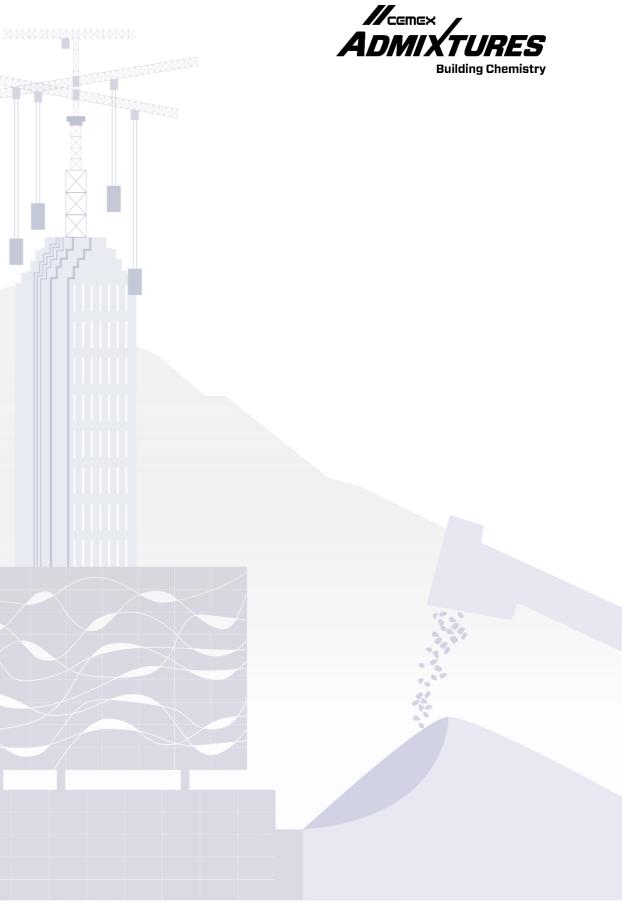




ADMIXTURES PORTFOLIO

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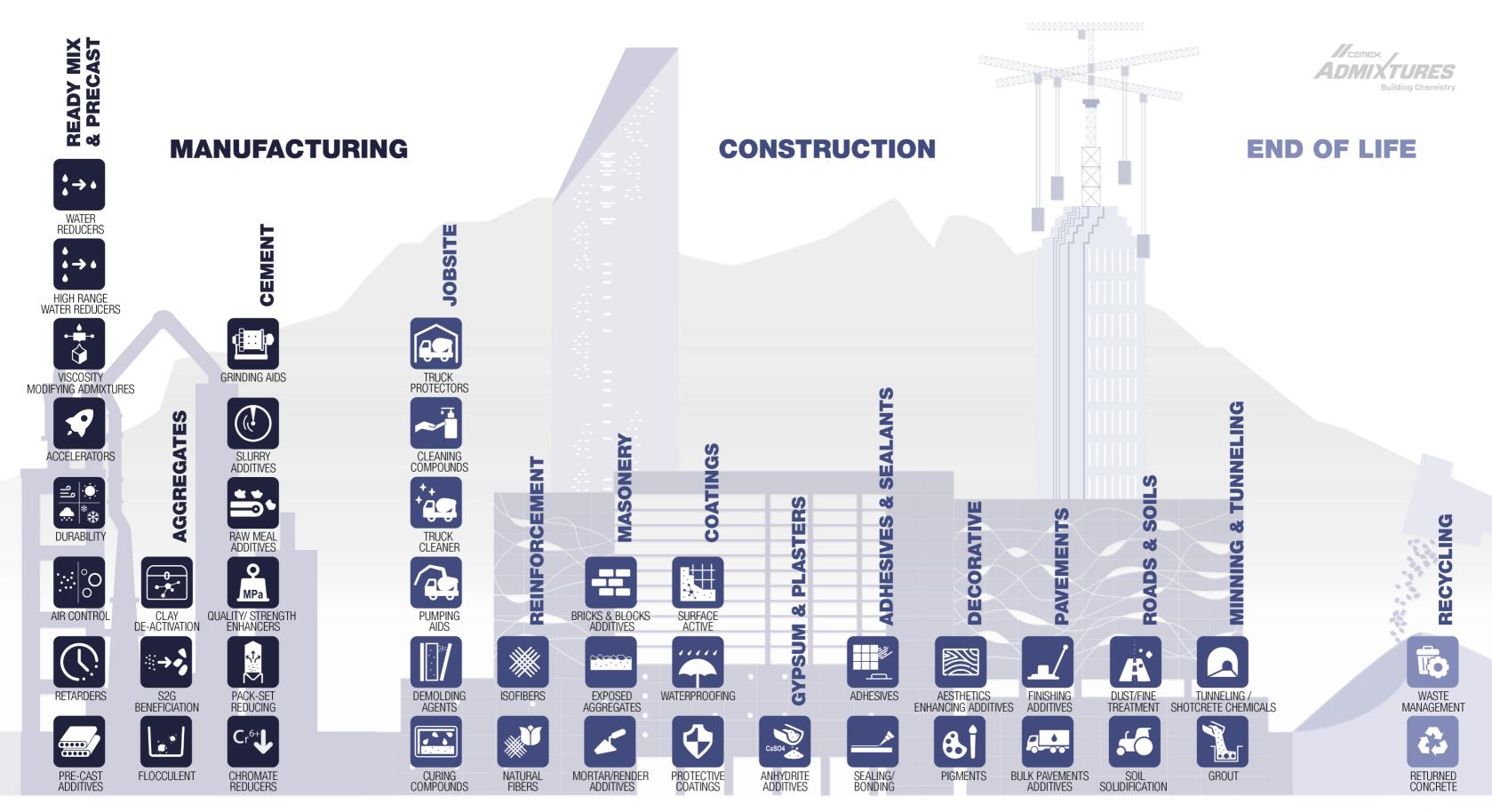




