

## Superplasticising Concrete Admixture

### DESCRIPTION

TamCem 23 is a new generation superplasticiser for concrete. It contains polycarboxylate ether polymers and is specially formulated to give exceptionally high water reduction and impact extreme workability and slump retention. It is a non-chloride liquid admixture which has been formulated to comply with the requirements of ASTM C 494 for Type G water-reducing, high range and retarding admixtures. It fully meets the requirements of BS5075: Part 3: 1985 for retarding superplasticising admixtures and JIS A6204 "Chemical Admixtures for Concrete". It is compatible with all cements meeting recognised international standards.

TamCem 23 performs two key functions in concrete & mortar: it allows significant water reduction without losing workability and it significantly increases the slump without the need to increase the water content.

Using water to increase the workability of concrete can severely weaken the setting strength. TamCem 23 polycarboxylate polymer disperses cement by combining the traditional effect of electrostatic repulsion with 'steric hindrance' facilitated by the molecular structure of polycarboxylate ether-based technology. This provides greater dispersion compared to electric only repulsion from those conventional BNS and SMF based superplasticisers.

TamCem 23 requires lower dosage compared to conventional superplasticisers but provides extreme workability characteristics for high slump, flowable, self consolidating concrete. It also exhibits greatly reduced water demand and by increasing the density of side chain grafts improves slump retention.

### KEY BENEFITS

- > High water reduction that enhances high early and ultimate strengths, low permeability and makes the concrete highly durable
- > High flowability provides easy placement and compaction
- > Good cohesion, no segregation and minimal bleed water even though it has extremely high level of workability
- > Reduced slump loss, enhanced easier placement and delivery control
- > High elastic modulus, low shrinkage and creep are achievable with graded coarse and fine aggregates
- > Superior surface finishing

### TYPICAL APPLICATIONS

- > High performance concrete
- > Mixing logistics efficiency during large pour
- > Highly flowable concrete
- > Highly durable concrete
- > High strength concrete
- > Ready-mixed concrete
- > Self compacting concrete
- > Mass concrete
- > Pumped concrete
- > Long distance transportation

### TECHNICAL DATA

TamCem 23	
Form	Liquid
Colour	Straw
Density (g/cm <sup>3</sup> )	1.06
Chloride Ion Content	< 0.01%
All at 25°C	

All technical data stated herein is based on tests carried out under laboratory conditions.

### APPLICATION GUIDELINES

Dosage can be adjusted to meet mix design requirements or to specific job site conditions. Trial concrete mixes must be carried out to determine the appropriate dosage.

An independent dispenser and feed line must be used during the application. TamCem 23 can be added to the mixed concrete or into the mixing water, but addition to any dry concrete mix is not recommended.

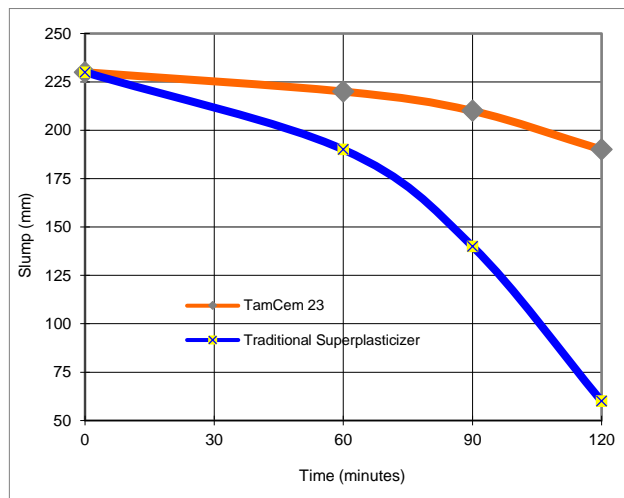
Typical dosage is 1000 ml / 100 kg of cementitious binder. Should application conditions require a higher dosage rate such as with self-compacting concrete (SCC) applications, consult your local Normet representative.

Whilst any information and/or specification contained herein is to the best of our knowledge, true and accurate, we always recommend that a trial be carried out to confirm suitability of the product. Please note regional climatic conditions may cause a variation in the performance of the product. No warranty is given or implied in connection with any recommendations or suggestions made by us or our representatives, agents or distributors. The information in this data sheet is effective from the date shown and supersedes all previous data. Please check with your local Normet office to confirm that this is current issue.

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Example of TamCem 23 flowable concrete test data in comparison with traditional admixture

Mix Proportion	Test Mix A	Test Mix B
Cement	400 kg/m <sup>3</sup>	400 kg/m <sup>3</sup>
Blast-furnace slag	100 kg/m <sup>3</sup>	100 kg/m <sup>3</sup>
Coarse aggregate (Max. 20mm)	1030 kg/m <sup>3</sup>	1030 kg/m <sup>3</sup>
Fine aggregate (River Sand)	615 kg/m <sup>3</sup>	655 kg/m <sup>3</sup>
Water	175 kg/m <sup>3</sup>	175 kg/m <sup>3</sup>
Water/Cement ratio	0.343	0.343
Admixture	TamCem 23	Traditional Superplasticiser
Dosage by weight of binder	1.00%	1.35%



TamCem 23 is compatible with most TamCem admixtures; please consult your local Normet representative if required.

Do not blend with other superplasticisers and/or water-reducers even if diluted with water or already in the mix.

### PACKAGING

TamCem 23 is supplied in IBCs, drums and bulk. Packaging size may vary subject to local regulations and requirements, please contact your local Normet representative for more details.

### STORAGE

TamCem 23 should be kept dry and out of direct sunlight, stored at room temperature above 0°C. If these conditions are maintained and the product packaging remains sealed, then a shelf life of one year can be expected.

TamCem 23 will freeze at approximately -4°C but will return to full functionality after thawing and thorough mild mechanical agitation.

### HEALTH & SAFETY

TamCem 23 should only be used as directed. We always recommend that the Safety data sheet is carefully read prior to application of the material. Our recommendations for protective equipment should be strictly adhered to for your personal protection. The Safety data sheet is available upon request from your local Normet representative.

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