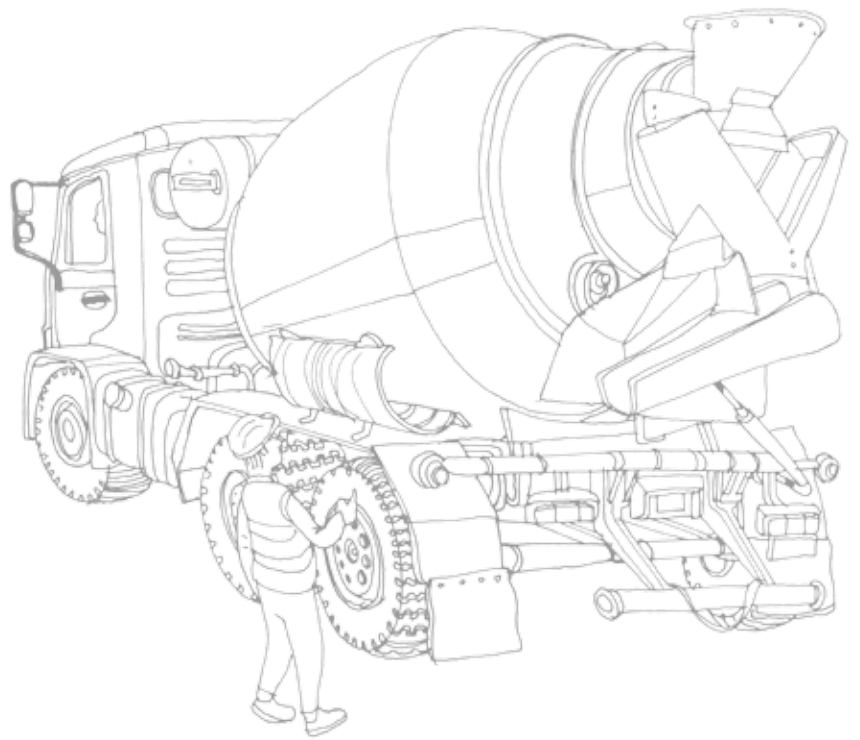


# ADMIXTURES for CONCRETE



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# CE Marking for admixtures

Since the admixtures for concrete can have extremely different performances and usage, the norm has different classification categories, different tests and minimum performance levels for every single admixture type.

CLASSIFICATION	DESCRIPTION	TABLE
WR	Water reducing/plasticising admixture	Table 2
HRWR	High range water reducing/ super-plasticising admixture	Table 3
WRA	Water retaining admixture	Table 4
AEA	Air entraining admixture	Table 5
SAA	Set accelerating admixture	Table 6
HAA	Hardening accelerating admixture	Table 7
SRA	Set retarding admixture	Table 8
WrA	Water resisting admixture	Table 9
WR + SRA	Set retarding/ water reducing/ plasticising admixture	Table 10
HRWR + SRA	Set retarding/high range water reducing/super-plasticising admixture	Table 11
WR + SAA	Set accelerating/ water reducing/ plasticising admixture	Table 12

Admixtures that also have important secondary functions can also obtain the certification for two or more categories at the same time. This way the effects of the admixture on concrete, both during the fresh state and hardened, will be able to be studied.

In order to see if the products meet the requirements, the specific tests for each type of admixture must be carried out:

- *when the certificate is first issued;*
- *when a new formula or type of admixture is developed;*
- *when a modification of the formula could significantly influence the admixture's performances;*
- *when a modification of the raw material could significantly influence the admixture's performances.*

The following table lists the classification of **MAPEI** admixtures for concrete, the abbreviations and the norm table that defines the minimum requirements.

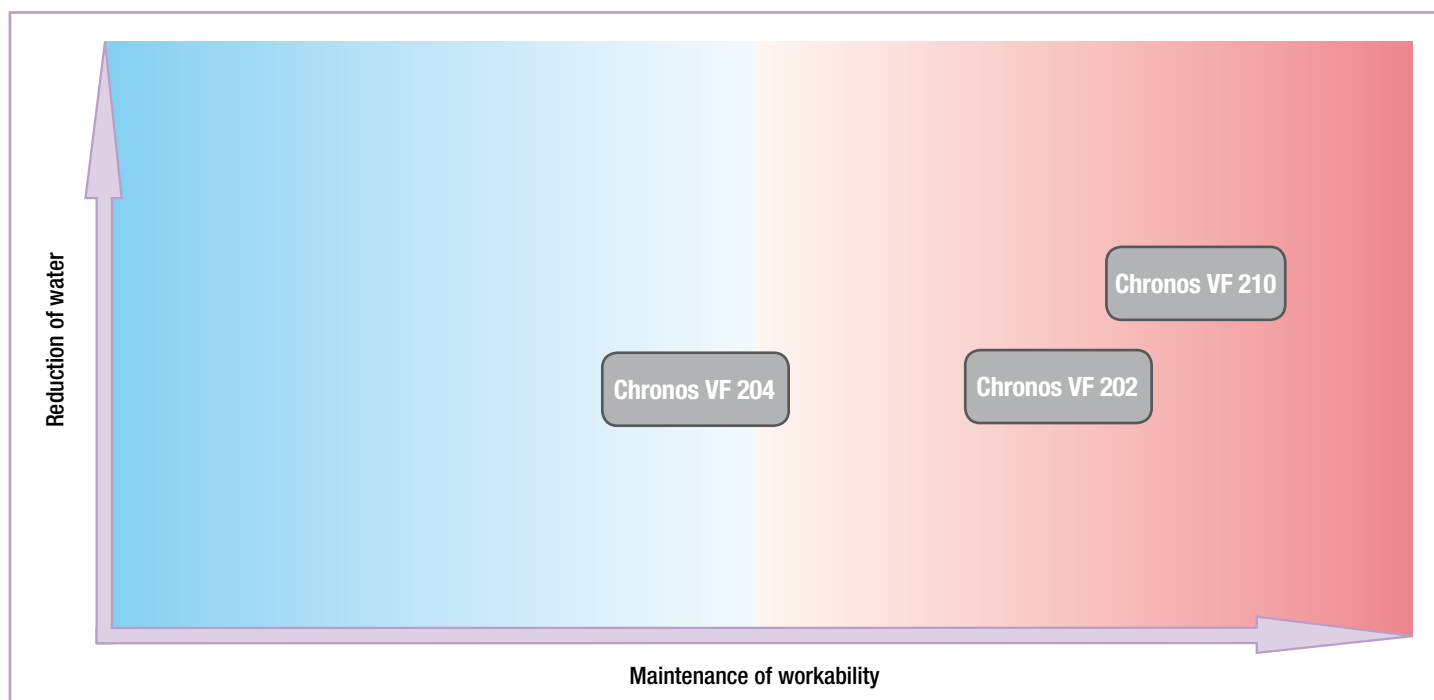
# Classification of admixtures for concrete

ADMIXTURES FOR CONCRETE EN 943-2:2009		
ADMIXTURE	CLASSIFICATION	TABLE
CHRONOS VF 202	HRWR + SRA	11
CHRONOS VF 204	HRWR + SRA	11
CHRONOS VF 210	HRWR + SRA	11
DYNAMON BT 2	HRWR + SRA	11
DYNAMON BT 4	HRWR	3
DYNAMON CL 302	WR + SRA	10
DYNAMON CL 304	WR + SRA	10
DYNAMON EASY 11	HRWR	3
DYNAMON EASY 21	HRWR + SRA	11
DYNAMON EASY 31	HRWR + SRA	11
DYNAMON FLOOR 10	HRWR + SAA	3 + 6
DYNAMON FLOOR 20	HRWR	3
DYNAMON HAA	HAA	7
DYNAMON NRG 1010	HRWR + HAA	3 + 7
DYNAMON NRG 1012	HRWR + HAA	3 + 7
DYNAMON NRG 1014	HRWR + HAA	3 + 7
DYNAMON NRG 1020	HRWR + HAA	3 + 7
DYNAMON NRG 1022	HRWR + HAA	3 + 7
DYNAMON SP1	HRWR + HAA	3 + 7
DYNAMON SR1	HRWR	3
DYNAMON SR2	HRWR + SRA	11
DYNAMON SR3	HRWR + SRA	11
DYNAMON SR4	HRWR + SRA	11
DYNAMON SR21	HRWR	3
DYNAMON SR41	HRWR + SRA	11
DYNAMON SR51	HRWR	3
DYNAMON SR52	HRWR + SRA	11
DYNAMON SR912	HRWR + SRA	11
DYNAMON SR914	HRWR	3
DYNAMON SR916	HRWR + SRA	11
DYNAMON SX	HRWR	3
DYNAMON SX12	HRWR + SRA + WRA	11 + 4
DYNAMON SX14	HRWR + SRA + WRA	11 + 4
DYNAMON SX22	HRWR + SRA	11

ADMIXTURES FOR CONCRETE EN 943-2:2009		
ADMIXTURE	CLASSIFICATION	TABLE
DYNAMON SX24	HRWR	3
DYNAMON SX28	HRWR + HAA	3 + 7
DYNAMON SX32	HRWR + SRA	11
DYNAMON SX34	HRWR	3
DYNAMON SX42	HRWR + SRA	11
DYNAMON SX44	HRWR	3
IDROCRETE DM	WrA	9
IDROCRETE S	WrA	9
MAPEAIR AE 1	AEA	5
MAPEAIR AE 2	AEA	5
MAPEAIR AE 10	AEA	5
MAPEAIR AE 20	AEA	5
MAPEFAST C (formerly Antifreeze liquid)	HAA	7
MAPEFAST CF/L (formerly Antifreeze S liquid)	HAA	7
MAPEFAST CF/P (formerly Antifreeze S powder)	HAA	7
MAPEFLUID AC2	HRWR + SRA	11
MAPEFLUID AC3	HRWR	3
MAPEFLUID N100	HRWR + SRA	11
MAPEFLUID N200	HRWR	3
MAPEFLUID PZ500	HRWR + WrA	3 + 9
MAPEFLUID PZ504	HRWR + SRA + WrA	11 + 9
MAPEFLUID R104	HRWR + SRA	11
MAPEPLAST N10	WR	2
MAPEPLAST R10	WR + SRA	10
MAPETARD	SRA	8
MAPETARD SD2000	SRA	8
VIBROMIX C1	WR + HAA	2 + 7
VIBROMIX L1	WR	2
VIBROMIX P	WrA	4
VIBROMIX S	WrA	9
ADMIXTURES FOR CONCRETE EN 943-4:2009		
ADMIXTURE	CLASSIFICATION	TABLE
EXPANFLUID		1

# Chronos<sup>®</sup> super-plasticisers

(Chemically Reactive Nanostructural Super-plasticisers)



