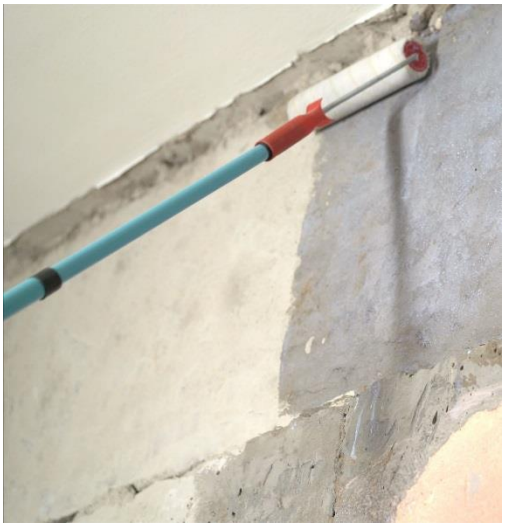
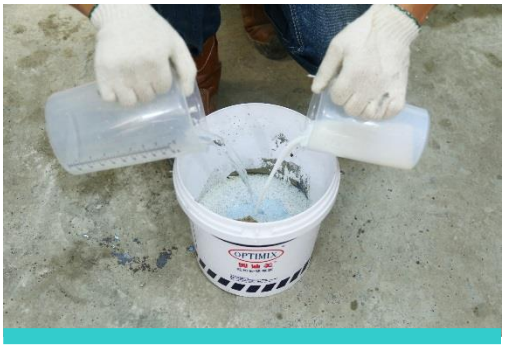


PE
POLYMER EMULSION
A BONDING PRIMER FOR CONCRETE AND MORTARS

PRODUCT DESCRIPTION

OPTIMIX PE POLYMER EMULSION is a milky white Styrene Butadiene co-polymer dispersion. It can act as a bonding primer for concrete and mortars. It can also be used as a slurry coating for steel reinforcement protection in concrete repair applications. It is compatible with Ordinary Portland Cement, concrete, and mortar substrates.





TYPICAL USAGE

- Undiluted emulsion as a ready-to-use bonding primer
- Mixed with cement to form slurry primer
- For use with all **OPTIMIX Repair Mortar** products as bonding primer
- Used as an additive to improve properties of simple cementitious mortar

FEATURES AND BENEFITS

- Excellent adhesion characteristic
- Improved compressive strength
- Improved flexural strength
- Improved tensile strength
- Reduced shrinkage and cracking
- Enhanced water resistance
- Good workability
- Can be used in contact with water



TECHNICAL DATA

Product Characteristics	*OPTIMIX PE*
Co-polymer type	Styrene Butadiene Rubber
Supplied State	Aqueous Solution
Colour	White
Specific Gravity (20°C)	1.02
Solids Content	~ 47 %
Toxicity	Non-toxic
Packaging (per pail)	20 or 200 kg
Shelf Life (5 - 40°C)	12 months in a sealed container



Prescribed Mix Proportions[1]			
	Slurry Primer	**Render / Screed / Mortar**	**High Strength Floor Screed**
Cement[2]	1.5 - 3.0 L	50 kg	50 kg
Sand[3]	--	125 kg	125 kg
10mm Agg[4].	--	--	100 kg
PE	1 L	9 L	9 L
Water	--	9 L	7 L
Mix Weight	2.5 ~ 4.0 L	193 kg	291 kg

Yield And Coverage			
	Slurry Primer	**Render / Screed / Mortar**	**High Strength Floor Screed**
Mix Density (kg/m^3)	1,650 - 1,950	~ 2,000	~ 2,250
Prescribed Mix Yield	$6m^2$ - $8m^2$ @0.25mm thick	~ $9.5m^2$ @10mm thick	~ $13m^2$ @10mm thick
Coverage per Litre of ***PE***	$6m^2$ - $8m^2$ @0.25mm thick	~ $1.0m^2$ @10mm thick	~ $0.7m^2$ @10mm thick

Notes:

1. *The ideal mixing proportions and resulting performance are highly dependent on the quality of cement, sand grading, aggregate properties, moisture content, and site/environmental conditions. Site trials are recommended.*
2. *Most good quality Portland cements complying with BS EN 197-1 are suitable; 52.5 & 42.5 are recommended.*
3. *Most good quality manufactured sand (M-sand), ground, or clean river sands are acceptable. All-in, silt/clay-rich, contaminated, or marine sands should not be used.*
4. *Most good quality clean, sound, hard 10 mm aggregates are suitable. High-strength angular crushed granite is preferred.*

Test results are based on laboratory conditions; actual site results may vary. Yield and coverage are approximate and do not allow for wastage, substrate variations, or application losses.



