HOP YUEN BUILDING MATERIALS LTD.

POLYBOND

Description

POLYBOND is an SBR (Styrene Butadiene Rubber) admixture designed to be mixed in various proportions with cement and sand to provide an economical and effective render and screed systems with water resistant properties.

Advantages

POLYBOND has been designed as a polymer modification for cement and concrete applications including repair, flooring, rendering, bonding and tile adhesives.

Cementitious mixes containing POLYBOND have the following advantages:

- Increased adhesion to a wide range of substrates including concrete, glass, steel.
- Excellent resistance to water.
- Improved resistance to a wide range of chemicals.
- Improved toughness, durability and abrasion resistance.
- Improved frost resistance.
- Reduced shrinkage.
- Reduced surface dusting
- Economical.

Specification

Type	:	Carboxylated Styrene Butadiene Copolymer
Colour	:	White
Total Solids, %	:	47% ± 1%
pH	:	9.5 ± 0.5
Viscosity, mPa.s	:	30 – 150

Typical Properties

Specific Gravity @25^{o}C	:	1.01 kg/l
MFFT, ^{o}C	:	1
Freeze Thaw Stability	:	Good
Particle Size, nm	:	170
Butadiene Content, %	:	38
Shelf Lift	:	1 year when unopened
Packaging	:	20 kg pail and 200 kg drum
Approvals	:	Hong Kong Housing Authority Specification TM1 – TM8. Class 40.

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TYPICAL CHARACTERISTICS OF SYNTHOMER BOND

	REINFORCEMENT PRIMER	SLURRY BONDCOAT	SITE MIXED MORTAR
PARTS BY WEIGHT			
Cement (BS12)	50 kg	50 kg	50 kg
Sand (Zone 2)	-	-	125 kg
Water (Potable)	-	-	10 kg/L
POLYBOND	20 kg/L	20 kg/L	9 kg/L
DENSITY	1,900 kg/M^3	1,900 kgM^3	2,200 kg/M^3
YIELD	0.06 M^3	0.06 M^3	0.1 M^3
COLOUR OF MIX	BLUE GREY	BLUE GREY	BLUE GREY
POT LIFE (25^{o}C)	1 HR	1 HR	1 HR
DRYING TIME (25^{o}C)	20 mins	20 mins	30-45 mins
COMPRESSIVE STRENGTH (DRY)	30 N/mm^2	30 N/mm^2	52 N/mm^2
ADHESION STRENGTH (DRY)			
- 7 DAYS		1.3 N/mm^2	3 N/mm^2
- 28 DAYS		2.2 N/mm^2	5 N/mm^2
TENSILE STRENGTH (DRY) 28 DAYS	---	---	5.5 N/mm^2
FLEXURAL STRENGTH (DRY) 28 DAYS	---	10.5 N/mm^2	12.0 N/mm^2
PULL-OFF TEST 7 DAYS	---	1.4 N/mm^2	---
PREMEABILITY	Similar to quality concrete		
DIFFUSION	Of a lower rate than quality concrete		

FOR USE AS A REINFORCEMENT PRIME

SURFACE PREPARATION AND APPLICATION

Once the repair area has been identified, the reinforcing bars should be exposed by hacking back (15 - 20 mm behind bar) to a sound substrate. The bars should be cleaned by either sand blasting or using hand held grinding tools and dusted off. The reinforcement should be free from moisture dust, oil and other contaminants before priming.

MIXING

Cement should be added to POLYBOND in the ratio 2.5:1 by weight (2:1 by volume) and thoroughly mixed by hand or slow speed mixer to produce a consistent slurry. Adjust mix as necessary with either cement or POLYBOND to provide a drip free coating. Only mix enough material that can be comfortably applied with one hour.

APPLICATION

The mix should be applied to the freshly prepared surface (surface within 24 hours) in either a single coat or in two coats waiting approximately 30 - 90 minutes between coats to allow first coat to cure sufficiently.

Care must be exercised to ensure complete coverage of the exposed reinforcing bar. Subsequent repair mortars may be applied after about 90 minutes of final application.

FOR USE AS A SLURRY BONDCOAT

SURFACE PREPARATION AND APPLICATION

The concrete surface should be sound free from dust laitances, mould oil, grease etc. The prepared surface should be thoroughly soaked with water preferably the day before or wetted down for 20 minutes to achieve saturation (but no standing water).

MIXING

Cement should be added to POLYBOND in the ratio 2.5 :.1 by volume and thoroughly mixed by hand or slow speed mixer for about 3 minutes to produce a consistent thin slurry, i.e.

CEMENT	50 KG
POLYBOND	20 KG/L

APPLICATION

The slurry bondcoat should be applied by brush to the prepared surface by a vigorous stippling action to eliminate the formation of voids. Ensure 100% coverage over concrete and reinforcing bars. The subsequent repair mortar (site batched or prebagged) should be applied to the repair area whilst the slurry bondcoat is still tacky. Any areas touch dry must be recoated with slurry bondcoat.

FOR USE AS A SITE PREPARED MORTAR

SURFACE PREPARATION AND APPLICATION

Reinstatement area is to be thoroughly primed using POLYBOND SLURRY BONDCOAT and must be tacky at the time of mortar application.

MIXING

The mortar should be prepared using the following proportions:

For low chloride contamination (less than 0.4%)

- Cement (BS12)	:	50 kg
- Sand (Zone 2)	:	125 kg
- POLYBOND	:	9 kg/L
- WATER	:	10 kg/L

For high chloride contamination (greater than 0.4%)

- Cement (BS12)	:	50 kg
- Sand (Zone 2)	:	125 kg
- POLYBOND	:	14 kg/L
- WATER	:	5 kg/L

POLYBOND should be added to preblended cement/aggregate and mechanically mixed in a slow even manner to prevent air-entrainment.

APPLICATION

POLYBOND modified mortar may be trowelled into the repair area in layers of up to 20mm at a pass. Should total depths of layers be greater than this scoring must be provided between the inner layers to ensure a good mechanical key. Unshuttered depths of 80mm are achievable. Placement using shuttering may be up to 150mm. Note all reinforcement is to be covered by a minimum depth of 10mm.

PRECAUTIONS

- Avoid breathing dust during surface preparation or mixing by wearing a mask.
  Use gloves when handling dry powder.
- Always clean tools immediate after use.
- Always keep containers covered and protect from frost.

WARRANTY NOTE

Seller's and manufacturer's only obligation shall be to replace such quantity of product proved to be defective. The information regarding this material is to the best of our knowledge true and accurate, but all recommendations or suggestions are made without guarantee, since the conditions of use are beyond our control. Neither seller or manufacturer shall be liable for any injury loss or damages, direct or consequential arising from the use or the inability to use the product. Before using, user shall determine the suitability of the product for his intended use and user assumes all risk and liability.