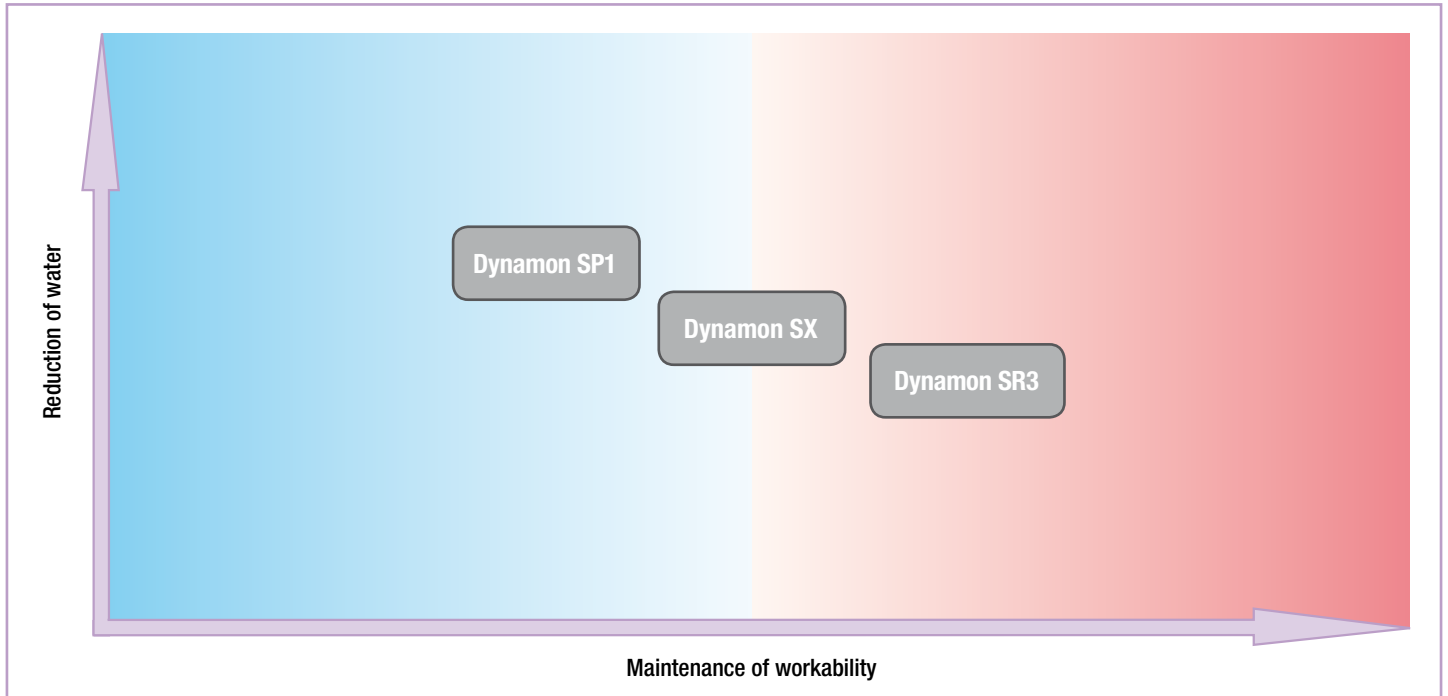
**Chronos<sup>®</sup>** is the new range of MAPEI super-plasticisers made from special polymers, specifically developed for the high quality ready-mixed concrete market.

**Chronos<sup>®</sup>** is the ideal solution when concrete needs to be transported over long or very long distances, including in hot climates, without resorting to the use of retarding admixtures.

**Chronos<sup>®</sup>** (Chemically Reactive Non-structural Super-plasticisers) technology was developed in the MAPEI research laboratories, and integrates the characteristics of conventional acrylic super-plasticisers with the innovative and revolutionary performance characteristics of these new polymers. The combination of these effects provokes a progressive activation of **Chronos<sup>®</sup>** within the cementitious conglomerate, so that the loss of workability is continuously compensated for by the “release” of special functional groups present in the polymers.

PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Chronos VF 202</b> Super-plasticiser to extend workability in hot weather (up to 2 hours) without the use of a setting retardant	SUMMER	0.6-1.2%	1.11 ± 0.03
<b>Chronos VF 204</b> Super-plasticiser to extend workability (> 1 hour) without the use of a setting retardant	WINTER	0.6-1.2%	1.06 ± 0.02
<b>Chronos VF 210</b> Super-plasticiser to extend workability (up to 3 hours) without the use of a setting retardant	FOR USE ALL YEAR ROUND	0.6-1.2%	1.09 ± 0.02

# High-performance super-plasticisers

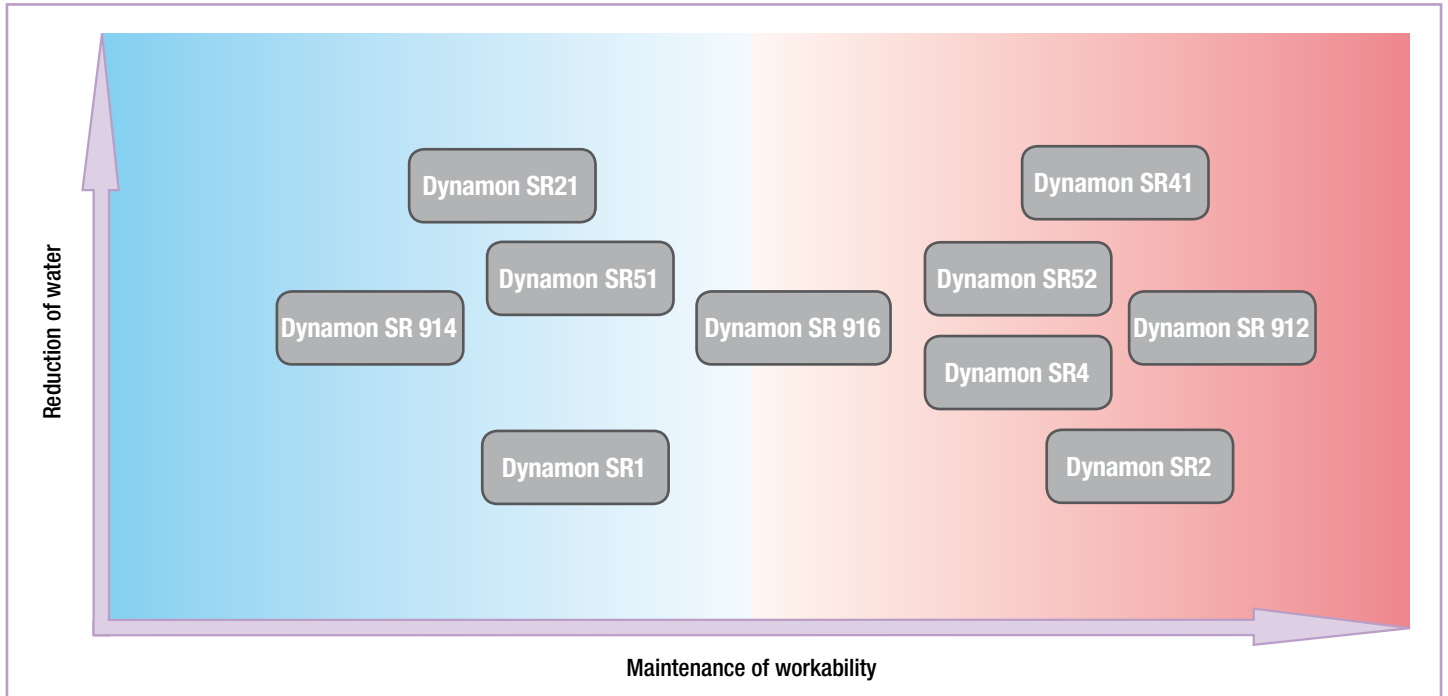


## Range of highly concentrated, polymer-based, super-plasticising admixtures.

These products guarantee exceptional reduction in the amount of water required, and maintain good workability without delaying the development of strength. These characteristics make the products in the range “universal”.

PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Dynamon SP1</b> Super-plasticiser for very low water/cement ratios with good maintenance of workability; also suitable for steam curing	FOR USE ALL YEAR ROUND	0.6-1.2%	1.09 ± 0.02
<b>Dynamon SX</b> Super-plasticiser for low water/cement ratios with good maintenance of workability	FOR USE ALL YEAR ROUND	0.5-2.0%	1.07 ± 0.02
<b>Dynamon SR3</b> Super-plasticiser for low water/cement ratios with excellent maintenance of workability	FOR USE ALL YEAR ROUND	0.5-1.0%	1.08 ± 0.02

# High-performance super-plasticisers for ready-mixed concrete



The products in this range are calibrated so that the amount of mixing water is considerably lower and the concrete's mechanical characteristics develop quickly to guarantee higher quality and longer service life for reinforced cement structures. At the same time, correct maintenance of workability is guaranteed at various temperatures. These characteristics make it an ideal range of products for large sites and for large infrastructures.

The performance characteristics achieved when using these super-plasticisers make them particularly useful when mixing S.C.C., in that they guarantee good slump of the mix without the negative effects of excessive stickiness in the cementitious matrix.

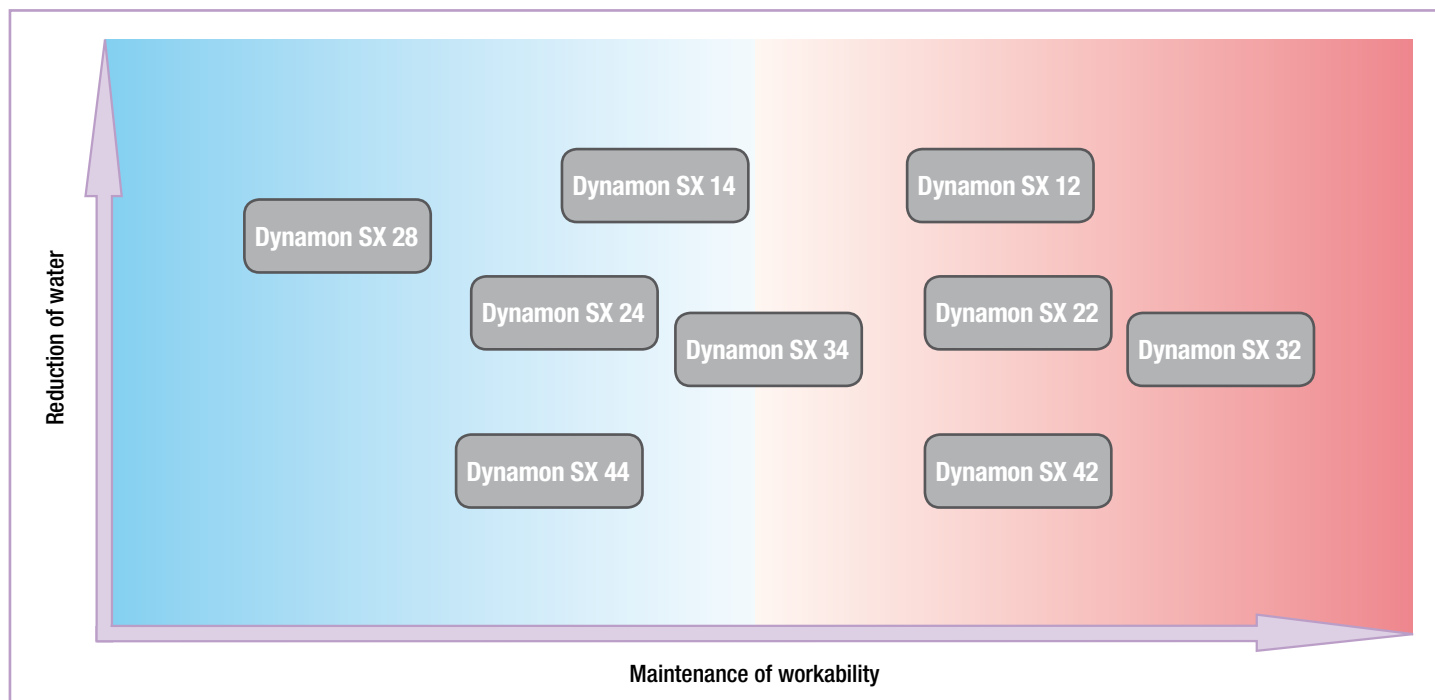
PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Dynamon SR1</b> Neutral super-plasticiser for low water/cement ratios with good maintenance of workability	WINTER	0.8-1.5%	1.06 ± 0.02
<b>Dynamon SR2</b> Super-plasticising retardant with excellent maintenance of workability	SUMMER	0.8-1.5%	1.09 ± 0.02
<b>Dynamon SR4</b> Super-plasticising retardant for low water/cement ratios with excellent maintenance of workability	SUMMER	0.8-1.5%	1.10 ± 0.03

# High-performance super-plasticisers for ready-mixed concrete

PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Dynamon SR21</b> Super-plasticiser for low water/cement ratios with good maintenance of workability; integrator for fines	WINTER	0.7-1.5%	1.08 ± 0.02
<b>Dynamon SR41</b> Super-plasticising retardant for low water/cement ratios with excellent maintenance of workability; integrator for fines	SUMMER	0.7-1.5%	1.08 ± 0.02
<b>Dynamon SR51</b> Super-plasticiser for low water/cement ratios with good maintenance of workability; integrator for fines	FOR USE ALL YEAR ROUND	0.7-1.5%	1.07 ± 0.02
<b>Dynamon SR52</b> Super-plasticising retardant for low water/cement ratios with excellent maintenance of workability; integrator for fines	SUMMER	0.7-1.5%	1.07 ± 0.02
<b>Dynamon SR 912</b> Super-plasticising retardant for low water/cement ratios with excellent maintenance of workability	SUMMER	0.5-1.5%	1.07 ± 0.02
<b>Dynamon SR 914</b> Super-plasticiser for low water/cement ratios and good maintenance of workability; integrator for fines	WINTER	0.5-1.5%	1.05 ± 0.02
<b>Dynamon SR 916</b> Super-plasticiser for low water/cement ratios and excellent maintenance of workability; integrator for fines	FOR USE ALL YEAR ROUND	0.5-1.5%	1.09 ± 0.02



# R.E.A.L. (Robustness Enhancing Admixture Line) for pumped concrete with no segregation or bleeding



**Dynamon R.E.A.L.** is a range of super-plasticisers used in the production of ready-mixed concrete. The products are characterised by their capacity to reduce mixing water and to optimise the maintenance of workability and the development of mechanical strength.