Performance			
	Slurry Primer	**Render / Screed / Mortar**	**High Strength Floor Screed**
Compressive (MPa)	--	≥ 40	≥ 45
Tensile (MPa)	--	≥ 4	≥ 4.5
Flexural (MPa)	--	≥ 8	≥ 9
Bond (MPa)	≥ 2	≥ 1	≥ 1
ISAT @ 120min ($ml/m^2 \cdot s$)	--	< 0.01	--

Note: The ideal mixing proportions and resulting test data are highly depending on the quality of cement, sand grading, moisture and environments. Test results are based on laboratory analysis, site results may vary.

Environmental Data	
Volatile Organic Compounds (VOC) for Multi-Purpose Construction Adhesives	< 70 g/L
Potential BEAM points	Product is manufactured within 800km of Hong Kong project sites

INSTALLATION GUIDE

(Refer to Method Statement for more details)

SURFACE PREPARATION

Substrate must be clean and free from loose particles, oil, grease and other contaminants.

Concrete substrate should be wetted with potable water to a damp or saturated surface dry condition.

MIXING AND APPLICATION

Slurry Primer

Mechanical mixing with a slow speed drill fitted with a suitable spiral paddle is recommended to blend cementitious slurry bonding primer.

Cement powder should be slowly added to ***OPTIMIX PE*** in the proportions given in the table (for site estimation between roughly 1:1 and 2:1 by volume) and mixed until a lump-free homogeneous mixture is achieved.

OPTIMIX PE cementitious slurry primer should be applied on the substrate by stiff brushes. The mortars should be applied onto the primed area when the primer becomes tacky. If the primer dries out, it must be removed and fresh primer must be re-applied before applying the mortar.

Renders, Screeds and Mortars

According to the proportion table, measure or weight ***OPTIMIX PE*** and water in a correct ratio into a container followed by the solid part: cements, sand, etc.

Mechanically mix the materials with a suitable forced action mixer such as a pan mixer. Mix for 3-5 minutes or until a homogeneous mixture is achieved. The mixture is ready to use.

For other applications, please consult our technical representatives for the correct use of ***OPTIMIX PE***.



FINISHING AND CURING

The mixture incorporating ***OPTIMIX PE*** do not usually require any special finishing or curing, however in exceptionally dry, hot or windy conditions, normal curing systems such as membranes, water spray and wet hessian can be used.

CLEANING

Mixes incorporating ***OPTIMIX PE*** can be expected to bond very strongly to most construction materials so any excess should be removed with a wet cloth as soon as practicable.

LIMITATIONS

OPTIMIX PE has high performance and is extremely versatile as an admixture for site batched mortars, however such mixes are liable to variations in materials, measurement and mixing on site. For ultimate results contact Optimix and select a specialized pre-packed mortar, render, screed or adhesive from our extensive range.

HEALTH AND SAFETY

OPTIMIX PE is non-toxic, but can cause irritations to persons with sensitive skin. During use, avoid contact with skin and eyes. Wear suitable protective gloves and masks while handling the product. In case of contact with skin, wash with clean water. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. This product is not flammable.

STORAGE

Store in closed containers, in a dry place and protect from direct sunlight. Do not store at a storage temperature below 5°C. Failure to comply with the recommended storage conditions may result in premature deterioration of the product.

ALTERNATIVE PRODUCTS

- ***PROCRETE***
- ***EVA*** Emulsion
- ***SF80*** Primer
- ***Bondpro Powder***



Important Note: The information contained herein is, the best of our knowledge, true and reliable and is supported by the present state of our knowledge. No warranty is given or implied in connection with any recommendations or suggestions made by us or our representatives as the conditions of use and any labour involved are beyond our control.

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