

PERMFLEX® AM-998

A water-based, 100% acrylic modifier for cement, is specifically designed to combat the shortcoming of mortar and concrete, particularly their poor adhesion, low impact strength, low flexural strength and thin section fragility.

**CHEMICAL & CONSTRUCTION PRODUCTS
FOR BETTER LIVING**

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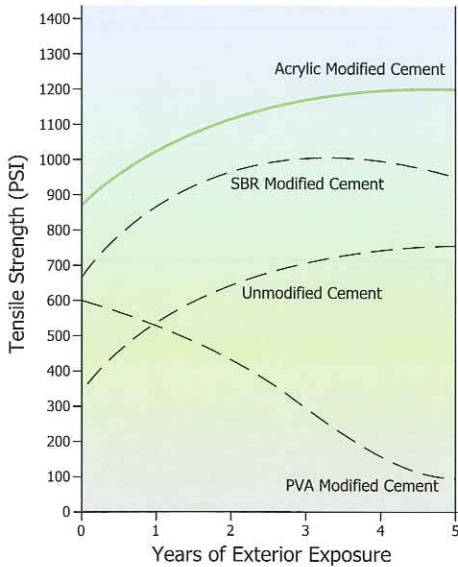
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WHY USING ACRYLIC POLYMERS ?

Comparative Durability of Polymer-modified cements



Resistance to Ultraviolet Radiation

- Eliminate yellow or chalk like Styrene – Butadiene Rubber (SBR) copolymers.

Resistance to Hydrolysis

- Hold up well in wet environments, unlike Polymers containing Vinyl Acetate (PVA).

Resistance to Deterioration

- Tolerate wide fluctuations in temperature and function well in variable climates.

Superior Mechanical Strength

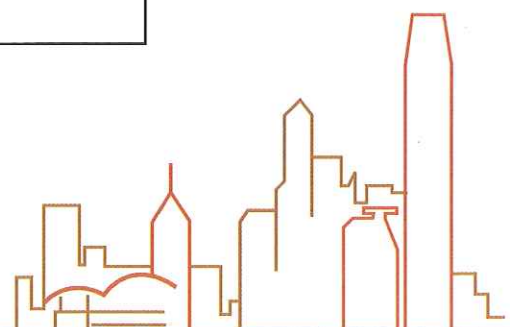
- Withstand vibration and abrasion of heavy traffic better than unmodified c/s mortar.

Superior Bond Strength

- Apply easily on top of wide variety of substrates such as new/old concrete, masonry, brick, metal, wood and polymeric foam.

Properties of PERMFLEX® AM-998

Appearance	White, milky aqueous emulsion
Odor	Slight ammonia
Solid content, %	46 to 48
Solid by volume, %	42 to 44
Viscosity Brookfield RVT, cps	25
Density, 25°C Kilograms per Litre	1.06
pH, when packed	9.5 to 10.0
Freeze / thaw stability	5 cycles
Toxicity	Nontoxic
Fire	Nonflammable





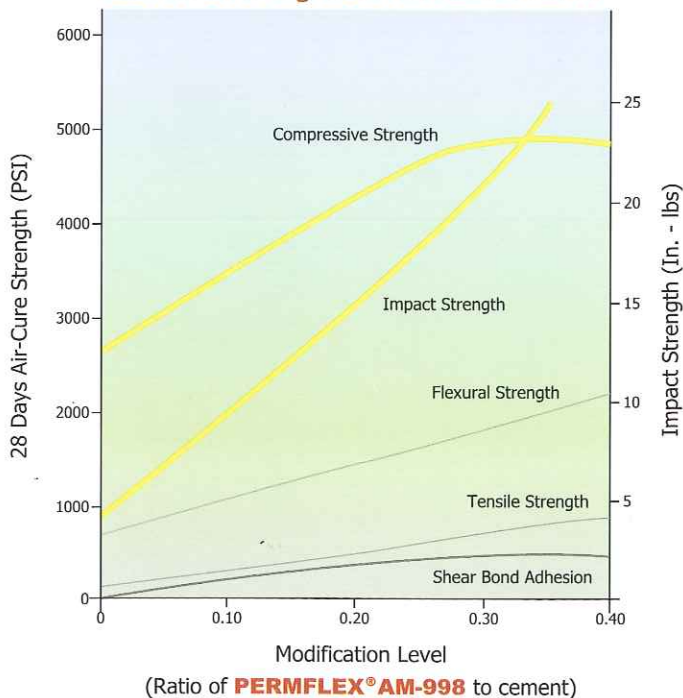
Physical Strength Properties

	Unmodified Cement	PERMFLEX® AM-998 Modified Cement
PERMFLEX® AM-998		
Cement Ratio	0	0.3
Water/Cement Ratio	0.48	0.37
Tensile Strength (psi)		
28 Days Air-Cure (a)	235	615 (4.18 MPa)
28 Days Wet-Cure (b)	535	-
Compressive Strength (psi)		
28 Days Air-Cure (a)	2390	5715 (38.87MPa)
28 Days Wet-Cure (b)	5795	-
Flexural Strength (psi)		
28 Days Air-Cure (a)	610	1585 (10.78 MPa)
28 Days Wet-Cure (b)	1070	-
Shear Bond Adhesion (psi)		
28 Days Air-Cure (a)	45 (c)	650 (d) (4.42 MPa)
28 Days Wet-Cure (b)	185 (c)	-
Impact Strength (in-lbs)		
28 Days Air-Cure (a)	6	16
28 Days Wet-Cure (b)	7	-
Abrasion Resistance (% wt loss)		
28 Days Air-Cure (a)	23.8	1.7
28 Days Wet-Cure (b)	5.1	-

