. Good housekeeping practice requires that spills are quickly removed and washed away.

Estimating Data

1 Ltr Acid Resistant Epoxy Binder (133AR) = 1 m² at 1 mm thick

4 Ltr Acid Resistant Epoxy Binder (133AR) + 12 Ltr Epoxy Mortar Aggregate Extender (QA3) = 3 m² at 4 mm thick

Application Directions

Surface Preparation

Concrete should be at least 28 days old. Ensure surface is clean, dry and free of additives, curing agents, oils, etc. Prepare the sub-base by acid etching and washing or captive blast cleaning as applicable to expose firmly adhered aggregate. Allow to dry if wet.

Surface preparation guidelines cannot cover all site or field contingencies and it is always recommended that an on-the-spot adhesion test be performed as part of the Standard Quality Assurance audit for the project.

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Priming

Prime concrete surfaces using **Acid Resistant Epoxy Binder (133AR)** only, at a coverage rate of 5m²/litre. Primer should be "touch-dry" before proceeding. The **Acid Resistant Epoxy Binder (133AR)** mortar should be applied within 24 hours of priming. If this time is exceeded the sub-base must be reprimed. Keep primed surfaces clean.

Mixing and Application

Prior to mixing, the area should be reviewed so that a fixed volume of mixed material can be applied over a fixed area to ensure correct application rate.

Measure sufficient Hardener and Compound to be used in 30 minutes. Mix thoroughly using a low speed (400 rpm) power mixer. Ensure that all the material on the sides and on the stirrer are incorporated. Take care to avoid air entrapment in the mix.

Transfer contents to a suitable mixing pail and add **Epirez[®] Epoxy Mortar Aggregate Extender (QA3)**, while mixing, until a uniform consistency is obtained. Use table below to determine mix design. Pour out the mixed mortar onto the known subfloor area and apply by trowel. Wipe the trowel occasionally, but sparingly with **Epirez[®] Epoxy Thinner (No.3)** to assist final trowelling. Ensure a "tight" surface finish to minimise porosity. **Minimum thickness required is 4mm.**

Recommended Acid Resistant Epoxy Binder (133AR) / Aggregate Mixes

Characteristics	Binder / Aggregate Ratio by Volume	Litres Binder per m ³	Litres Aggregate per m ³	Mortar Aggregate Type	Compressive Strength MPa
Horizontal repair mortar	1:3	333	1000	Extender	65
Vertical repair mortar	1:4	250	1000	Patching & Flooring	60

Curing

For optimum chemical resistance **Acid Resistant Epoxy Binder (133AR)** mortars should be cured for seven days at 25°C. Longer curing times should be allowed at lower temperatures.

Cleaning

Tools and equipment may be cleaned before hardening commences by washing in **Epirez[®] Clean Up Solvent**. Do not use for cleaning hands or mixing with product

Limitations

Acid Resistant Epoxy Binder (133AR) should not be applied at temperatures below 10°C.

Note

The figures quoted for work time, cure time and coverage are not definitive. They are dependent on job site conditions and will vary accordingly. In all cases we endeavour to provide typical figures for use as a guide.

Storage and Shelf Life

Store in dry conditions between 10°C and 30°C, away from sources of heat and naked flames. Protect from frost. When stored in original sealed containers, the minimum shelf life is two years.

Packaging

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Acid Resistant Epoxy Binder (133AR) is available in 4 and 20 litre packs. Each pack contains Hardener and Compound in correct proportions for use.

Ordering information:

4 litre #E901345
20 litre #E901344

Health & Safety Information

The product is hazardous. A Material Safety Data Sheet is available from the ITW Polymers & Fluids Technical Department upon request or available on our website www.epirez.com.au.

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