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ARAPLEX SBR

CEMENT MORTAR MODIFIER - prev. 29Y40

DESCRIPTION:

Araplex SBR has been used extensively over the last 20 years by the building industry as an admixture for cement and concrete applications, including repair and renovation, surfacing of floors and bonding generally. Important application areas include patching, terrazzo flooring spray and fill coats, precast architectural concrete panels, stucco, industrial cement floors and highway and bridge repairs.

FEATURES/BENEFITS:

Cementitious mixes containing Araplex SBR have the following advantages:

- Greatly improved adhesion to a wide range of substrates including dense concrete, glass, steel, tiles etc.
- Mixes may be applied in much thinner sections.
- Excellent resistance to water and water vapour.
- A high level of resistance to salt permeation/carbonation.
- Much improved toughness and flexibility.
- Reduced surface dusting of concrete.
- Greatly improved resistance to many chemicals.
- Reduced water : cement ratio for equivalent workability.
- Improved frost resistance.
- Increased crack resistance.

In addition, Araplex SBR has the advantage over PVA bonding aids in that it is not adversely affected in wet condition and is therefore recommended for exterior use.

Latex content will vary subject to application, but typically it will be in the range 20-40% on cement weight (10-20 litres on 50kg cement). The higher level of addition is used for thin screeds where maximum performance is required, or for renders etc with high water resistance. Levels lower or higher than these may be needed in special circumstances.

The colour of latex modified compositions may be a little darker than that of ordinary mixes. If this is undesirable it can be overcome by the inclusion of a small quantity of white cement.

TYPICAL PROPERTIES:

Composition:	Carboxylated styrene/butadiene co polymer emulsion containing non-staining antioxidants.
Appearance:	White milky liquid
Solids Content:	46%
Specific Gravity:	1.01 kgs/litre
PH:	10
Freeze-thaw Stability:	Good
Minimum Film Forming Temperature:	10°C

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SURFACE PREPARATION:

Carry out standard concrete floor preparation to the existing concrete slab. Remove all dust, dirt, laitance (cure or release agents) and any unsound areas of materials that will impede the adhesion of the polymer modified screed. Abrade surfaces by shot/grit blasting, coarse grinding, acid etch or other suitable methods or as appropriate. Check for contaminants by wetting with water. If the water beads or does not rapidly absorb into the concrete, re-prepare as per above.

Ensure substrate is stable, solid and control/relief joints are properly designed and installed.

Priming (Concrete):

Saturate the prepared concrete with clean water (at least 1 hour prior to the application of the primer).

Squeegee off excess water and apply one full coat of primer consisting of one part by volume of Araplex SBR admixture to 2 parts cement mixed to a thin slurry. Work this slurry well into the prepared surface using a stiff bristle brush or broom. (Do not allow to dry prior to application of the Araplex SBR modified render.)

While primer is wet apply Araplex SBR modified cement screed (as required).

Where water-resistant renders are required, a different technique for priming is necessary. A second priming or sealing coat (2 parts OPC to 1 part Araplex SBR) should be brushed on as soon as the first coat is touch-dry, ie: after approximately 20-30 minutes. To ensure complete coverage these coats should be applied at right angles across each other. Maximum thickness of the sealing coats should be 1.6mm otherwise crazing may occur.

These two coats must be allowed to fully dry out for eg; at least 48 hours. A further coat of the slurry is then brushed on and the render applied while this coat is still wet, as for a standard render.

Application of Renders (Walls) and Toppings (Floors):

Renders (Walls)

The thickness of latex-modified renders should not exceed 6mm for each coat. Thicker coats can result in sagging, or in the case of soffits actual fall-off. However, several coats may be applied in fairly quick succession, allowing each coat time to set-off before the next one is applied. This is usually between 15-30 minutes.

A single trowelling technique is normally sufficient to achieve a moderately smooth finish. If a smoother surface is required, the rendering should be floated using a clean steel, or preferably, wooden float after a suitable interval has elapsed. This interval is about ½ to 1 hour, but is best found by experience.

Portland Cement	1 part by volume (uncompacted)
Moist Sand	4.5 parts by volume (uncompacted)
Araplex SBR	0.2 parts by volume (uncompacted)
Water	As required

Waterproof renders above ground over strong stable backgrounds also for carbination protection.