Remarks:

(a) 25°C, 50% relative humidity.
 (b) 1 day at 25°C and 90% relative humidity.
 6 days water immersion at 25°C.
 7 days at 25°C and 50% relative humidity.
 7 days water immersion at 25°C.
 7 days at 25°C and 50% relative humidity.
 (c) Adhesive failure.
 (d) Cohesive failure.

Performance Properties vs Level of Polymer Modification



USAGE

Trowelling

Tough and good adhesion for tile grouts and stucco.

Mortar restoration

Make repairs to a patio without the inconvenience of wet curing and adhere to a variety of surfaces and is durable even when thinly applied.

Underlayment

Superior bonding power to old concrete, masonry, bricks, wood, metals and many other surfaces.

Metal primers

Excellent corrosion and water resistance. Cures in damp enclosed areas. Superior adhesion to metal. Outstanding flexibility and weatherability.

Waterproofing

The addition of **PERMFLEX® AM-998** to cement reduces the water to cement ratio, increases the density of the mortar and thus significantly reduces the permeability of cement.

APPLICATIONS

In general, the substrate must be sound, clean and free from loose particles, paint, grease and laitence. If necessary, use water jet guns or manually to clean the surfaces. (If the substrate temperature is higher than 35°C, wash down and saturate the surface but leave no puddles of water.)

PERMFLEX® AM-998 is formulated as a concentrated cement additive which recommend to be diluted for various usages, such as **bond coat, metal primer, spatterdash, plastering, tiles fixing, repair mortar, waterproof render**, etc. For detail please refer to the table of **Suggestion for Mix Design**.





Suggestion for Mix Design:
PERMFLEX®AM-998 Cement Modifier for Major Applications

	Spatterdash	Bond Coat	Rendering	Wall Tiling	Floor Screeding
Composite	7 kg cement + 14 kg sand	3 kg cement	20 kg cement + 60 kg sand	4 kg cement	20 kg cement + 60 kg sand
PERMFLEX®AM-998	1 litre	1 litre	2 litre	0.3 litre	2.5 litre
Water	3 litre/w.c.#	2 litre/w.c.#	7 litre/w.c.#	1 litre/w.c.#	8 litre/w.c.#
Coverage	6 sq.m.	15 sq.m.	10 mm x 5 sq.m.	3 mm x 0.6 sq.m.	6 sq.m.
Coverage / pail of PERMFLEX®AM-998(20L)*	120 sq.m.	300 sq.m.	10 mm x 50 sq.m.	3 mm x 40 sq.m.	10 mm x 50 sq.m.

* **PERMFLEX®AM-998** 20 litre = 21.2kg
 # w.c.-to work consistency

Remarks:
 The quantities of water cited in the above mix design should be considered as general guides. Exact amounts depend on the type and brand of cement, particle size and moisture content of the sand, and on the other agents used in the mortar mix. Increasing amounts of **PERMFLEX®AM-998** used in the cement mortar require decreasing amounts of water for a suitable workable consistency.

Workability

PERMFLEX®AM-998 produces mortar with a smooth, buttery texture. As a result, it is easy to trowel and spread, even at elevated temperatures. In addition, the mortar is much less inclined to stick to the trowel during application than a mix modified with a vinyl-acetate based polymer.

Packaging

160 kg/drum, 20 litre/pail and 5 litre/bottle

Guarantee

The information contained in this leaflet is based on our expertise, experience and technical knowledge, laboratory testing and bibliographic material.

PERMTEX® Limited reserves the final right to introduce changes without prior notice. Any use of these data beyond the purposes specified in the leaflet will not be the Company's responsibility unless authorized by us. The data shown on consumptions, measurement and yields are for guidance only. These data are subject to variation due to the specified atmospheric and jobsite conditions so reasonable variation from the data may be experienced. In order to know the real data, a test on the jobsite must be done, and it will be carried out under the client responsibility. We shall not accept responsibility exceeding the value of the purchased product. For any doubt, consult our Sales and Technical Department.

Pot Life and Set Time

The pot life and set time of a typical modified cement/sand mortar mix are 1-2 hours and 4-6 hours respectively (actual time may varies with ambient temperature, humidities and site conditions.)

Caution

While handling or storing, keep **PERMFLEX®AM-998** from reaching temperature below 5°C to avoid freezing. The product is stable at up to five freeze thaw cycles. Do not apply mixes with **PERMFLEX®AM-998** as an additive at temperature below 5°C or when the temperature is expected to drop to such level within 24 hours.