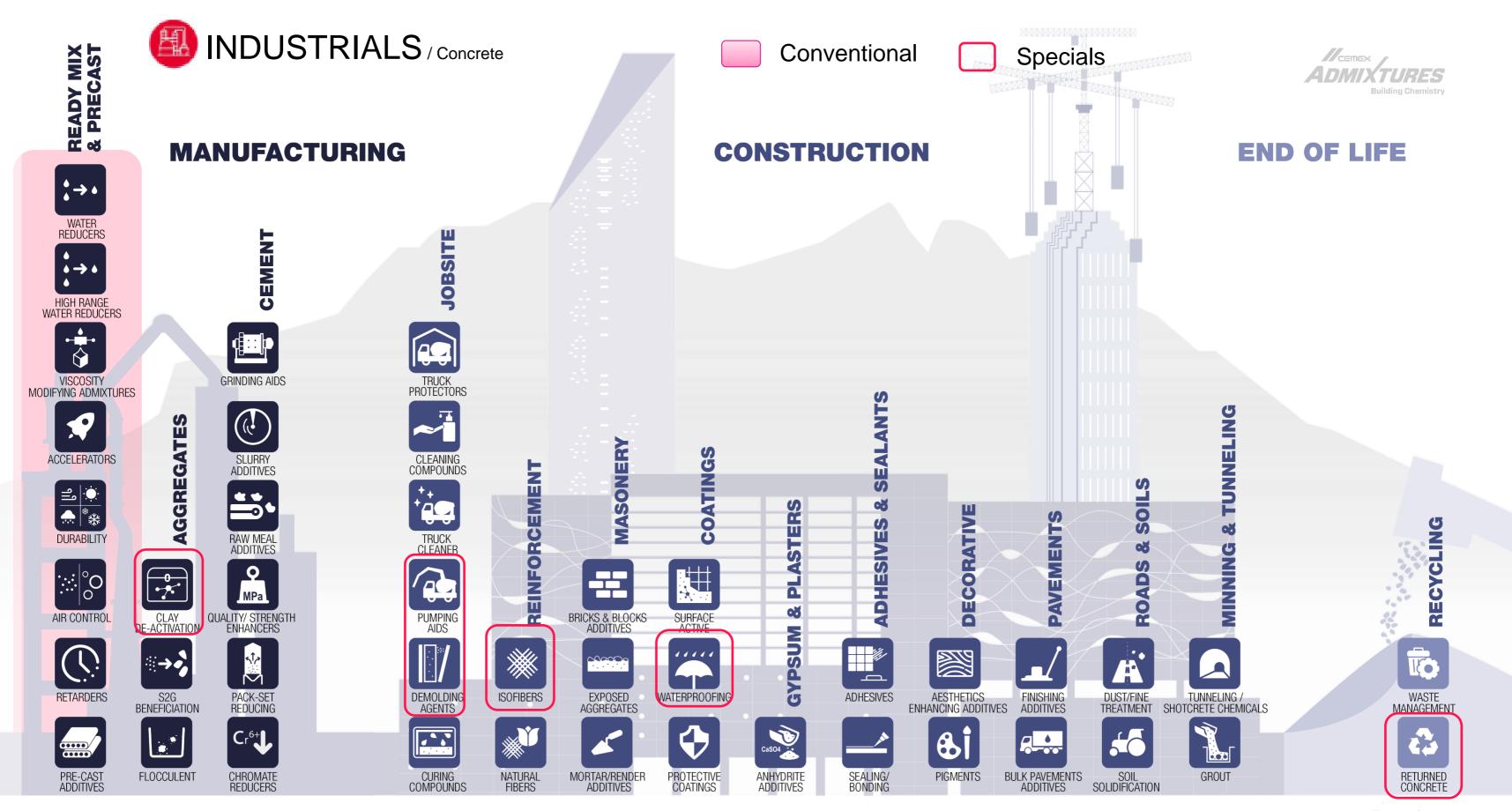




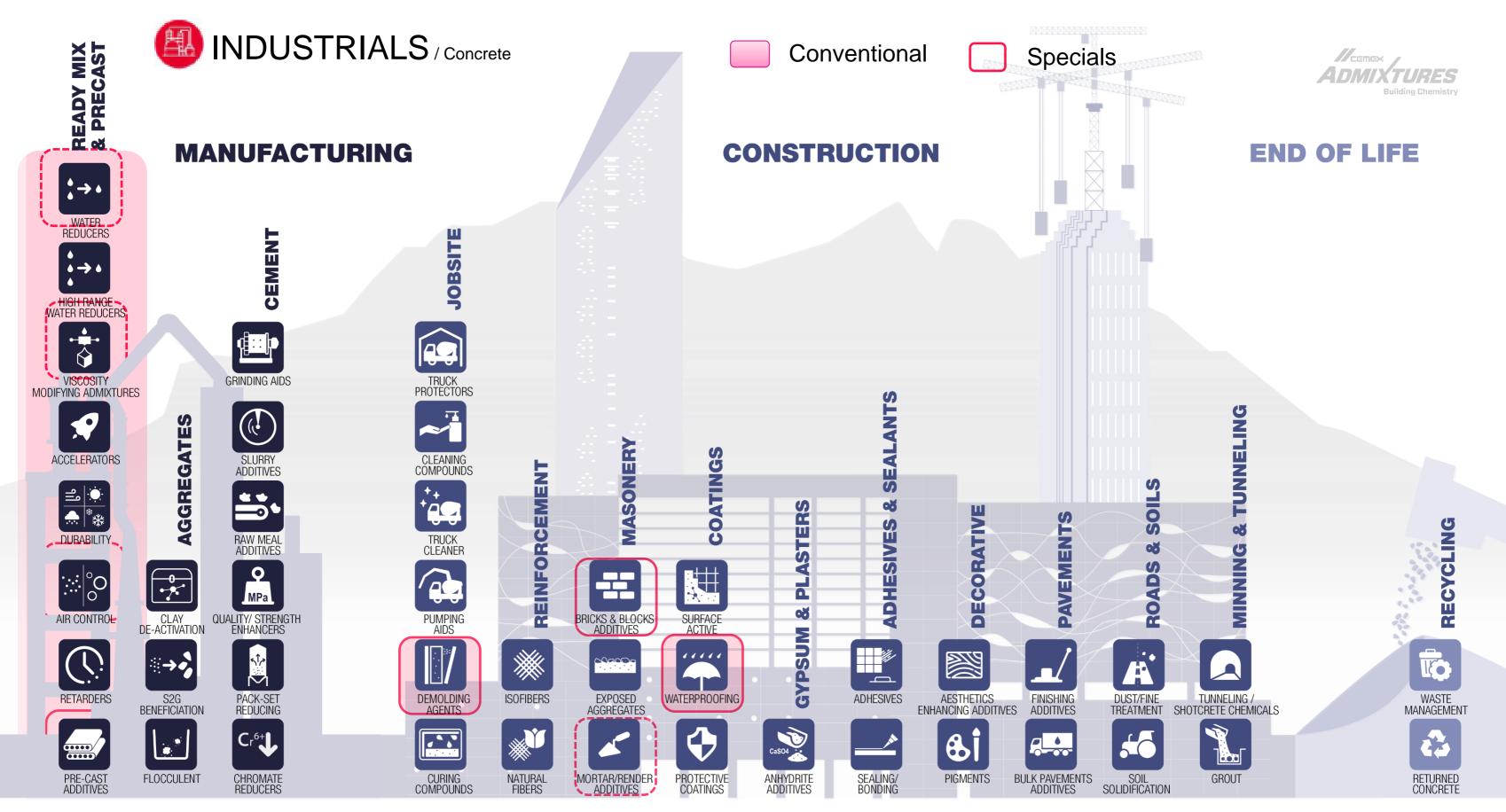




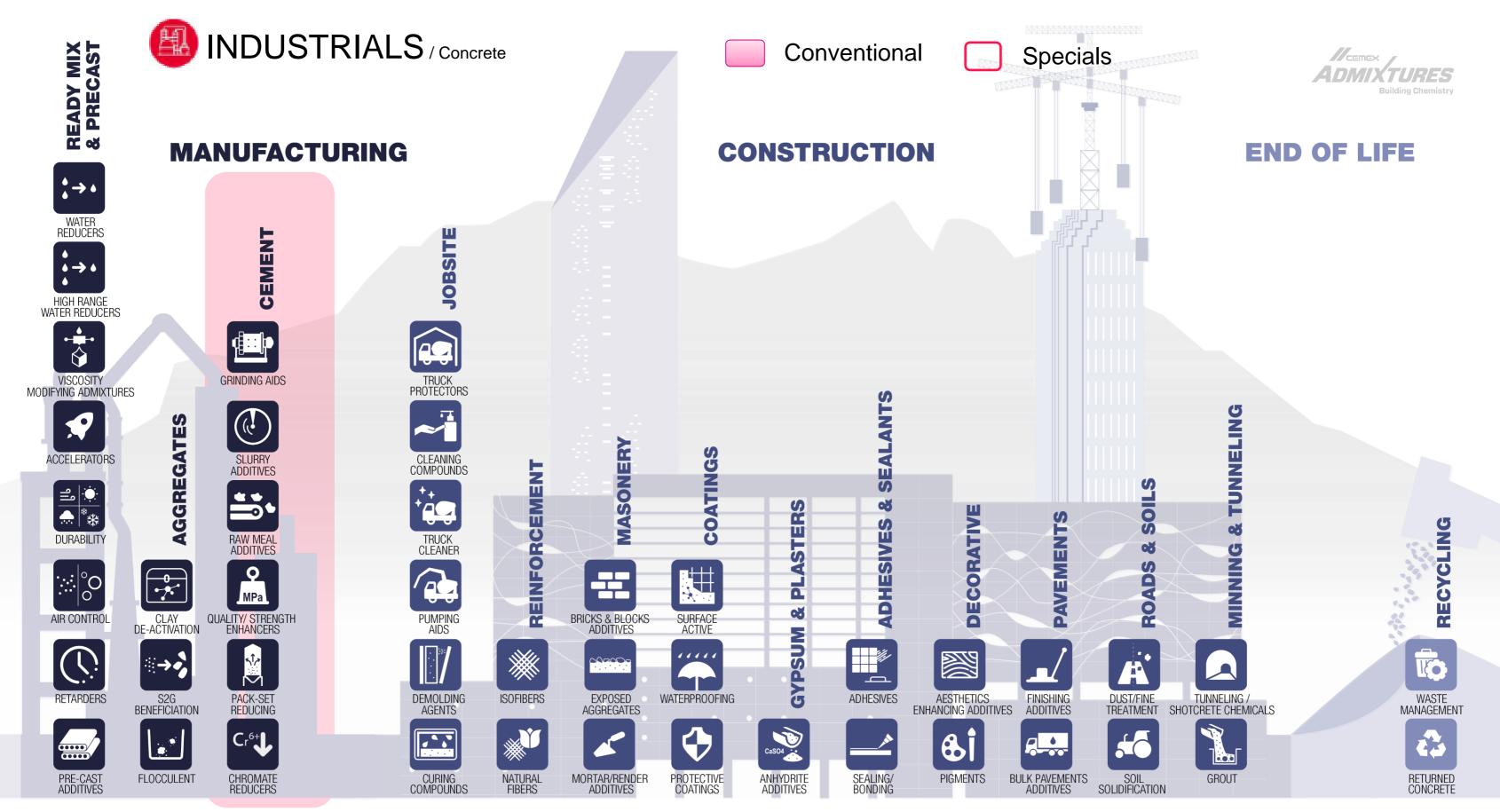




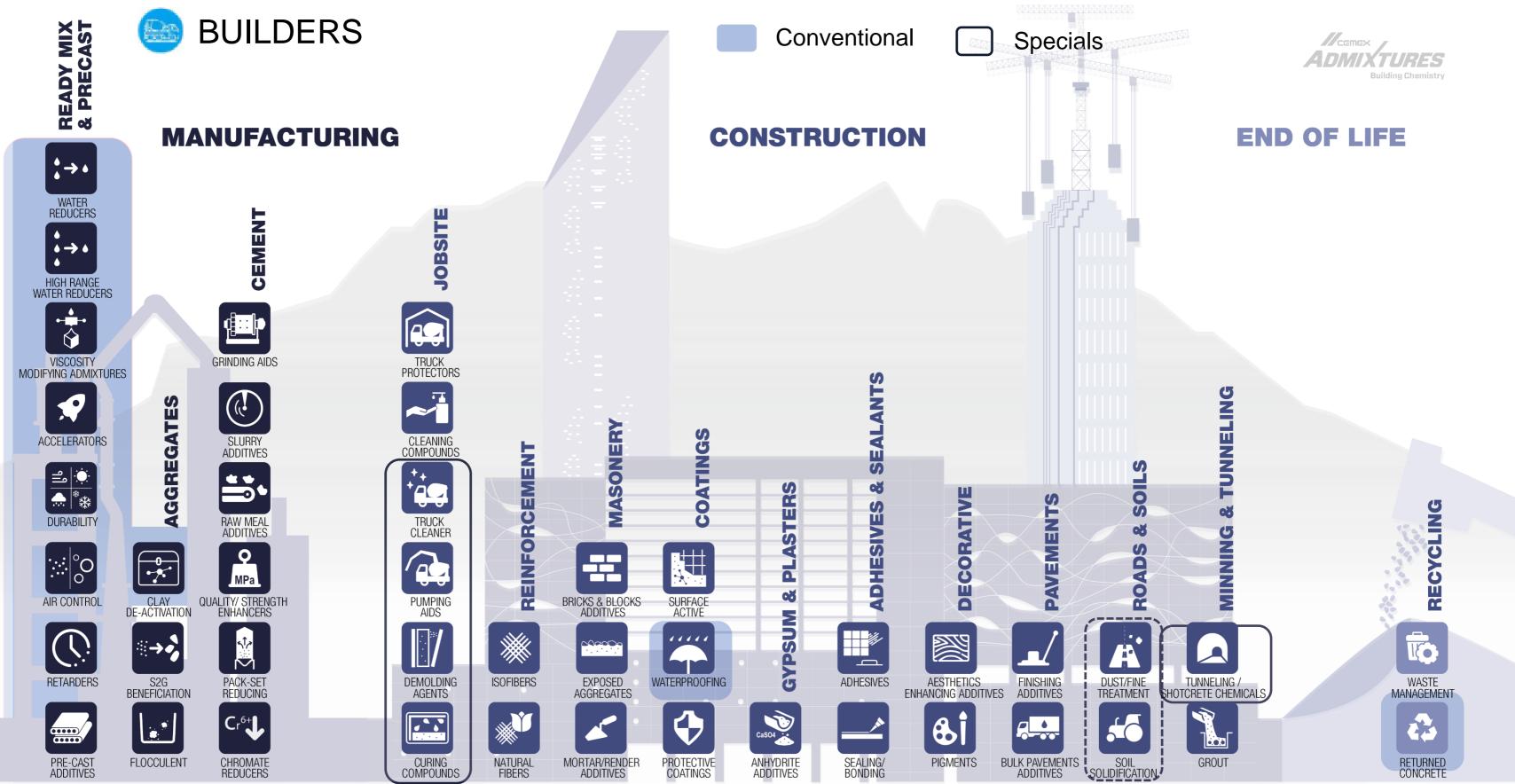
research & development



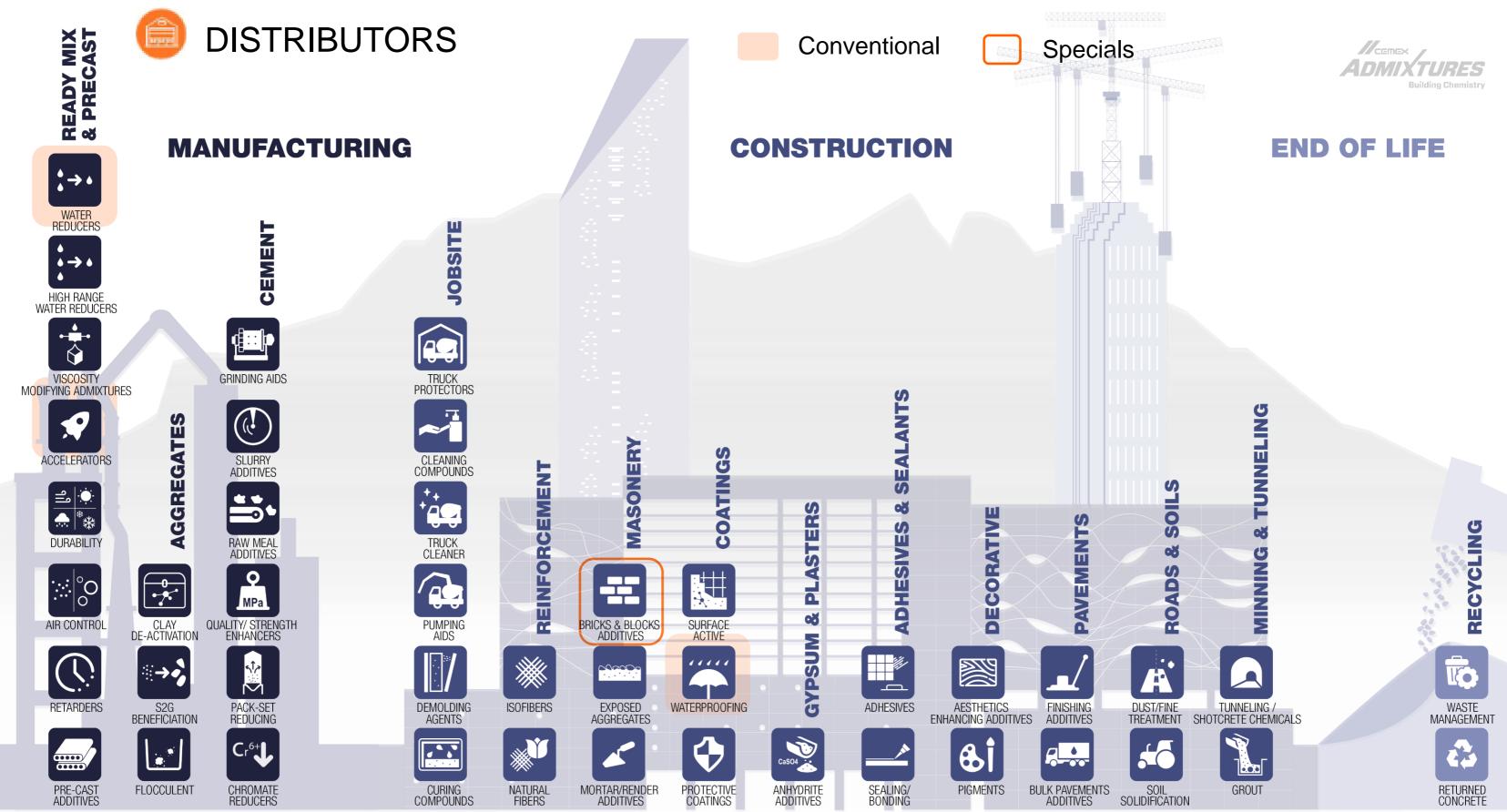




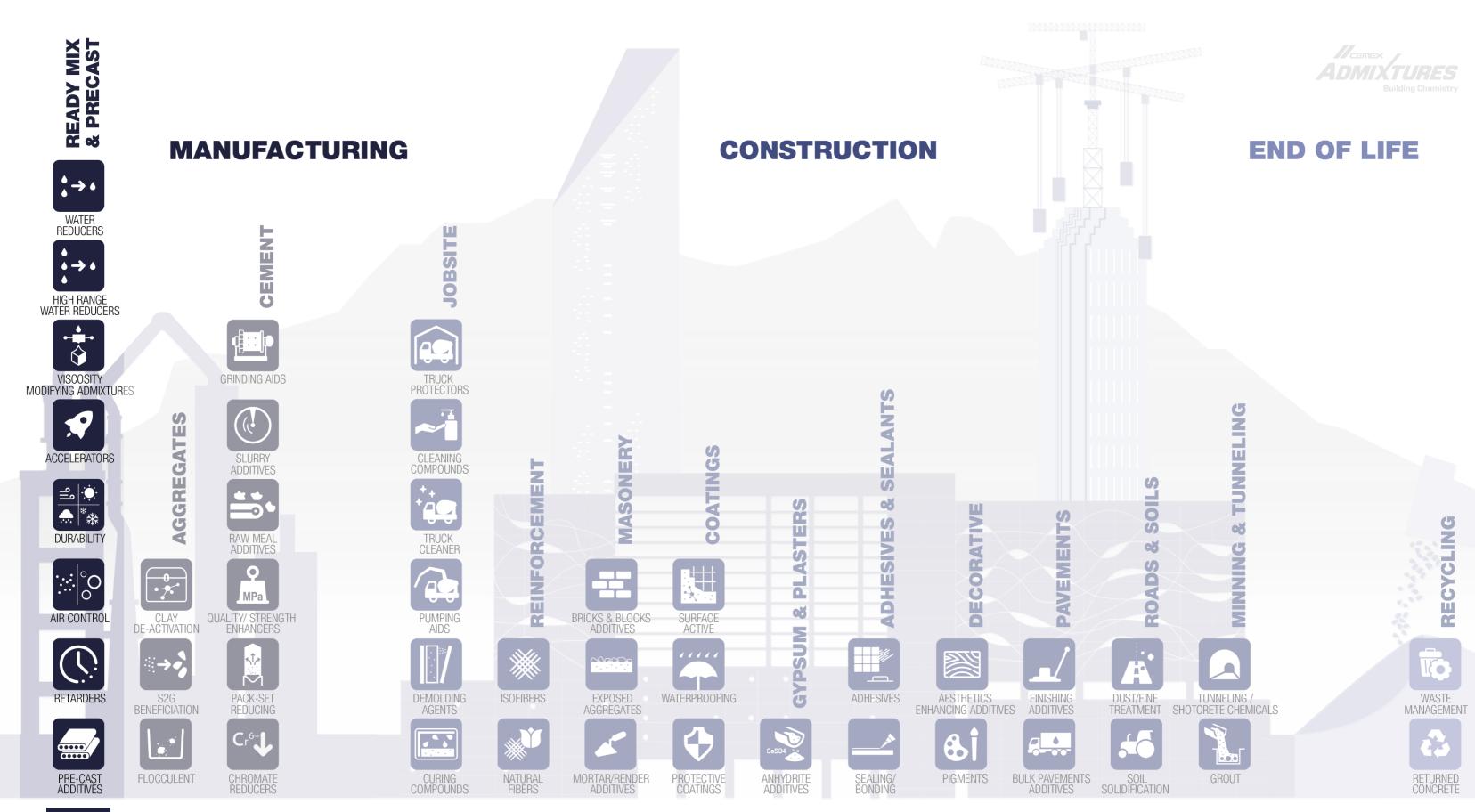














CEMEX

READY MIX & PRECAST

MANUFACTURING

Infinite possibilities to produce unique, high performing and durable materials.





Our robust water reducers allow to decrease the water to cement ratio and increase the strength of concrete with minimum effect on the other properties of concrete.

Providing RMX solutions to provide our concretes with long lasting performance and durability, and the latest innovations in internal curing technologies.

Specific set of formulated products joining the best-inclass PCE dispersant with highly effective strength enhancers for most efficient production process.