Thanks to their performance characteristics, **Dynamon R.E.A.L.** admixtures are ideal for making S.C.C., in that they guarantee good slump of the mix without the negative effects of excessive stickiness in the cementitious matrix.

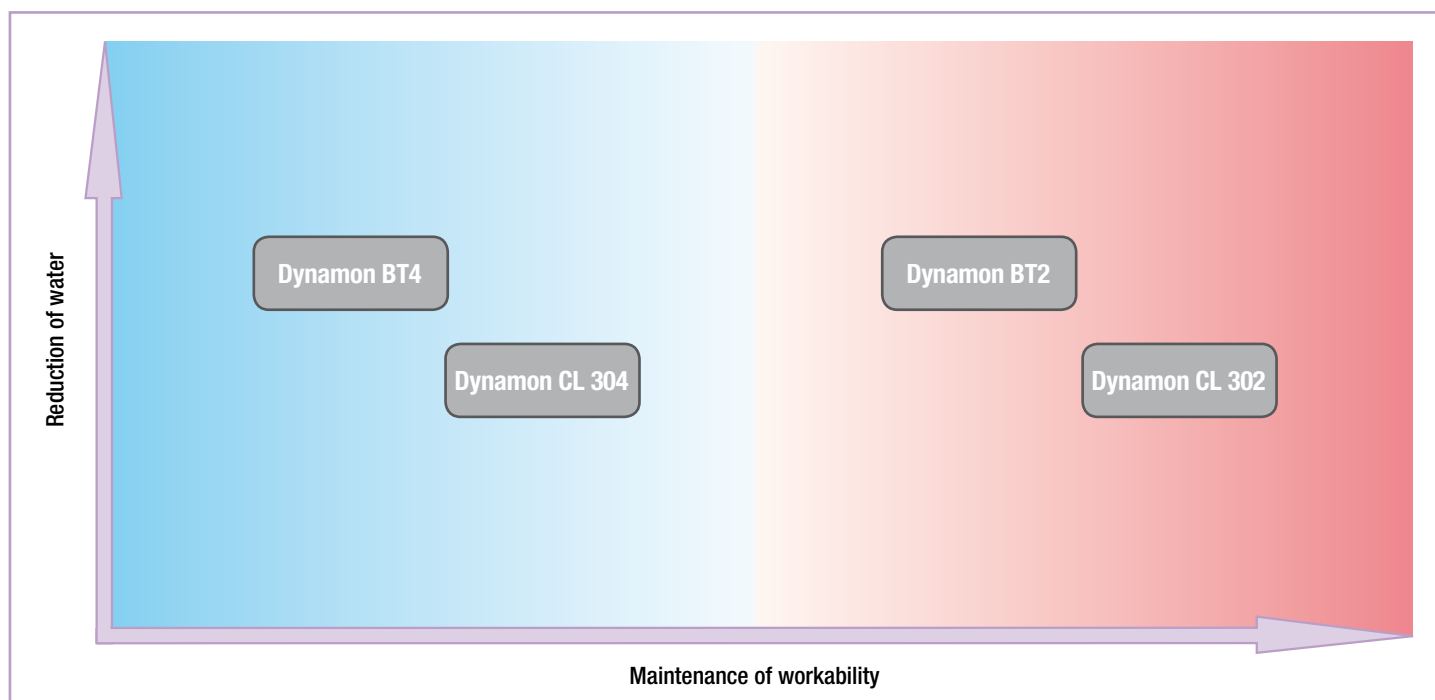
PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Dynamon SX 12</b> Super-plasticising retardant for low water/cement ratios with excellent maintenance of workability; integrator for fines	SUMMER	0.5-1.5%	1.07 ± 0.02
<b>Dynamon SX 14</b> Super-plasticiser for low water/cement ratios with good maintenance of workability; integrator for fines	FOR USE ALL YEAR ROUND	0.5-1.5%	1.06 ± 0.02

# R.E.A.L. (Robustness Enhancing Admixture Line) for pumped concrete with no segregation or bleeding

PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Dynamon SX 22</b> Super-plasticising retardant for low water/cement ratios with excellent maintenance of workability; integrator for fines	SUMMER	0.5-1.5%	1.09 ± 0.02
<b>Dynamon SX 24</b> Super-plasticiser for low water/cement ratios with good maintenance of workability; integrator for fines	WINTER	0.5-1.5%	1.07 ± 0.02
<b>Dynamon SX 28</b> Super-plasticising accelerator for ready-mixed concrete with a high reduction of mixing water	WINTER	0.5-1.5%	1.11 ± 0.03
<b>Dynamon SX 32</b> Super-plasticising retardant for low water/cement ratios with excellent maintenance of workability; integrator for fines	SUMMER	0.5-1.5%	1.08 ± 0.02
<b>Dynamon SX 34</b> Neutral super-plasticiser for low water/cement ratios with good maintenance of workability; integrator for fines	WINTER	0.5-1.5%	1.07 ± 0.02
<b>Dynamon SX 42</b> Super-plasticising retardant for low water/cement ratios with excellent maintenance of workability; integrator for fines	SUMMER	0.5-1.5%	1.08 ± 0.02
<b>Dynamon SX 44</b> Neutral super-plasticiser for low water/cement ratios with good maintenance of workability; integrator for fines	WINTER	0.5-1.5%	1.06 ± 0.02

# Super-plasticisers

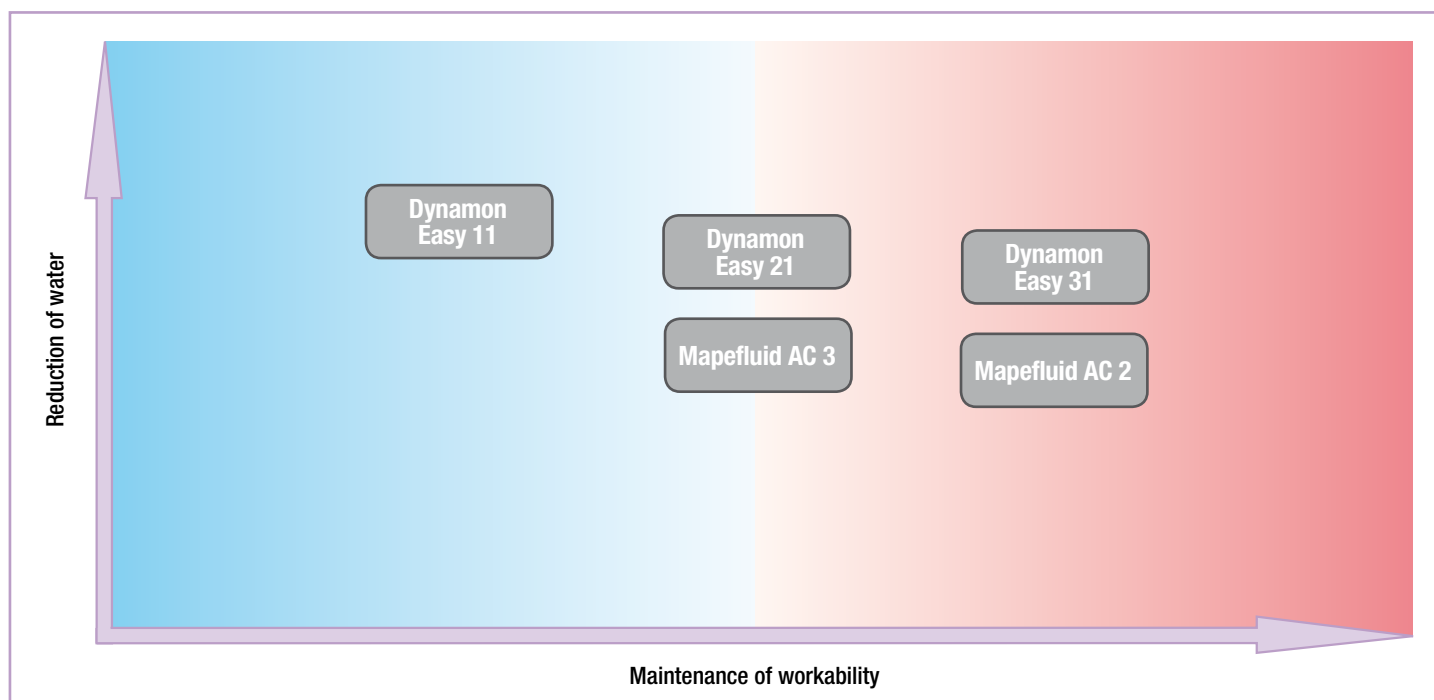
for concrete made from cement mix and/or aggregates with a high fines content



Range of super-plasticising admixtures used in the production of ready-mixed concrete using natural pozzolan-based cement mix or aggregates guaranteed by a high amount of fine and ultra-fine particles. The products are characterised by their capacity to reduce mixing water and to optimise the maintenance of workability and the development of mechanical strength.

PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Dynamon BT2</b> Super-plasticising retardant for concrete with little loss in workability	SUMMER	0.5-1.0%	1.08 ± 0.02
<b>Dynamon BT4</b> Super-plasticiser for ready-mixed concrete	FOR USE ALL YEAR ROUND	0.5-1.0%	1.06 ± 0.02
<b>Dynamon CL 302</b> Super-plasticising retardant for concrete made from aggregates with a high fines content	SUMMER	0.5-1.3%	1.19 ± 0.03
<b>Dynamon CL 304</b> Super-plasticiser for concrete made from aggregates with a high fines content	WINTER	0.5-1.3%	1.19 ± 0.03

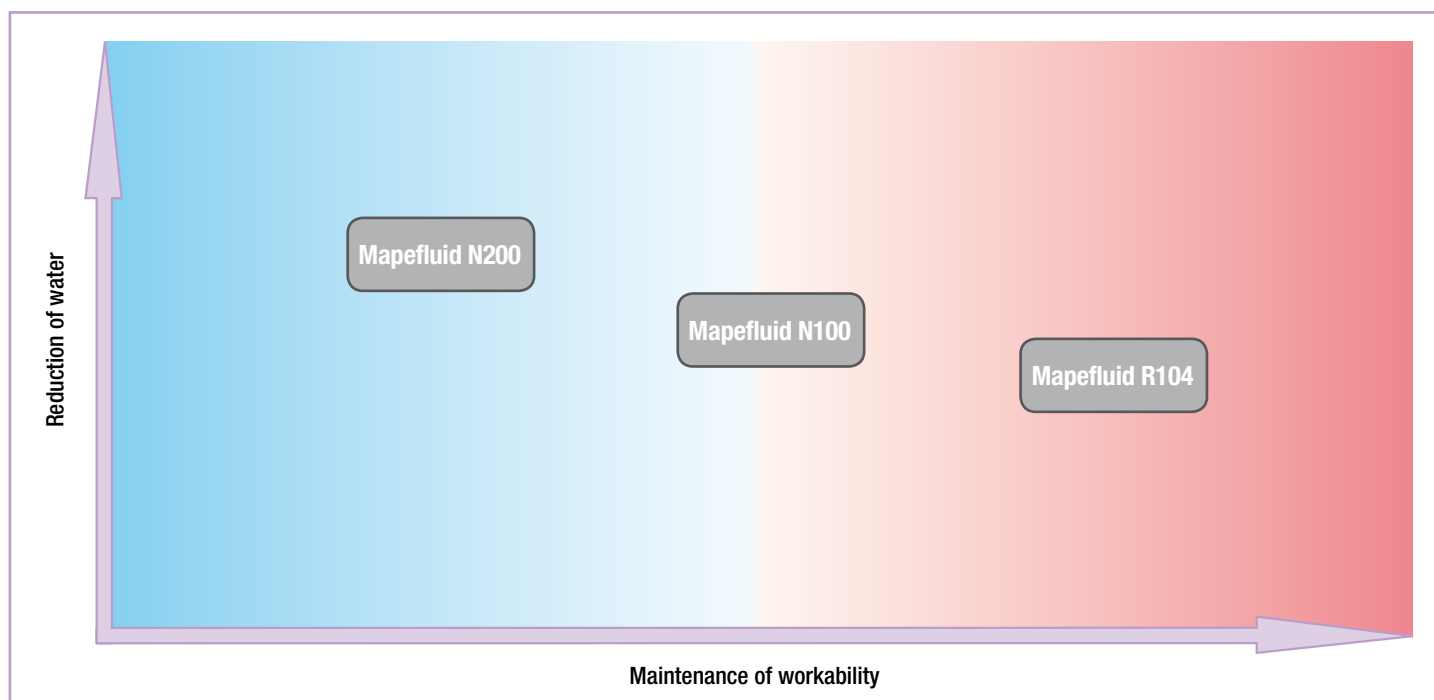
# Multi-purpose super-plasticisers for ready-mixed concrete



This range of multi-purpose super-plasticisers is characterised by admixtures which are different to each other mainly for the amount of time they maintain workability at various temperatures, for an ideal solution in all seasons. In the range of specific super-plasticising admixtures for the ready-mixed concrete market, MAPEI presents a family of products specifically developed and formulated to meet the everyday requirements of concrete plants.

PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Dynamon Easy 11</b> Multi-purpose super-plasticiser for low water/cement ratios	WINTER	0.5-2.0%	1.04 ± 0.02
<b>Dynamon Easy 21</b> Multi-purpose super-plasticising retardant for low water/cement ratios with good maintenance of workability	FOR USE ALL YEAR ROUND	0.5-2.0%	1.08 ± 0.02
<b>Dynamon Easy 31</b> Multi-purpose super-plasticising retardant for low water/cement ratios with excellent maintenance of workability	SUMMER	0.5-2.0%	1.10 ± 0.03
<b>Mapefluid AC 2</b> Multi-purpose super-plasticising retardant for low water/cement ratios with excellent maintenance of workability	SUMMER	0.5-1.5%	1.05 ± 0.02
<b>Mapefluid AC 3</b> Multi-purpose super-plasticising retardant for low water/cement ratios with good maintenance of workability	WINTER	0.5-2.0%	1.05 ± 0.02

# Conventional multi-purpose super-plasticisers for ready-mixed concrete

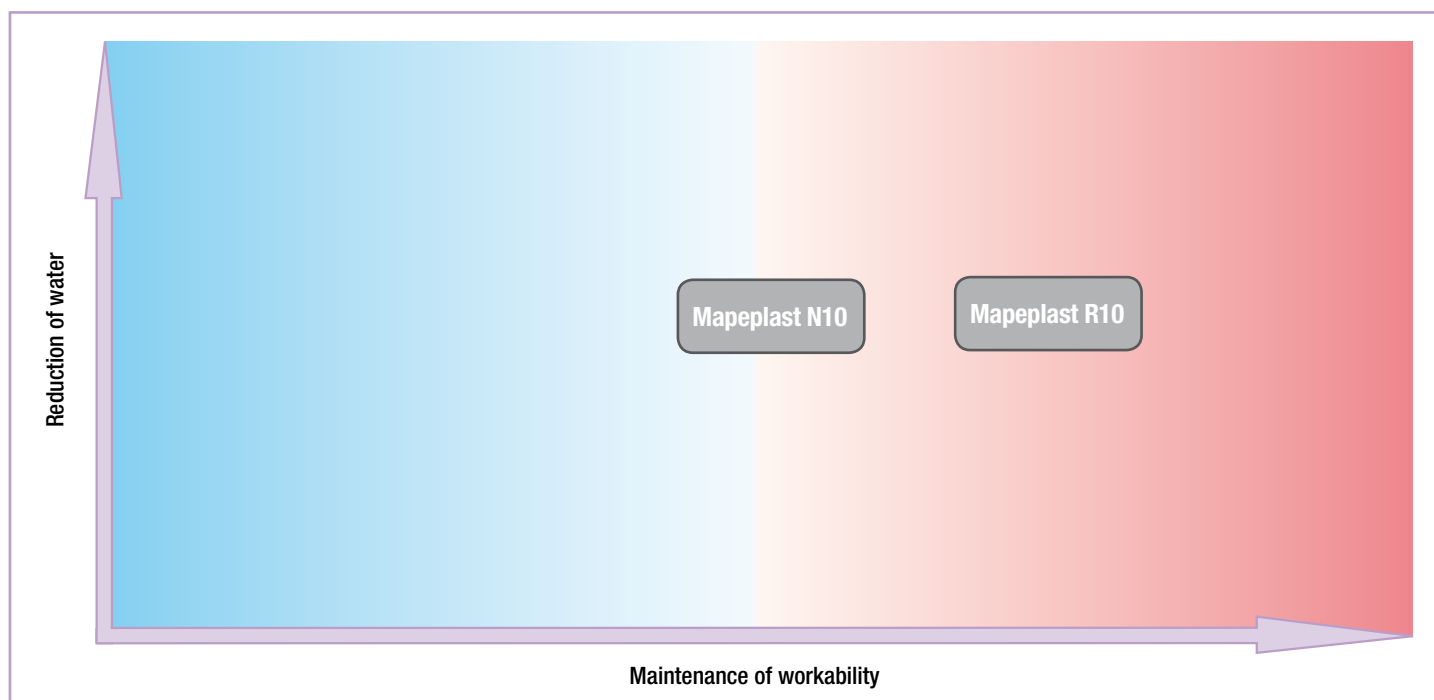


**This range of naphthalene sulfonate-based multi-purpose super-plasticisers has been developed mainly for the ready-mixed concrete market.**

The products in this range combine a good reduction in the water/cement ratio with good maintenance of workability, and excellent compatibility with the main types of concrete available on the market.

PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Mapefluid N200</b> Naphthalene-based neutral super-plasticiser. Ideal for normal and heated screeds	WINTER	0.5-1.5%	1.20 ± 0.03
<b>Mapefluid N100</b> Naphthalene-based slightly-retardant super-plasticiser with good maintenance of workability	FOR USE ALL YEAR ROUND	0.5-1.5%	1.17 ± 0.03
<b>Mapefluid R104</b> Naphthalene-based super-plasticising retardant with good maintenance of workability	SUMMER	0.8-2.1%	1.18 ± 0.03

# Conventional multi-purpose plasticisers

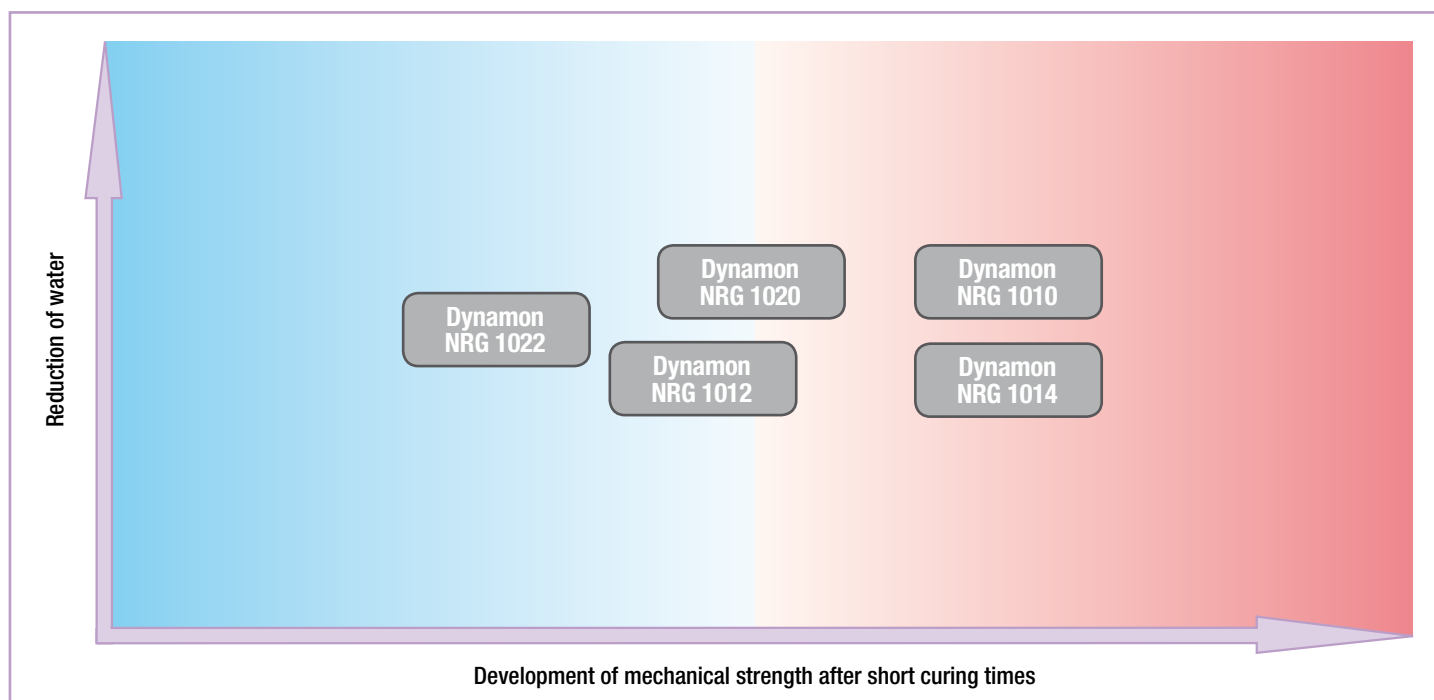


A range of plasticising admixtures for the ready-mixed concrete industry which may be used in a wide variety of doses, ideal for making concrete which develops a low amount of heat during hydration.

The products in this range have been specially developed to reduce the water/cement ratio according to the amount of admixture used, to obtain good maintenance of the concrete's workability and to make pumping and compacting of concrete easier.

PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Mapeplast N10</b> Plasticiser with good maintenance of workability	FOR USE ALL YEAR ROUND	0.2-0.5%	1.20 ± 0.03
<b>Mapeplast R10</b> Plasticising retardant with excellent maintenance of workability	FOR USE ALL YEAR ROUND	0.2-1.0%	1.19 ± 0.03

