



Chem Coats (Pvt) Ltd.

ChemCoat AR 217

High Chemical Resistant Resin System

DESCRIPTION

ChemCoat AR 217 is a two-component, solvent-free novolac modified epoxy.

USES

ChemCoat AR 217 clear resin system is used for sealing, laminating, screeding and grouting applications. Not suitable for use on galvanised or other zinc coated surfaces.

FEATURES & BENEFITS

High chemical resistance not possible with standard epoxies.
 May be used as a laminating resin.
 For high chemical resistance screeding.
 For chemical tile grouting.
 For sealing porous elements such as concrete and wood.

SURFACE PREPARATION

All surfaces must be clean, sound and dry. Moisture content tests must be conducted prior to application of the priming system. Maximum moisture content should be between 4-5%. (eg Protimeter Survey Master or equivalent) or Dynamic Calcium Chloride moisture "weight gain" over 24 hours or (a practical overnight "plastic sheet test" is also advisable approx. 1m² masked down on surface).

BONDING / PRIMING

ChemCoat 384 for metal surfaces.

MIXING

Add the entire contents of the activator tin to the base and, without splashing, stir with a flat paddle until homogeneous. This takes at least five minutes.
 Beware high summer temperature and over fast drill mixing causing extremely fast curing. Very low winter temperature retards/stops curing.



PROPERTIES OF WET MATERIAL	
Density	1.16g/cm ³
Flash point	+120° C
Storage coverage	Store under cover in cool conditions
Dilution	Do not dilute

PROPERTIES DURING APPLICATION	
Application by	Brush or mohair roller for unfilled systems.
Application temperature range	+ 10° C to + 40°C
Work life	Approximately 50 minutes @ 25° C
Volume solids	> 95%
Curing time @ 25° C	Touch dry – 4 hrs Practical cure – 24 hrs Full cure – 7 days

Unfilled system	
Max wft	Approximately 75µm on a non-porous surface
Theoretical coverage for above dft	Coverage on concrete varies according to porosity
Spread rate	A practical spread rate would be approximately 6m ² / per coat
Recommended number of coats	2 minimum and 3 for adverse conditions.
Film build	Where film build is required a non-woven chemical resistant mat or tissue is generally used (e.g. a 25 gsm mass results in resin uptake of approximately 250 ml/m ²)

Filled system	
Typical film thickness	6 – 10mm
Spread rate film thickness	1 l / m ² yields 1 mm

CHEMICAL PROPERTIES OF DRY FILM	
See last 3 pages of this data sheet.	

PROPERTIES OF CURED MATERIAL	
Maximum service temperature	Chemical resistance best at ambient and dramatically reduced at higher temperatures (see charts on next pages)
Shrinkage during cure	Negligible

COVERAGE

See last page of this data sheet.



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APPLICATION

For laminating and sealing applications:

Apply **ChemCoat AR 217** by brush or short fiber roller. Over coating times must be strictly adhered to. Final cure time, particularly in immersion situations, must also be adhered to. **ChemCoat AR 217** must not be applied if the ambient temperature is below 5° C. The curing reaction will not proceed at low temperatures.

For screeding and grouting applications:

Premix the aggregate to obtain even distribution of the various fractions. When using a mechanical mixer, place mixed liquid in the pan and slowly add the premixed aggregate, mixing until an evenly coated wetted mix results.

Use this procedure also if manual mixing is carried out in a drum. All lumps must be broken down and an even, wetted mass obtained. Apply by means of a pointing trowel to tiles, remove excess and ensure that surface is tooled to compact.

When screeding, lay using plastic trowels and screed rails of the appropriate thickness. Rails should be kept as clean as possible otherwise false thicknesses will result. Small areas should be laid at a time trowelled to a smooth surface and not touched again.

Always try to achieve a wet joint where one area abuts another. Where it is known that an edge is going to form an overnight joint, this should be trowelled to give a feather edge over at least a 50mm width. Prime this feather edge before laying adjacent material.

CLEANING

ChemCoat Super Brush Cleaner before dried/cured.

PROTECTION ON COMPLETION

Protect against traffic and spillage until cured. Most epoxies chalk and degrade in extensive sunlight.

MODEL SPECIFICATION

Two-component, solvent free high chemical resistant clear resin system.

The system will be **ChemCoat AR 217**, solvent-free, high chemical resistant, clear resin applied in accordance with **Chem Coats Construction Chemicals'** recommendations including necessary fillers as directed.

PACKAGING

ChemCoat AR 217 is supplied in 5 litre kits.

HANDLING & STORAGE

All **ChemCoat AR 217** related products have a shelf life of 12 months if kept in a dry, cool store in the original, unopened packs.

If stored at high temperatures and/or high humidity conditions, the shelf life may be reduced.

HEALTH & SAFETY

Wet **ChemCoat AR 217** is toxic. Ensure the working area is well ventilated during application and curing. Avoid inhalation of dust and contact with skin and eyes. Suitable protective clothing, gloves, eye protection and respiratory protective equipment should be worn. The use of barrier creams provides additional skin protection. If contact with skin occurs, wash with water and soap. Splashes into eyes should be washed immediately with plenty of clean water and medical advice sought.

Cured **ChemCoat AR 217** is inert and nontoxic but must not be allowed to come into contact with foodstuff or drinking water.