Our HRWR offers superior strength while maintaining good flowability, which makes it the ideal admixture for high-strength concrete and heavily reinforced concrete.

The VMA range enhances the stability and segregation resistance of concrete, which generates superior surface quality and finishing.

Our accelerators range allows for high early strength development while maintaining workability retention during transport and casting.

Solutions that provides the right amount and quality of air, for every specific needs and projects, while keeping the concrete production simple and accurate.

Complete set of admixtures enabling a full control of cement hydration to provide with the desired open time and hardening.

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WATER **REDUCERS**

Value Proposition

Our robust water reducers allow to decrease the water to cement ratio and increase the strength of concrete with minimum effect on the other properties of concrete.





All included formulation providing water reduction/retention and rheology control, without impacting early strength development

Challenge

Typical ready-mix concrete needs workability retention and water retention to ensure fresh quality of concrete



Differentiation

Robust and all-round products fitting for most of traditional applications



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Benefits

CHASE CENTER



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- CX USA, has supplies more than 170,000 cubic yards of concrete for the construction of the new Chase Center in San Francisco.
- The concrete was design using our proprietary admixture ISOFLOW 9650.

CUSTOMER BENEFITS WATER REDUCERS



CONSISTENCY Iow / SETTING short

ISOPLAST 157

Characteristics

ISOPLAST 157 is a water-reducing liquid admixture and plasticizer based on modified lignosulfonates, designed to be added to concrete in a fresh state in order to improve the workability and consistency in cold climates.

Effects

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- 5 12% water reduction
- Increases the workability retention of concrete
- Increase in mechanical strength thanks to the reduction of water
- Gives more time for concrete placement and finishing processes

CONSISTENCY medium / SETTING long

ISOPLAST 159

Characteristics

ISOPLAST 159 is a water-reducing liquid admixture and plasticizer based on modified lignosulfonates, designed to be added to concrete in a fresh state in order to improve the workability and consistency in warm climates.

Effects

- 5 12% water reduction
- Increases the workability retention of concrete
- Increase in mechanical strength thanks to the reduction of water
- Gives more time for concrete placement and finishing processes



CONSISTENCY low - medium - high

SETTING short - medium - long

CONSISTENCY medium / SETTING medium

ISOPLAST 1350

Characteristics

ISOPLAST 1350 is a water-reducing liquid admixture and plasticizer based on modified lignosulfonates, designed to be added to concrete in a fresh state in order to improve the workability and consistency in warm climates.

- 5 12% water reduction
- Increases the workability retention of concrete
- Increase in mechanical strength thanks to the reduction of water
- Gives more time for concrete placement and finishing processes



CUSTOMER BENEFITS WATER REDUCERS



CONSISTENCY Iow / SETTING Iong

ISOPLAST 2024

Characteristics

ISOPLAST 2024 is added to the readymix as a water reducer with strong retarding properties.