# High-performance super-plasticisers for precast concrete elements

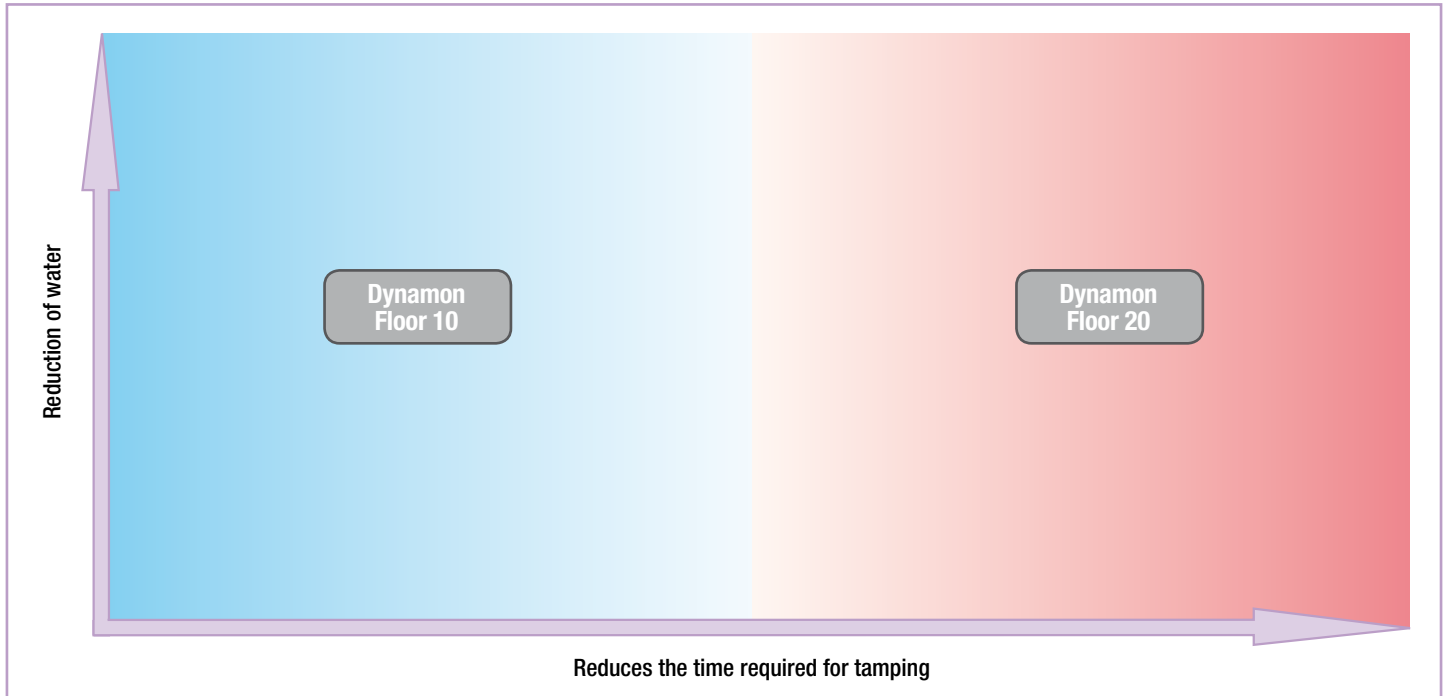


To solve the problems encountered when making large precast elements and to offer a significant contribution to the innovation and development of the sector, MAPEI has developed the **Dynamon NRG** range. The super-plasticisers in this range are calibrated to progressively and completely eliminate steam curing of cast concrete and, as a result, increase the durability and service life of reinforced concrete structures.

The performance achieved when using these super-plasticisers makes them particularly useful when mixing S.C.C., in that they guarantee high slump of the mix without the negative effects of excessive stickiness in the cementitious matrix.

PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Dynamon NRG 1010</b> Super-plasticising accelerator for extremely quick demoulding operations (6-8 hours) without steam curing	WINTER	0.5-1.5%	1.05 ± 0.02
<b>Dynamon NRG 1012</b> Super-plasticising accelerator for quick demoulding operations (16-18 hours) without steam curing	FOR USE ALL YEAR ROUND	0.5-1.5%	1.06 ± 0.02
<b>Dynamon NRG 1014</b> Super-plasticising accelerator operations (16-18 hours) without steam curing and viscousing agent for SCC	FOR USE ALL YEAR ROUND	0.5-1.5%	1.05 ± 0.02
<b>Dynamon NRG 1020</b> Ultra high-efficiency super-plasticising accelerator for extremely quick moulding operations (6-8 hours) without steam curing	FOR USE ALL YEAR ROUND	0.5-1.5%	1.07 ± 0.02
<b>Dynamon NRG 1022</b> Super-plasticising with excellent maintenance of workability and quick demoulding without steam curing	SUMMER	0.5-1.5%	1.06 ± 0.02

# Multi-purpose super-plasticisers for industrial floors



**Dynamon Floor** is a range of MAPEI multi-purpose super-plasticisers, specifically developed as a solution to numerous problems encountered when casting and finishing off concrete industrial floors.

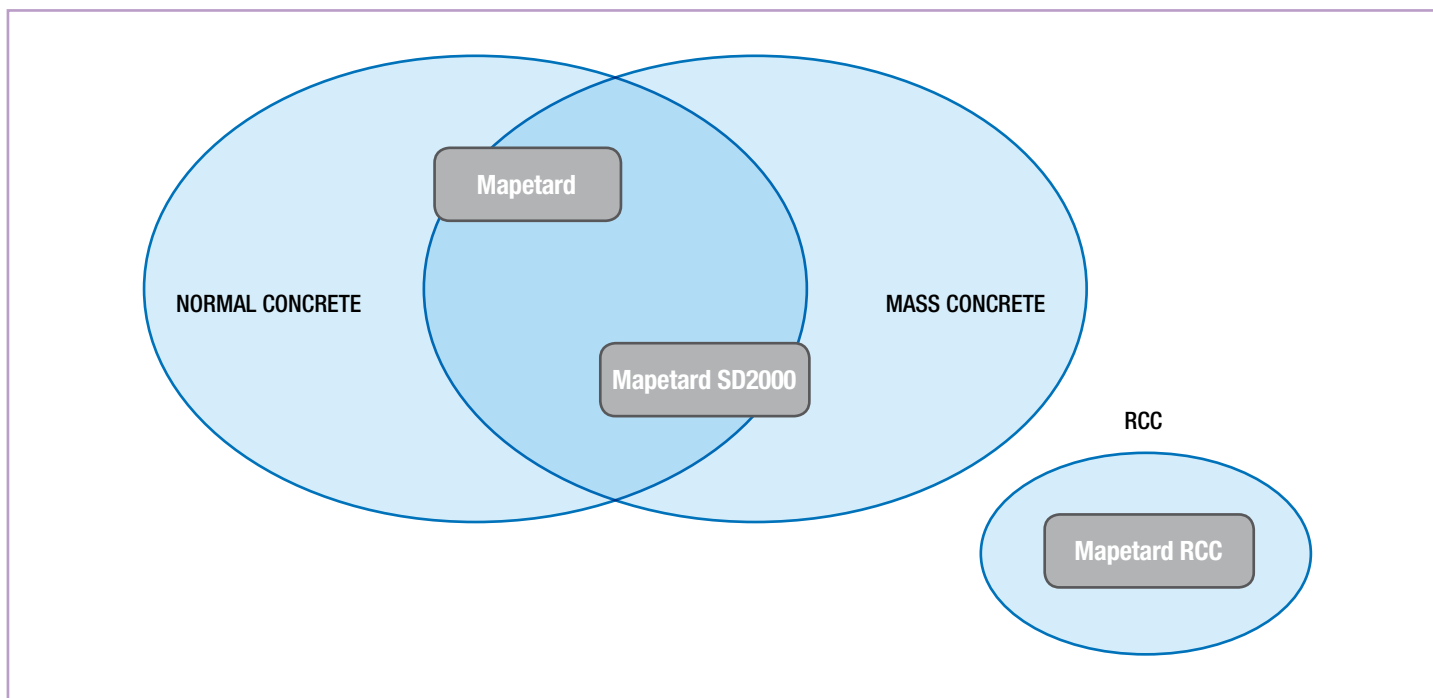
The products in the **Dynamon Floor** range have been developed to optimise the workability time of concrete and finishing operations on site in a variety of operating conditions and at different temperatures.

Apart from being used in concrete for normal flooring, the products in the **Dynamon Floor** range are also a component of the **Mapecrete System** for industrial flooring without expansion joints, and may be used in combination with the products from the **Mapecfibre** range to make fibre-reinforced concrete.

PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Dynamon Floor 10</b> High-efficiency, super-plasticising setting accelerator for internal and external floors at low temperatures	WINTER	0.8-2.0%	1.28 ± 0.03
<b>Dynamon Floor 20</b> Super-plasticising setting accelerator for internal and external floors in hot weather	SUMMER	0.8-2.0%	1.10 ± 0.03



# Setting and hardening retardants



**Mapetard** is MAPEI's range of retardant admixtures specifically developed to control setting and hardening times and the amount of heat generated during hydration of concrete.

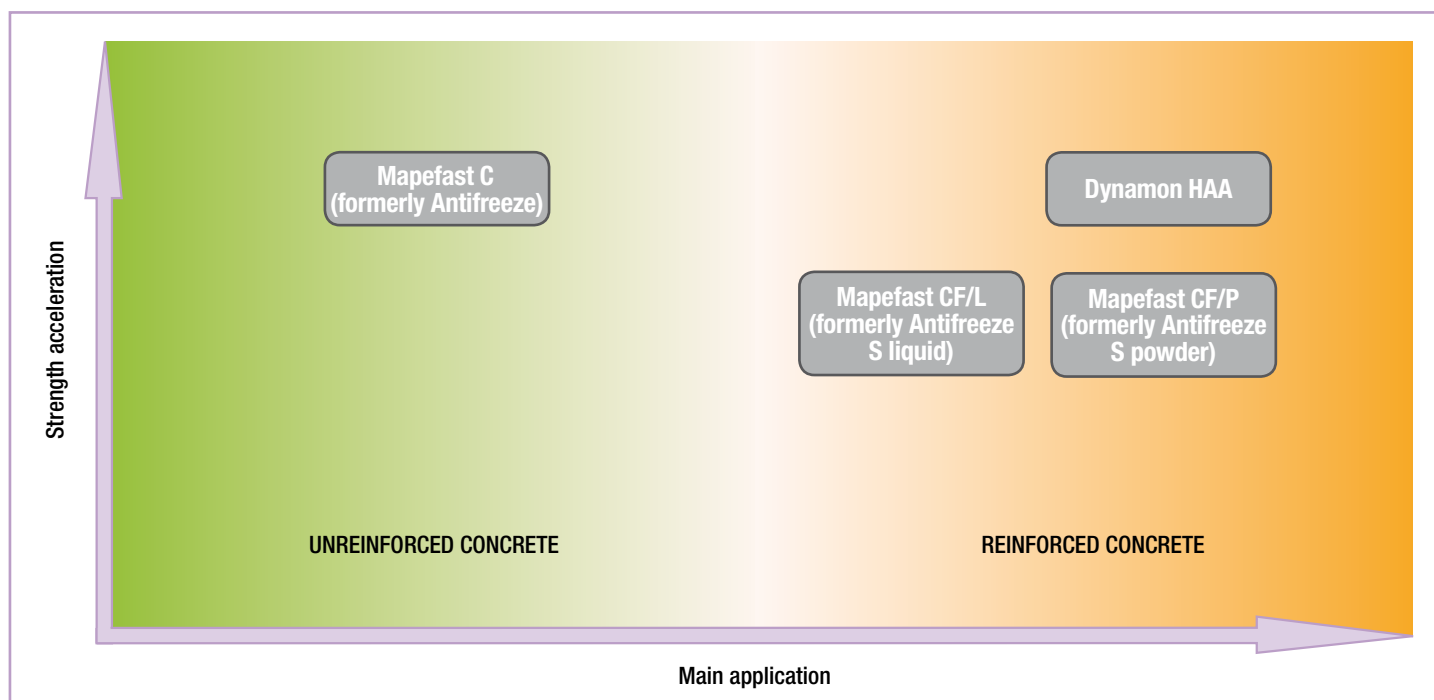
The products in the **Mapetard** range allow the setting times of concrete to be regulated to encourage extended workability and lower the amount of heat generated during hydration, particularly in mass concrete.

The ability to control setting times means that large volumes of concrete can be cast without having to form construction joints for second pours, fundamental when casting RCC (Roller Compacted Concrete).

By modulating the dose of the products from this range, masonry mortar can be mixed in a cement truck with setting times of 48-72 hours (weekend mortar).

PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Mapetard</b> Retardant with a slight plasticising effect	FOR USE ALL YEAR ROUND	0.2-0.5%	1.08 ± 0.02
<b>Mapetard SD2000</b> High efficiency retardant	FOR USE ALL YEAR ROUND	0.1-2.0%	1.11 ± 0.03
<b>Mapetard RCC</b> Retardant and setting-inhibiting admixture with a plasticising effect	FOR USE ALL YEAR ROUND	1.0-6.0 l/m <sup>3</sup>	1.25 ± 0.03

# Setting and hardening accelerators



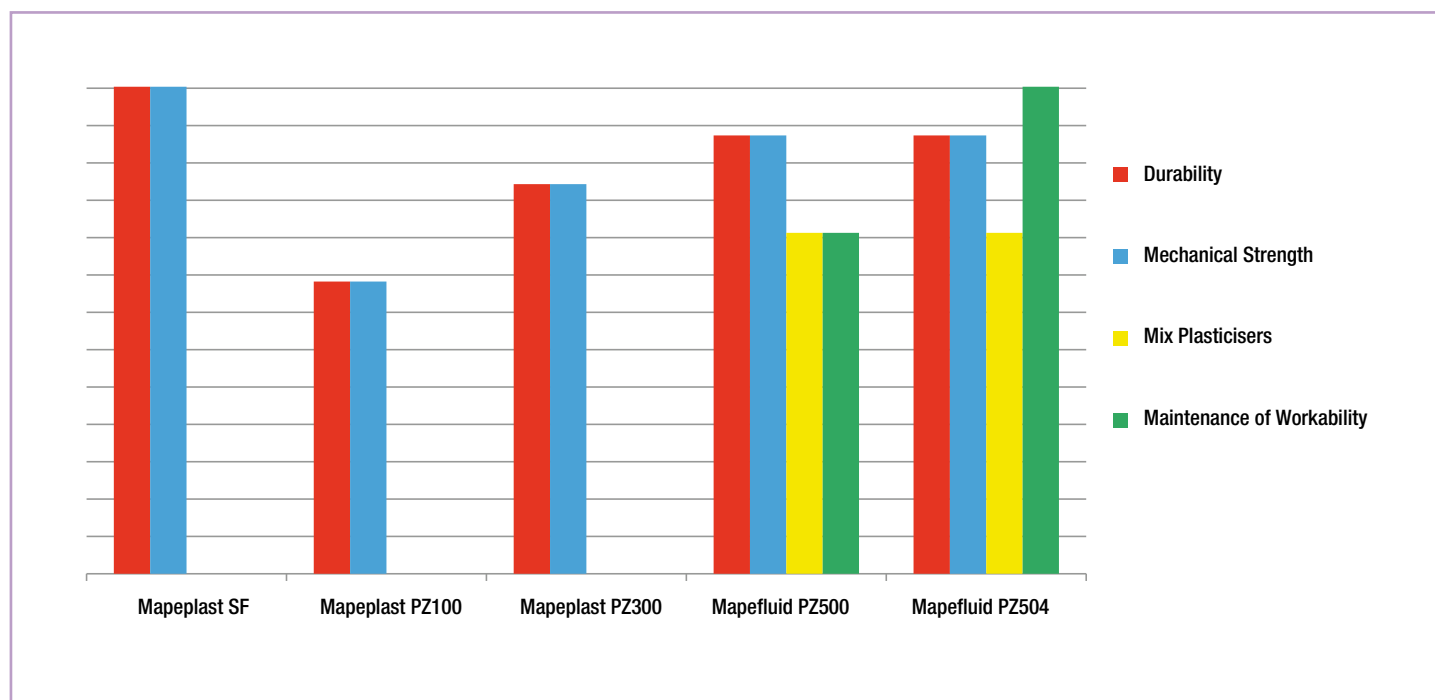
**MAPEI proposes a complete range of setting and hardening accelerating admixtures for both reinforced and unreinforced concrete.**

The products in this range have been specifically developed to make the stripping of formwork from precast structures easier and to prevent the water used to mix for fresh concrete cast in particularly cold climates from freezing.

The various products in this range means that the most suitable solution may be chosen for both reinforced and unreinforced concrete (CHLORIDE-FREE products).

PRODUCT / DESCRIPTION	MAIN APPLICATION	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Dynamon HAA</b> Chloride-free hardening accelerator to increase mechanical strength during stripping operations	Precast - Site use	1.0-3.0%	1.30 ± 0.03
<b>Mapefast CF/L (formerly Antifreeze S liquid)</b> Chloride-free liquid hardening accelerator to make concrete at low temperatures	Ready Mix - Site use	0.75-1.5%	1.30 ± 0.03
<b>Mapefast CF/P (formerly Antifreeze S powder)</b> Chloride-free powdered hardening accelerator to make concrete at low temperatures	Ready Mix - Site use	1.0-2.0%	
<b>Mapefast C (formerly Antifreeze)</b> Setting accelerator with chlorides for unreinforced concrete and mortar	Ready Mix - Site use	1.0-3.0%	1.35 ± 0.03

# Pozzolanic action admixture

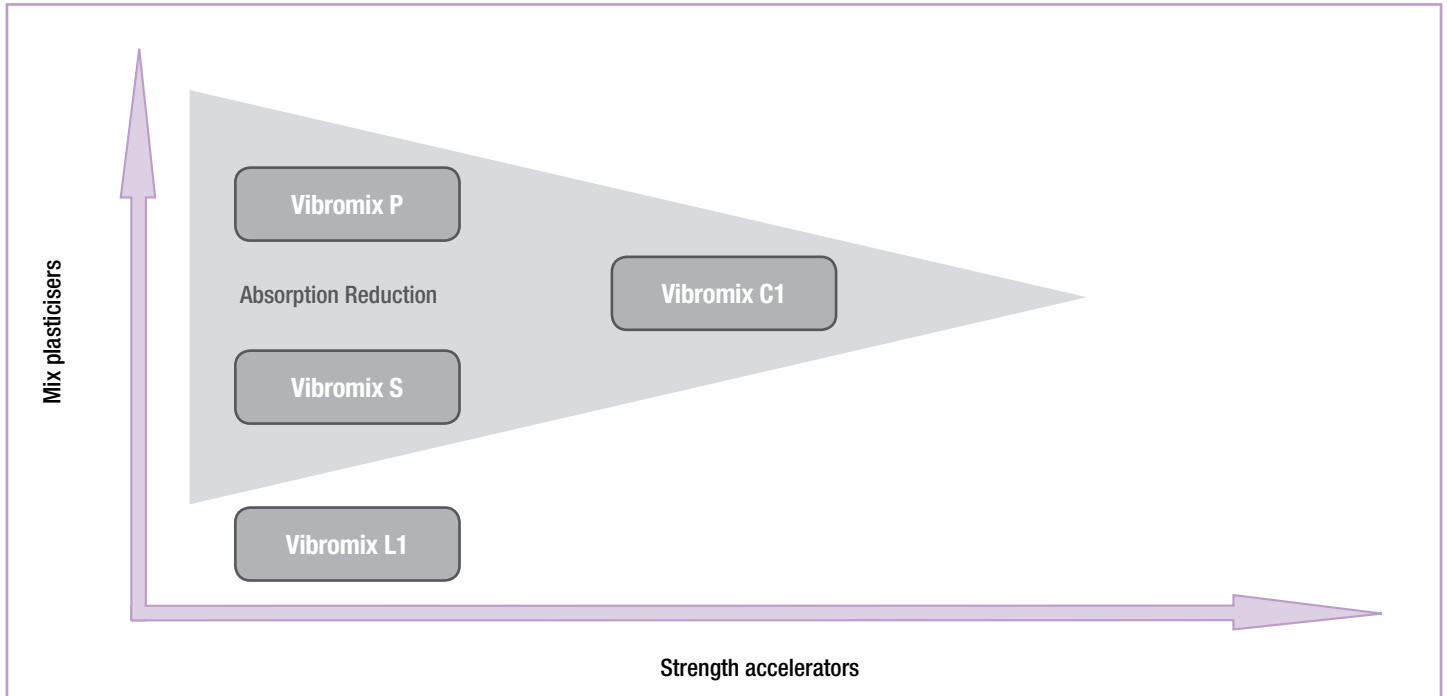


The products in the **Mapeplast SF/PZ** and **Mapefluid PZ** ranges are powdered admixtures with a high level of pozzolanic activity made from special components. The **Mapefluid PZ** range of products contains special admixtures that allow the water/cement ratio to be reduced and maintain excellent workability.

The products in the **Mapeplast SF/PZ** and **Mapefluid PZ** ranges are used to make waterproof concrete with very high mechanical strength and resistance to chemicals, thanks to the pozzolanic activity of the admixtures which react with the hydration products of the cement and form a much more compact crystalline structure than in normal concrete.

PRODUCT / DESCRIPTION	MAIN APPLICATION	RECOMMENDED DOSAGE
<b>Mapeplast SF</b> Silica Fume-based pozzolanic-activity powder component	Ready Mix - Site use - Precast	5.0-10.0 kg/m <sup>3</sup>
<b>Mapeplast PZ100</b> Micronized pozzolanic-activity powder admixture	Ready Mix - Site use	50-150 kg/m <sup>3</sup>
<b>Mapeplast PZ300</b> Micronized pozzolanic-activity powder admixture	Ready Mix - Site use	50-250 kg/m <sup>3</sup>
<b>Mapefluid PZ500</b> Pozzolanic-activity neutral super-plasticising powder for high-quality concrete. Made from Silica Fume	Ready Mix - Site use	20-60 kg/m <sup>3</sup>
<b>Mapefluid PZ504</b> Pozzolanic-activity super-plasticising retardant powder for high-quality concrete. Made from Silica Fume	Ready Mix - Site use	20-60 kg/m <sup>3</sup>

# Plasticisers for vibro-compression and extrusion



**Vibromix** is MAPEI's range of admixtures specifically developed to solve the problems encountered when making lightweight precast elements. The various products in the **Vibromix** range are specifically formulated according to their final use, and are used to improve the characteristics of various concrete elements.

The **Vibromix** range includes a number of admixtures which increase the plasticity of no-slump consistency mixes, significantly increase the level of hydration of the cement and accelerate the development of strength after short curing cycles, enabling elements to be handled more quickly, the absorption of water to be reduced and progressively and totally eliminate the formation of efflorescence.

PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Vibromix L1</b> Plasticiser	FOR USE ALL YEAR ROUND	0.2-0.8%	1.20 ± 0.03
<b>Vibromix C1</b> High-quality plasticising hardening accelerator	FOR USE ALL YEAR ROUND	0.2-0.8%	1.03 ± 0.02
<b>Vibromix P</b> High-efficiency plasticiser for extrusion	FOR USE ALL YEAR ROUND	0.2-0.8%	1.02 ± 0.02
<b>Vibromix S</b> High-efficiency water-repellent plasticiser for elements with no water absorption and no efflorescence	FOR USE ALL YEAR ROUND	0.2-1.2%	1.03 ± 0.02

# Air-entraining and foaming agents

The products in the **Mapeair** range are air-entraining and foaming admixtures which make concrete resistant to freeze/thaw cycles and reduce its density.

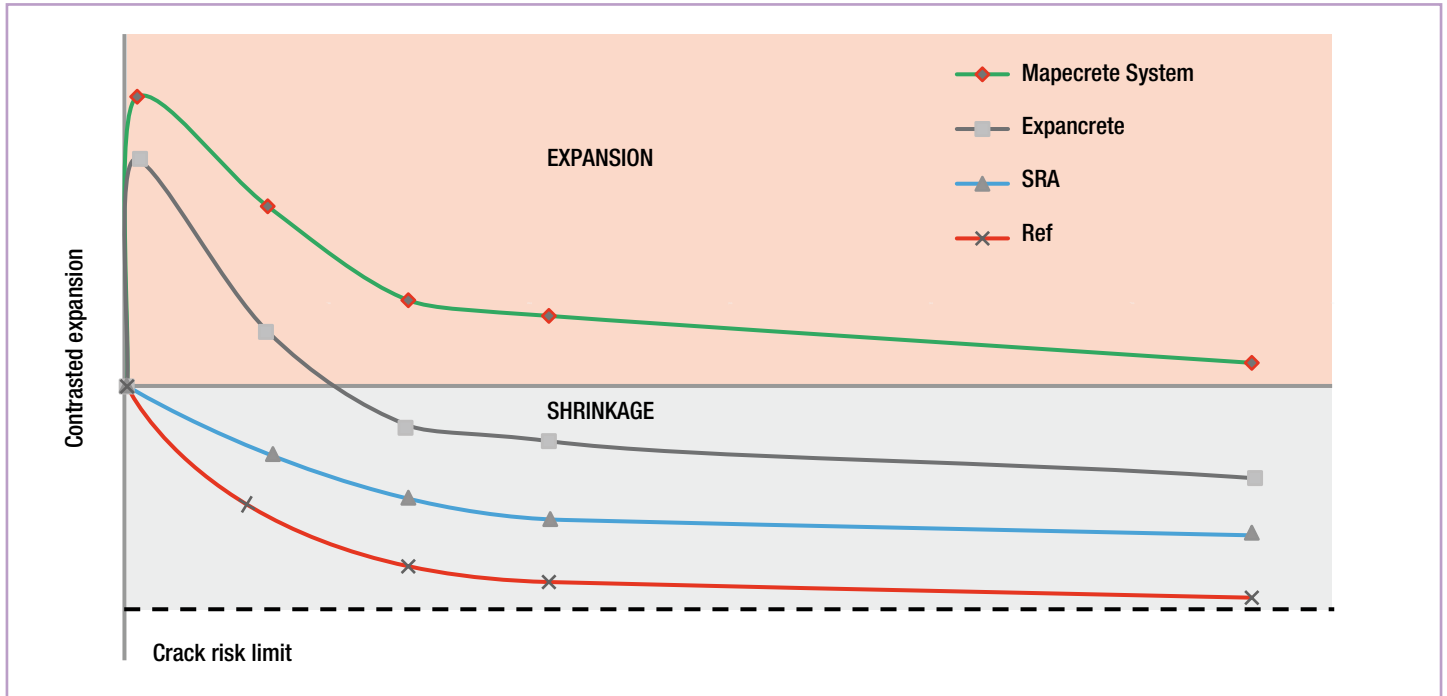
The products in the **Mapeair** range allow a sufficient quantity of micro air bubbles with a constant size at the right spacing to form in the concrete to guarantee its resistance to freeze/thaw cycles.