IMPORTANT NOTE

The information given in this data sheet is based on current development work and many years of field experience. Whilst every effort is made to ensure that the information is reliable, we cannot accept responsibility for any work carried out with our materials as we have no controls over methods of applications, site conditions etc. In view of the continuing research and development being undertaken in our laboratories we advise customers in their own interest to ensure that this data sheet has not been superseded by a more up-to-date publication. All products are sold subject to our standard conditions of sale which are available on request. Field services, where provided, does not constitute supervisory responsibility. For additional information, please contact your local **Chem Coat's** representative.

RANGE OF PRODUCTS

<u>WATERPROOFING SYSTEMS</u> <u>INDUSTRIAL FLOOR SURFACES</u> <u>PROTECTIVE COATINGS</u>	<u>PREPACKED REPAIR MORTARS</u> <u>CEMENTITIOUS & EPOXY GROUTS</u> <u>CONCRETE ADMIXTURES</u>	<u>SEALANTS</u> <u>CRACK INJECTION</u> <u>CONCRETE ADHESIVE</u>
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Chemical resistance of screeding / grout compound - ChemCoat AR 217

Chemical	Temperature	Compressive strengths / retention	Class
Reference		52 MPa / NA	NA
De-ionised water	25° C	37 MPa / 71%	R
Mineral acids			
30% HCl (Hydrochloric)	25° C	52 MPa / 100%	R
30% HCl (Hydrochloric)	98° C	47 MPa / 91%	LR
38% H ₂ SO ₄ ((Sulphuric)	25° C	51 MPa / 90%	R
38% H ₂ SO ₄ ((Sulphuric)	98° C	27 MPa / 52%	LR
70% H ₂ SO ₄ ((Sulphuric)	25° C	49 MPa / 94%	R
98% H ₂ SO ₄ ((Sulphuric)	25° C	52 MPa / 100%	R
98% H ₂ SO ₄ ((Sulphuric)	42° C	24 MPa / 47%	LR
25% H ₂ SO ₄ ((Sulphuric)	Draper Penhall Cycle	42 MPa / 82%	R
98% H ₂ SO ₄ ((Sulphuric)	(7 days @ 60° C + 7 days RT) x 2	-	NR
93% HNO (Nitric)	25° C	-	NR
93% HNO (Nitric)	42° C	-	NR
30% HNO (Nitric)	Draper Penhall Cycle	-	NR
Equal amounts of 30% HCl / 38% H ₂ SO ₄ / 93% HNO ₃	25° C	-	NR
Equal amounts of 30% HCl / 38% H ₂ SO ₄ / 93% HNO ₃	42° C	-	NR
56% H ₃ PO ₄ (Phosphoric)	25° C	47 MPa / 91%	R
56% H ₃ PO ₄ (Phosphoric)	88° C	-	NR
80% H ₃ PO ₄ (Phosphoric)	25° C	49 MPa / 94%	R
80% H ₃ PO ₄ (Phosphoric)	Draper Penhall Cycle	-	NR

KEY - * Based on Reference

R - Resistant (subject to a reasonable standard of housekeeping).

LR - Limited Resistance i.e. occasional spillage provided it is quickly washed down or rapidly evaporated. NR - Not Resistant.

The classification 'Resistant' has been given where samples have retained more than 70% of their compressive strength and have not lost or gained more than 3% of their weight when totally immersed in the environments. Experience has shown that this interpretation correlates well with practical applications. As a result the above table has been compiled as a guide to the suitability of correctly applied screeding material provided that a reasonable standard of housekeeping is maintained during service. End users should satisfy themselves that the screeding material is suitable for their particular environmental conditions and take into account the mechanical duty which may accompany any chemical spillage. It should also be noted that some environments (especially inorganic chemicals) will affect the colour of the screeding material on the surface.



Chemical resistance of screeding / grout compound – ChemCoat AR 217

Chemical	Temperature	Compressive strengths / retention	Class
Organic acids			
10% Lactic acid	--	46 MPa / 89%	R
10% Acetic acid	25° C	37 MPa / 71%	R
Solvents			
Methanol	25° C	22 MPa / 43%	LR
Ethanol	25° C	42 MPa / 80%	R
Toluol	25° C	51 MPa / 99%	R
Xylene	25° C	52 MPa / 100%	R
MEK	25° C	15 MPa / 28%	LR
1,1,1-Trichloroethane	25° C	52 MPa / 100%	R
Alkalis			
50% NaOH (Caustic)	25° C	51 MPa / 99%	R
Bleach			
10% Sodium hypochlorite	25° C	40 MPa / 77%	R

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It should also be noted that some environments (especially inorganic chemicals) will affect the colour of the screeding material on the surface.

Mixing ratios and mixing weights with appropriate yields

System	Base	Activator	Aggregate	Yield	Spread rate
Laminating	4.350 kg or 3.6 litres	1.450 kg or 1.3 litres	None – but may be used with chemical resistant non-woven mat	5 litres	13.33 m ² per litre at 75 micron wft (no loss taken into account)
Sealing	4.350 kg or 3.6 litres	1.450 kg or 1.3 litres	None – but may be used with chemical resistant non-woven mat	5 litres	13.33 m ² per litre at 75 micron wft (no loss taken into account)
Screed	3.0 kg	1 kg	3.0 kg	5 litres	1 litre per m ² yields 1 mm film thickness
Grout	3.0 kg	1 kg	3.0 kg	5 litres	1 litre per m ² yields 1 mm film thickness

Mixed 1:3 (activator: base) by volume, but proportioning by weight is best