Effects

- Increases retention of workability
- Medium water reduction
- Medium development of compressive strengths

CONSISTENCY low / SETTING medium

ISOPLAST 2050

Characteristics

ISOPLAST 2050 is added to the readymix as a water reducer with retarding properties.

Effects

- Increases retention of workability
- Medium water reduction
- Medium development of compressive strengths



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CONSISTENCY low - medium - high

SETTING short - medium - long





HIGH RANGE WATER REDUCERS

 $\stackrel{\bullet}{\bullet} \rightarrow \bullet$

Value Proposition

Our HRWR offers superior strength while maintaining good flowability, which makes it the ideal admixture for highstrength concrete and heavily reinforced concrete.

READY MIX & PRECAST

MANUFACTURING



Tailor-made formulation that combines selected PCE for water reduction and workability retention up to 3h

Challenge

High strength concrete needed for special applications, where early strength should not be impaired, while higher fluidity is needed



Differentiation

Taking advantage of unique in-house polymer design and technology



CEMEX



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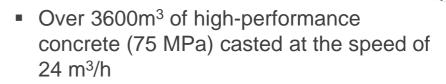
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Benefits

NAVAL CONSTRUCTION



 Several constrains such as low viscosity, long workability and high durability impose the use of the new generation of superplasticizer ISOFLOW 956 specially adapted to such conditions

CUSTOMER BENEFITS HIGH RANGE WATER REDUCERS



WORKABILITY high / EARLY STRENGTH medium



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ISOFLEX 7100

Characteristics

ISOFLEX 7100 is a high-range plasticizer based on polycarboxylateether with plasticizing effect and extended workability retention.

Effects

- High initial dispersion
- Conventional concrete with low slump loss
- Cement-bound material systems

WORKABILITY medium / EARLY STRENGTH high



Characteristics

ISOFLEX 7220 is a high-rangeplasticizer based on polycarboxylateether with a very strong plasticizing effect.

Effects

- High initial dispersion
- High performance and conventional concretes
- Cement-bound material systems

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WORKABILITY low - medium - high

EARLY STRENGTH low – medium - long

WORKABILITY high / EARLY STRENGTH high



Characteristics

ISOFLEX 7290 is a high-rangeplasticizer based on polycarboxylateether with a very strong plasticizing effect and extended workability retention.

- High initial dispersion
- High performance and conventional concrete with low slump loss
- Cement-bound material systems



BENEFITS FOR THE CLIENT WATER REDUCERS **HIGH RANGE**



MANAGEABILITY high / EARLY RESISTANCE high

ISOFLEX 5350

Characteristics

It is an admixture of the last technology based on polycarbocilates, designed for concrete requiring high resistance, durability and different levels of manageability.

Effects

- 15 25% of water reduction considering materials and the design conditions.
- Increases the mechanical resistance due to high water reduction.
- Provide manageability retention.
- Increases de concrete viscosity, high cohesiveness in the mix.

MANAGEABILITY medium / EARLY RESISTANCE high

ISOFLOW 7800

Characteristics

It is an admixture of the last technology based in polycarbocilates, designed for concretes requiring high resistance, durability and different levels of manageability. This admixture in conjunction with an optimum design works as a plastizicer and superplasticizer.

Effects

- 15 25% of water reduction considering materials and the design conditions.
- Increases the mechanical resistance due to high water reduction.
- Provide manageability retention.
- Increases de concrete viscosity, high cohesiveness in the mix.

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READY-MIX CONCRETE

MANAGEABILITY low - medium - high EARLY RESISTANCE low - medium - high







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WATER **REDUCERS HIGH** RANGE

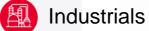
Value offer

They offer superior resistance and high flowability, making them ideal admixtures for high-strength and highly reinforced concrete.

READY-MIX CONCRETE PRODUCTION



CEMEX





Formulations based on selected polycarboxylates (PCE) for excellent water reduction

Challenge

High strength concrete for special applications, where the initial resistance is not affected, and a higher fluidity is desired.



Differentiation

Leveraging in-house designed polymers of the highest technology



- the region.



Benefits

MONTEGRANDE DIVERSION TUNNEL



 Largest infrastructure project of 2019. This water dam makes it possible to regulate and optimize the use of water flow for human consumption and prevent flooding in

Requirement of 12 MPa at 10h, using low heat of hydration cement, Isoflow 7509 and Isoplast 2024.





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CUSTOMER BENEFITS HIGH RANGE WATER REDUCERS



WORKABILITY high / EARLY STRENGTH high

ISOFLOW 751

Characteristics

ISOFLOW 751 is a high-range liquid water-reducing admixture of the latest technology based on polycarboxylates, developed for concretes that require high strength, durability and different levels of workability.

Effects

 $\stackrel{\bullet}{} \rightarrow \bullet$

- 15 25% water reduction taking into account materials and design conditions
- Increase in mechanical strength thanks
 to high water reduction
- Provides excellent workability retention
- Increases the viscosity of the concrete, greater cohesiveness in the mix

WORKABILITY high / EARLY STRENGTH high

ISOFLOW 8800

Characteristics

ISOFLOW 8800 is a high-range liquid water-reducing admixture of the latest technology based on polycarboxylates, developed for concretes that require high strength, durability and different levels of workability.