The air-entraining admixtures in the **Mapeair AE** may be used in combination with retardants from the **Mapetard** range to produce pumped masonry mortar.

The foaming agents from the **Mapeair LA** range have the capacity to hold a high quantity of air in the concrete so that it has very low density, prevents the finer particles from floating to the surface, and makes the pumping of lightweight concrete and/or concrete with a low fine sand content easier, including over long distances.

PRODUCT / DESCRIPTION	MAIN APPLICATION	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Mapeair AE 1</b> <b>(formerly Mapeplast PT1)</b> Air-entraining admixture for concrete resistant to freeze/thaw cycles and lightweight mortar	Ready Mix - Site use	0.03-0.3%	1.02 ± 0.02
<b>Mapeair AE 2</b> <b>(formerly Mapeplast PT2)</b> Air-entraining admixture for concrete resistant to freeze/thaw cycles and lightweight mortar	Ready Mix - Site use	0.02-0.3%	1.02 ± 0.02
<b>Mapeair AE 10</b> Air-entraining compound for concrete resistant to freeze/thaw cycles	Ready Mix - Site use	0.4-0.8%	1.01 ± 0.02
<b>Mapeair AE 20</b> Air-entraining compound for concrete resistant to freeze/thaw cycles	Ready Mix - Site use	0.2-0.8%	1.01 ± 0.02
<b>Mapeair LA/L</b> <b>(formerly Mapeplast LA Liquid)</b> Foaming agent and pumping aid for concrete and lightweight mortar. Ideal for cellular concrete	Ready Mix - Site use	0.8-1.2 l/m <sup>3</sup>	1.14 ± 0.03
<b>Mapeair LA/P</b> <b>(formerly Mapeplast LA Powder)</b> Foaming agent and pumping aid for concrete and lightweight mortar. Ideal for fluid filling mixes	Ready Mix - Site use	0.5 kg/m <sup>3</sup>	

# Shrinkage reducing admixtures (SRA)



**Expancrete** and the products from the **Mapecrete SRA** range are, respectively, expanding agents and shrinkage reducing admixtures. The use of these products allows high dimensional stability concrete and mortar to be mixed with no cracking from plastic shrinkage.

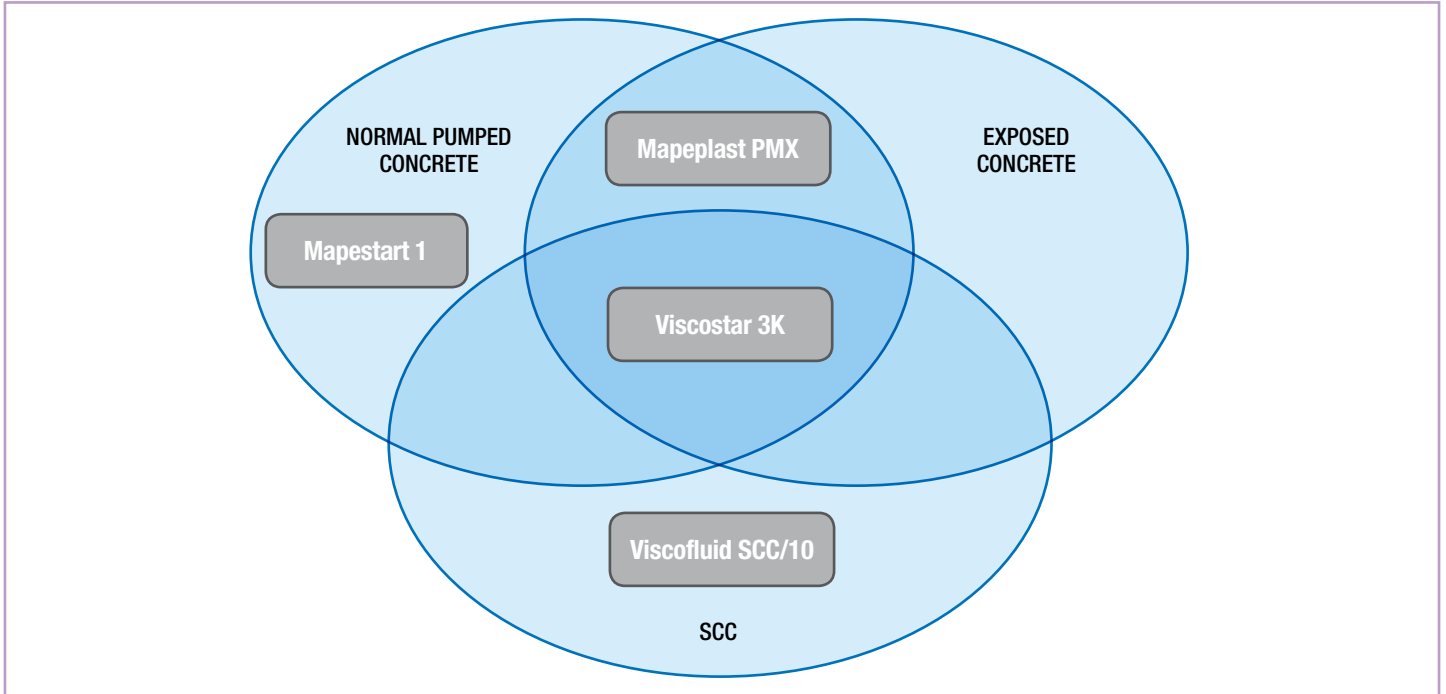
**Expancrete** allows the concrete to expand during the hardening phase which, if contrasted correctly, considerably reduces the build up of stresses caused by hygrometric shrinkage.

The admixtures from the **Mapecrete SRA** range considerably reduce hygrometric shrinkage, whether there is opposing reinforcement or not, by acting mainly at the water-hydration crystals interface of the cement.

Apart from being used in normal concrete, **Expancrete** and **Mapecrete SRA 25** are also as integrators in the **Mapecrete System** to build structures without contraction joints.

PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Expancrete</b> Powdered expansion agent for controlled-shrinkage concrete	FOR USE ALL YEAR ROUND	5.0-8.0%	
<b>Mapecrete SRA</b> Admixture to reduce hydraulic shrinkage and the formation of cracks for compensated-shrinkage mortar and concrete	FOR USE ALL YEAR ROUND	1.0-2.0%	0.91 ± 0.02
<b>Mapecrete SRA 25</b> Admixture to reduce hydraulic shrinkage and the formation of cracks for compensated-shrinkage concrete and mortar and seamless flooring	FOR USE ALL YEAR ROUND	1.0-2.0%	0.99 ± 0.02
<b>Expanfluid</b> Powdered expansion agent for injected slurry	FOR USE ALL YEAR ROUND	3.0-6.0%	

# Viscosity modifying admixtures



The viscosifying agents from the MAPEI range are specifically formulated to facilitate the pumping of concrete with a low fine particles content or with crushed aggregates, and to improve the rheological properties of S.C.C. These products are particularly recommended to facilitate the pumping of normal concrete with a low fine sand content, with coarse sand and/or with a low cement content, including over long distances. The use of MAPEI viscosifying agents for the production of S.C.C. improves the rheological properties of the mix, considerably reduces bleeding and segregation and allows the amount of mineral fillers such as limestone and fly-ash to be reduced.

PRODUCT / DESCRIPTION	APPLICATION	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Mapeplast PMX</b> Pumping aid for concrete with no fine particles and lean conglomerates	Ready Mix - Precast	0.2-0.5%	1.00 ± 0.02
<b>Viscofluid SCC/10</b> Viscosising admixture for the production of self-compacting concrete (SCC)	Ready Mix - Precast	1.0-2.0%	1.02 ± 0.02
<b>Viscostar 3K</b> Multi-purpose viscosising admixture for the production of self-compacting concrete without filler material	Ready Mix - Precast	0.3-2.5 l/m <sup>3</sup>	1.01 ± 0.02
<b>Mapestart 1</b> Powdered admixture to help at the start of pumping from mixer trucks and concrete pumps	Ready Mix	Refer to the technical data sheet	–

# Form-release agents

PROPERTIES	MAPEFORM ECO 91	MAPEFORM ECO 61	MAPEFORM ECO 31	MAPEFORM ECO OIL	DMA 1000
Horizontal metal formwork	☞☞☞☞☞	☞☞☞	☞☞☞☞☞	☞☞☞☞☞	–
Vertical metal formwork	☞☞☞	☞☞	☞☞☞☞☞	☞☞☞☞☞	–
Traditional wooden formwork	–	–	–	–	☞☞☞☞☞
Non-absorbent wooden formwork	☞☞☞	☞☞	☞☞☞	☞☞☞☞	☞☞☞☞
Plastic formwork	☞☞☞☞	☞☞☞	☞☞☞☞	☞☞☞☞	☞☞
Corrosion inhibitor for metal formwork	☞☞☞☞	☞☞☞	☞☞☞☞	☞☞☞☞	–
Exposed surface	☞☞☞☞☞☞	☞☞☞☞☞☞	☞☞☞☞☞☞	☞☞☞☞	☞☞☞
Resistance to steam curing cycles	☞☞☞☞	☞☞☞	☞☞☞☞☞	☞☞☞☞☞	–

The form-release agents from the **Mapeform Eco** and **DMA** ranges have been specifically developed for the precast industry and for use on site. Selecting the most suitable product and applying the product correctly gives you the best results in terms of the finish of the elements and protection for the formwork.

The ecological products from the **Mapeform Eco** range give the best finish when horizontal and vertical formwork are used, combined with an optimum yield of the form-release agent.

**Form Release Agent DMA 1000** guarantees excellent yield on all types of formwork (planks, panels, etc.), combined with its ease of use under all site conditions.

PRODUCT / DESCRIPTION	SEASON	YIELD	DENSITY (g/cm <sup>3</sup> )
<b>Mapeform Eco 91</b> Chemical-action vegetable oil-based form-release agent in water emulsion to improve exposed surfaces	FOR USE ALL YEAR ROUND	15-25 g/m <sup>2</sup>	0.95 ± 0.01
<b>Mapeform Eco 61</b> Chemical-action vegetable oil-based form-release agent in water emulsion to improve exposed surfaces	FOR USE ALL YEAR ROUND	15-25 g/m <sup>2</sup>	0.96 ± 0.01
<b>Mapeform Eco 31</b> Chemical-action vegetable oil-based form-release agent in water emulsion to improve exposed surfaces	FOR USE ALL YEAR ROUND	15-25 g/m <sup>2</sup>	0.96 ± 0.01
<b>Mapeform Eco Oil</b> Multi-purpose vegetable oil-based stripping agent in water emulsion for metal and plastic formwork. Suitable for steam curing	FOR USE ALL YEAR ROUND	10-25 g/m <sup>2</sup>	0.91 ± 0.01
<b>Form Release Agent DMA 1000</b> Emulsifiable form-release agent for all types of wooden formwork	FOR USE ALL YEAR ROUND	10-30 g/m <sup>2</sup>	0.89 ± 0.01



# Structural and anti-shrinkage fibres

**Mapefibre CN 54**



**Mapefibre ST 24**



**Mapefibre ST 42**



**Mapefibre NS12 / Mapefibre NS18**



The polymer fibres for concrete from the **Mapefibre** range are available in two types: structural and non-structural. The products in this range have been specifically developed to meet all structural strengthening requirements for concrete, and to prevent and contain cracking phenomenon caused by plastic shrinkage in concrete.