Portland Cement	1 part by volume (uncompacted)
Moist Sand	3 parts by volume (uncompacted)
Araplex SBR	0.28 parts by volume (uncompacted)
Water	As required

Note: Refer to priming (waterproof renders)

Toppings (Floors)

General purpose screeds based on Araplex SBR can be laid to any thickness, down to a feather edge if necessary, providing that a sufficiently fine grade of sand or aggregate is used. Heavy duty flooring compositions are normally laid as 12mm or greater thickness toppings.

Because Araplex SBR allows "feather-edging" of suitable mortar compositions, it is therefore possible to patch up only the damaged portions of existing concrete floors. These portions must of course be prepared and primed as previously described.

Note: Feathered edges are more vulnerable to damage in industrial/heavy duty applications i.e. wheeled traffic and are not recommended in these situations.

After mixing, the Araplex mortar should be poured over the still wet priming coat, and screed to achieve required surface finish tolerances. It may then be trowelled to the required finish. An experienced floor layer will readily achieve a finish of satisfactory smoothness without having to do any further trowelling. However, as an alternative procedure, it is possible with care to carry further trowelling after a suitable interval, when initial stiffening of the mortar has commenced. A clean steel trowel is recommended for this operation. With a little experience, the correct timing at which this re- trowelling should be carried out will be properly judged. If sufficient time has been allowed to elapse, a thin surface skin will be present over soft unset material and the skin will be torn giving surface cracking. Too great a time interval on the other hand would result in the mortar having set too much to be smoothed. The whole surface should be trowelled, not just sections of it, to avoid variations in shade, texture, etc.

Cure Times

Although Araplex SBR improves adhesion and flexural strength, the cure time of mixes using Araplex SBR remain the same as normal concrete.

Light Traffic: 48 hours
 Medium Traffic 7 days
 Full Strength: 28 days

STEEL PROTECTION:

	Weight	Ratio
Portland Cement	50kg	1
Sand	125kg	2.5
Araplex SBR	15kg	0.3
Water	As required	
Yield	Approx 0.1m ³	

Remove loose rust and scale from steel surface. Prime the steel and allow to dry. Damp surrounding masonry and apply full coat of primer to both masonry and steel. Whilst still wet apply the above mix.

N.B. Cement containing calcium chloride must not be used over bare steel.

THIN SECTION MORTARS FOR REPAIRING CONCRETE:

	Weight	Ratio
Portland Cement	50kg	1
Sand	125kg	2.5
Araplex SBR	15kg	0.3
Water	As required	
Yield	Approx 0.1m ³	

Damp and prime surface (unnecessary when repointing).

AIR ENTRAINMENT:

Latex modified mortars tend to entrain higher levels of air than unmodified mortars. To achieve optimum performances from the modified mortar it is therefore important that care is taken at the mixing stage to minimise this effect.

Araplex SBR contains an antifoam which under most circumstances will give the required detraining properties, but it may be necessary for critical applications to make a further on-site addition of a suitable antifoam. 0.25-0.5 on Araplex SBR are suggested.

Optimal entrained air is approximately 4%.

CURING CONDITIONS:

Generally, unmodified mortars develop maximum strength properties when cured wet. With Araplex SBR modified mortars however it is necessary for the mortar to dry out at some stage to allow the latex particles to coalesce and so form an interpenetrating lattice of polymer. Subsequent immersion will not redisperse the polymer. Where possible it is recommended that cure comprises an initial wet cure, eg: 24 hours, followed by dry cure.

CLEANING OF EQUIPMENT:

All tools should be cleaned immediately after use because hardened Araplex-modified mortars and concretes have excellent adhesion and are therefore difficult to remove. Solvents such as white spirit, solvent naphtha or preferably toluene can be useful in removing hardened mortar.

STORAGE:

Araplex SBR is best stored at moderate temperatures to avoid the possibility of permanent damage occurring due to prolonged heat or excessive cold. However if frozen, the latex should be thawed slowly. Araplex SBR should preferably be stirred before use.

SHELF LIFE:

24 months in unopened containers.