



www.marine3technologies.com

We make water work better

TECHNOLOGY

Marine 3 Technologies (M3T) offers a groundbreaking patented anionic surfactant that has been extensively researched and developed from sea water over a period of 11 years.

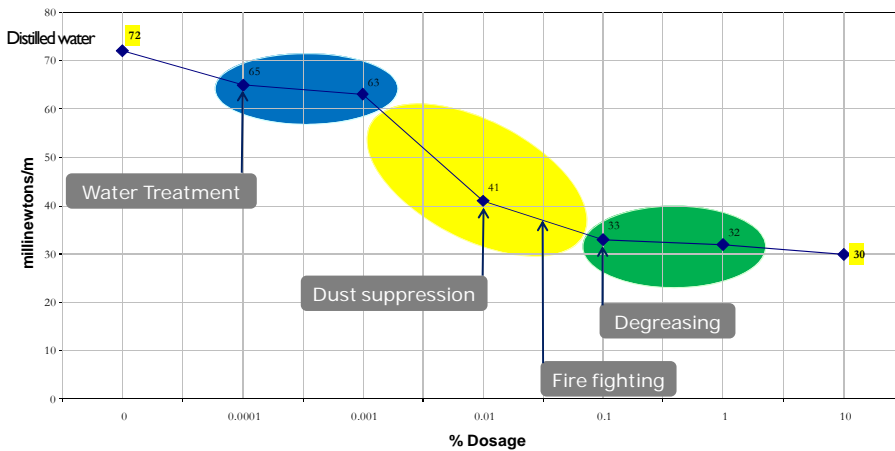
M3T is primarily used in the pre-treatment of water. The quality of water and its properties are manipulated in an entirely natural way.

This natural product neutralises the magnetic charges of particles in water thus reducing surface and interfacial tension.

Benefits of reduced surface and interfacial tension:

- Increased adhesion of the liquid to a solid particle thus resulting in a powerful **wetting agent**.
- Allows for water and oil-based droplets to break down into finer globules and to stay in suspension for longer, resulting in powerful **emulsification**.
- Prevention of particles to cluster or agglomerate together, thus resulting in powerful **de-agglomeration**.

Result of M3T on water surface tension



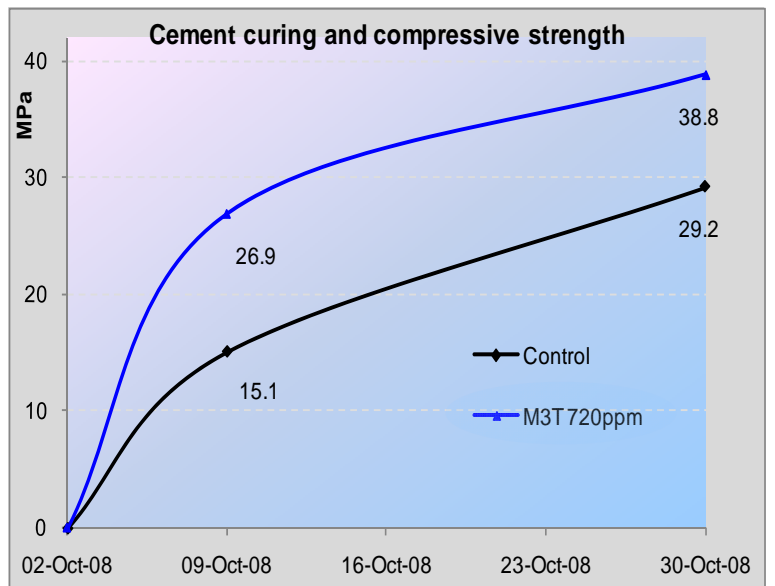
CONCRETE AND COMPACTION CASE STUDIES

Concrete cubes (SABS 861-3,863)

Test Type	Curing and compressive strength
Binder	Afrisam CemV/A S/V 32.5N
Aggregate	Washed filler sand, 19mm stone
M3T dosage	720ppm, water Ph 7.5

The result of this test is illustrated in the adjacent graph. Much faster concrete curing and strengthening is achieved by adding M3T to water for the concrete mixture.

This leads to considerable time savings through quicker turnaround and site access times. But most importantly a significant cost saving can be achieved.



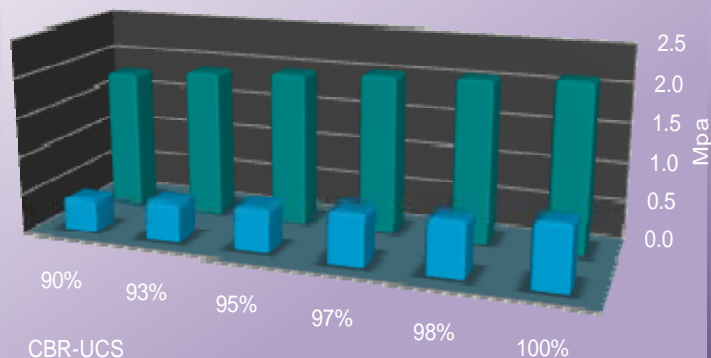
Road compaction of G6 material (sub-base)

Test Type	CBR-UCS @ MOD AASHTO 95%
Road material	G6
Cement mix	2% cem.IV 32.5 BR BV, Lafarge
M3T dosage	750ppm

Matrolab conducted tests to evaluate the effect of M3T on road unconfined compressive strength (UCS). Remarkable results were achieved on the effect it had on the MPa at 95% compaction. MPa increased by 233% from 0.59 to 1.97 over the controlled sample.



M3T dosage to natural water - 2% cement mix



	90%	93%	95%	97%	98%	100%
0 ppm RC5	0.41	0.51	0.59	0.68	0.74	0.85
750 ppm RC3	1.8	1.9	1.97	2.04	2.08	2.15

OTHER CEMENT APPLICATION



Brick Making

Early tests results indicate a quicker curing period with the addition of M3T. More comprehensive tests are in progress to determine if less cement and water can be used to obtain the required MPa's. Quicker curing periods allow for faster turnaround times and release of occupied brick moulds. Added benefits in practice indicated a 40% saving in brick breakages.



Building Foundations / Slabs / Flooring / Plastering

The addition of M3T to the water, will result in an increase in the MPa of the concrete mixture. This implies that to achieve the desired MPa, as prescribed by an engineer, one could reduce the traditional cement quantity. Concrete with M3T will maintain its plasticity (easy workability). The product will also assist with the stripping of formwork, thus reducing cost and maintenance of equipment.



Moulding

Turnaround times are accelerated through quicker cement curing time and earlier release of moulds. Further saving are achieved on cement and water usage. M3T addition results in cement not sticking to the moulds and an amazingly smooth cement surface—something that is seldom achieved under conventional moulding practices. The reduction of blow-holes leads to the saving of labour associated with priming and edging.

BENEFITS

- Improved performance of all water applications.
- Non-toxic and environmentally friendly.
- Antistatic.
- Non-corrosive, non-flammable.
- Contains no glycol, ammonia or solvents.
- Cost saving application.
- Time saving application.

OTHER APPLICATIONS

- Dust control, surface and airborne.
- Agriculture.
- Cleaning.
- Fire fighting.
- Pulp and paper.
- Chemical enhancement, flocculation, etc.
- Effluent: treatment & sludge transportation.
- Heating and cooling.
- Time saving application.