**Mapefibre ST** and **Mapefibre CN** are particularly suitable for the structural strengthening of concrete, in that they may be used to partially or completely substitute secondary steel reinforcement.

**Mapefibre NS** fibres are dimensioned specifically to prevent and control cracking phenomenon caused by plastic shrinkage in concrete.

PRODUCT / DESCRIPTION	RECOMMENDED DOSAGE
<p><b>Mapefibre ST 24</b> 24 mm structural polymeric fibres used as a substitute for reinforcement mesh in traditional floors</p>	1-7 kg/m <sup>3</sup>
<p><b>Mapefibre ST 42</b> 42 mm structural polymeric fibres used as a substitute for reinforcement mesh in traditional floors</p>	1-7 kg/m <sup>3</sup>
<p><b>Mapefibre CN 54</b> 54 mm structural polymeric fibres used as a substitute for reinforcement mesh in traditional flooring and shotcrete</p>	1-7 kg/m <sup>3</sup>
<p><b>Mapefibre NS 12</b> Anti-shrinkage polypropylene fibres to reduce cracking</p>	0.4-0.8 kg/m <sup>3</sup>
<p><b>Mapefibre NS 18</b> Anti-shrinkage polypropylene fibres to reduce cracking</p>	0.4-0.8 kg/m <sup>3</sup>

## Water-repelling agents for concrete with low water absorption and no efflorescence

PRODUCT / DESCRIPTION	MAIN APPLICATION	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Idrocrete DM</b> Water-repellent compound for concrete and mortar which do not absorb water and without efflorescence	Ready Mix - Site use - Precast	0.2-1.0%	1.03 ± 0.02
<b>Idrocrete S</b> Water-repellent compound for concrete and mortar which do not absorb water and without efflorescence	Ready Mix - Site use - Precast	0.2-1.2%	1.03 ± 0.02

## Admixtures to improve natural finishes

PRODUCT / DESCRIPTION	MAIN APPLICATION	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Mapeair Zero</b> Admixture used to improve the finish on exposed concrete, with the capacity to increase compressive strength	Ready Mix - Site use - Precast	0.1-1.0%	1.00 ± 0.02

## Admixtures for underwater casting

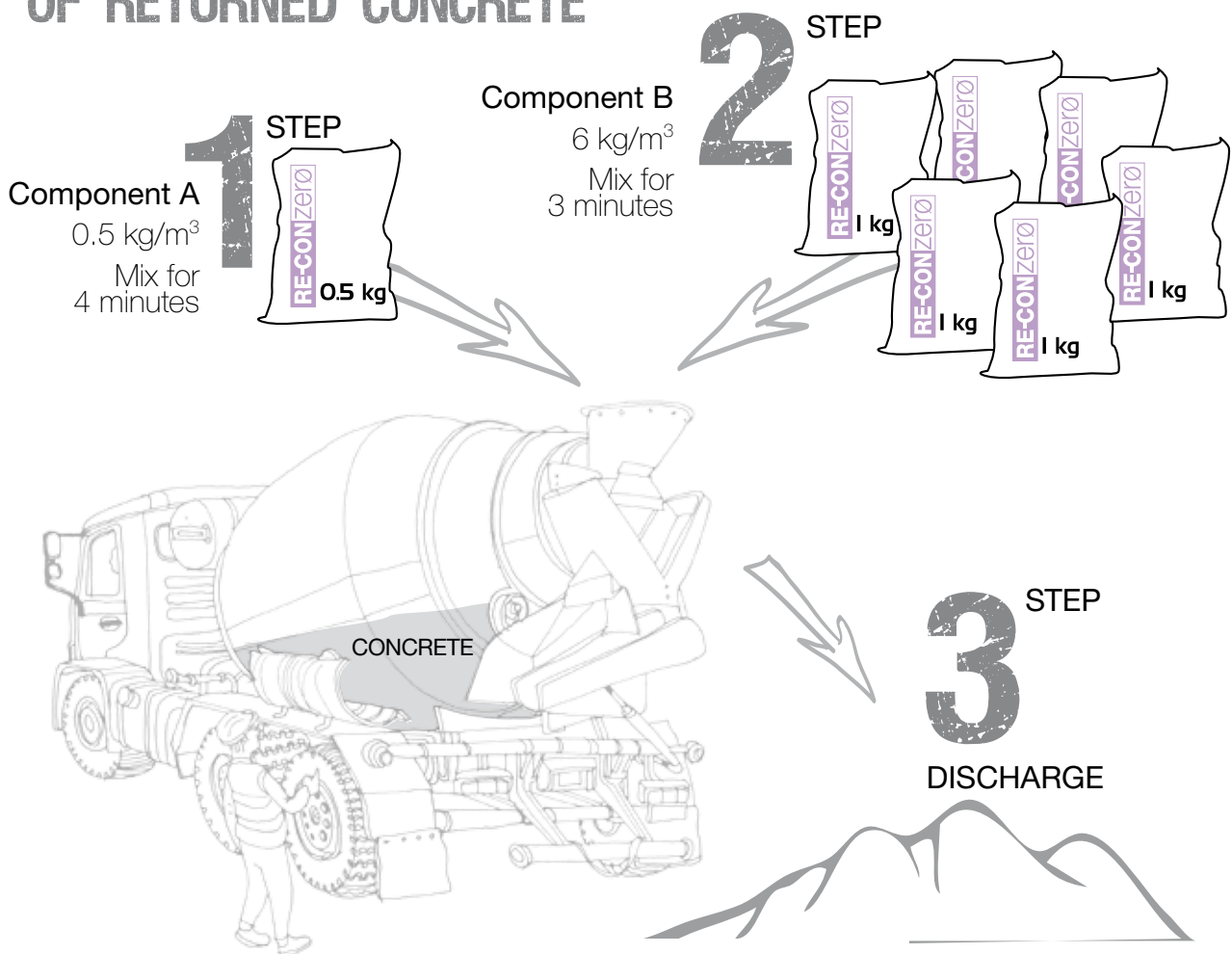
PRODUCT / DESCRIPTION	SEASON	RECOMMENDED DOSAGE
<b>Mapeplast UW</b> Cohesive admixture for anti-leaching underwater casts	FOR USE ALL YEAR ROUND	5-10 kg/m <sup>3</sup>

# Products for recycling and repair operations

for recycling water used for washing and cleaning cement mixers and cement trucks

PRODUCT / DESCRIPTION	MAIN APPLICATION	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<b>Mapeclean Recycler</b> Admixture to recycle water used for rinsing cement trucks	Ready Mix	0.1kg/100 l of water	0.87 ± 0.01
<b>Re-Con Zero</b> Two-component powdered product used to recover leftover concrete directly from mixer trucks	Ready Mix	<b>Comp A:</b> 0.5 kg/m <sup>3</sup> <b>Comp B:</b> 6.0 kg/m <sup>3</sup>	

## SUSTAINABLE RECOVERY OF RETURNED CONCRETE



Complete kit to treat 1 cubic metre of returned concrete:

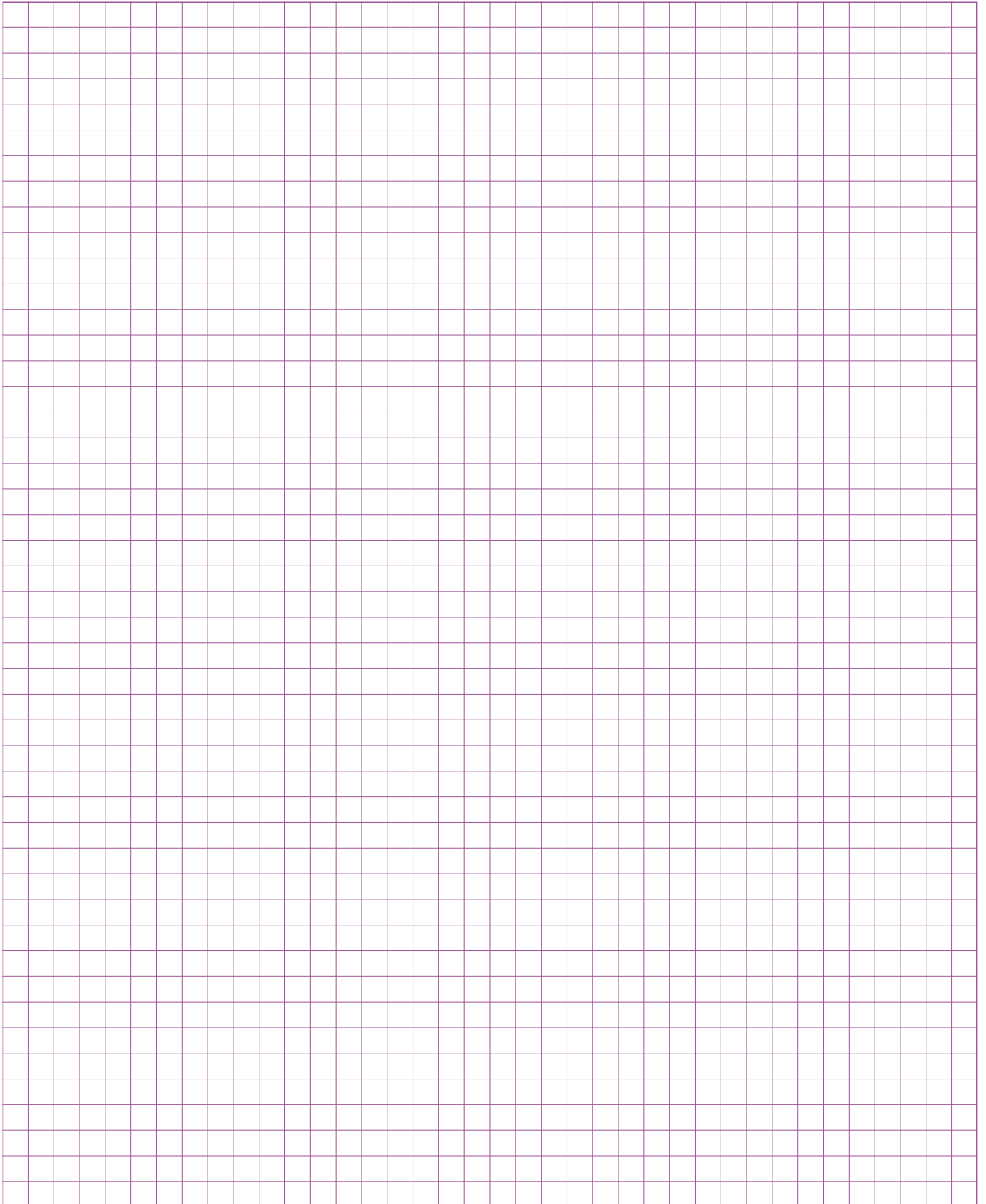
**RE-CON ZERØ** Component A: 1x0.5 kg water-soluble bag

**RE-CON ZERØ** Component B: 6x1 kg water-soluble bags

# Surface curing compounds

PRODUCT / DESCRIPTION	MAIN APPLICATION	RECOMMENDED DOSAGE	DENSITY (g/cm <sup>3</sup> )
<p><b>Mapecure E</b> Surface-film curing compound in water emulsion to protect the surface of concrete against rapid evaporation of the mixing water</p>	Precast - Site use	70-100 g/m <sup>2</sup>	0.94 ± 0.02
<p><b>Mapecure S</b> Solvent surface-film curing compound to protect the surface of concrete against rapid evaporation of the mixing water</p>	Precast - Site use	100-110 g/m <sup>2</sup>	0.91 ± 0.02
<p><b>Mapecure CA</b> Surface-film curing compound, which may be painted over, to protect the surface of concrete against rapid evaporation of the mixing water</p>	Precast - Site use	110-150 g/m <sup>2</sup>	0.98 ± 0.02

# Notes



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