Effects

- 15 25% water reduction taking into account materials and design conditions
- Increase in mechanical strength thanks to high water reduction
- Provides excellent workability
 retention without affecting setting time

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WORKABILITY low - medium - high

EARLY STRENGTH low – medium - long

WORKABILITY medium / EARLY STRENGTH high

ISOFLOW 7800

Characteristics

ISOFLOW 7800 is a high-range liquid water-reducing admixture of the latest technology based on polycarboxylates, developed for concretes that require high strength, durability and different levels of workability. This admixture in an optimal design works as a plasticizer and superplasticizer

- 15 25% water reduction taking into account materials and design conditions
- Increase in mechanical strength thanks
 to high water reduction
- Increases the viscosity of the concrete, greater cohesiveness in the mix



CUSTOMER BENEFITS HIGH RANGE WATER REDUCERS



MANAGEABILITY medio / EARLY RESISTANCE medium

ISOFLOW 7509

Characteristics

ISOFLOW 7509 is added to the concrete mix to reduce the amount of water, reduce the amount of cement and improve the compressive strength.

Effects

- High range of water reduction ٠
- Decreases w/c ratio or promotes • cement reduction
- Increase the compressive strength ٠
- Helps with manageability retention

MANAGEABILITY high / EARLY RESISTANCE low

ISOFLOW 7660

Characteristics

ISOFLOW 7660 is added to the concrete mix to reduce the amount of water, reduce the amount of cement and improve the compressive strength.

Effects

- High range of water reduction
- Decreases w/c ratio or promotes cement reduction
- Increase the compressive strength

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MANAGEABILITY low – medium - high EARLY RESISTANCE low - medium - high









VISCOSITY MODIFYING ADMIXTURES

Value Proposition

The VMA range enhances the stability and segregation resistance of concrete, which generates superior surface quality and finishing.

READY MIX & PRECAST



Challenge

High performance concrete are more sensitive to risk of bleeding and/or segregations (dynamic or static)



Differentiation

Full compatibility with superplasticizer range





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Benefits

Stable concrete without negative impact on slump/flow and workability retention, as well as setting time / strength development

CULTURAL CENTER MEUDON-LA-FORÊT

- Architectonic self compacting concrete without surface bubble
- Specific Viscosity modifying agent ISOSTAB 5810 allows keeping cohesion without compromising high fluidity

CUSTOMER BENEFITS VISCOSITY MODIFYING ADMIXTURES



APPLICATION SCC / VISCOSITY Iow

ISOSTAB 6003

Characteristics

ISOSTAB 6003 is added to the ready-mix concrete to avoid segregation and to produce self compacted concrete.

Effects

- Strong stabilizing effect
- Improvement of water retention capacity
- Improvement of workability

APPLICATION anti-washout / VISCOSITY high

ISOLA ST-5

Characteristics

ISOLA ST-5 admixture is added to concrete during mixing in order to prevent segregation, bleeding of the concrete and the loss of fine material during construction processes under water.

Effects

- Provides stability and homogeneity
- Reduces bleeding of concrete
- Improves water retention
- Modifies the viscosity of concrete
- Significantly reduces the loss of fine material



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APPLICATION SCC - anti-washout - piles

VISCOSITY low - high





ACCELERATORS

Value Proposition

Our accelerators range allows for high early strength development while maintaining workability retention during transport and casting.





Control of setting time without impacting workability retention.

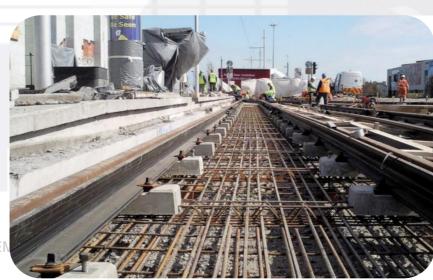
Challenge

Low strength development in winter/cold environment and/or special requirements for repair works



Differentiation

Range of non-chloride technologies as well as our Promptis admixtures enabling long workability with high early strength





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Benefits

LUAS TRAM LINE

- The project request in less than 36hours the casting of 500m³ and the reopening the tram line for the traffic
- Even with an external temperature of 5°C, the solution ISOXEL 877 over performs and reaches 4MPa after 4hours

CUSTOMER BENEFITS **ACCELERATORS**



CHLORIDE BASED yes - no STRENGTH PROFILE early - late - both

CHLORIDE BASE yes / STRENGTH PROFILE early / TYPE hardening

ISOXEL 436

Characteristics

ISOXEL 436 is a liquid additive based on nitrates and chlorides that accelerates the setting time and promotes the development of early strengths in concretes.

Effects

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- Accelerates the setting time •
- Allows a demoulding in less time and at the same time the reuse of molds
- It is designed to be able to finish construction processes in less time
- Increases mechanical strength at early ages

CHLORIDE BASE no / STRENGTH PROFILE early / TYPE hardening

ISOXEL 7600

Characteristics

ISOXEL 7600 is a liquid salt-based admixture that accelerates setting time and promotes the development of early strengths in concrete. This admixture does not contain chlorides.

Effects

- Accelerates the setting time
- Allows a demoulding in less time and at the same time the reuse of molds
- It is designed to be able to finish construction processes in less time
- Increases mechanical strength at early • ages
- Chloride free admixture. Will not promote corrosion of reinforcing steel Copyright © 2021 CEMEX II



TYPE hardening - setting

CHLORIDE BASE no / STRENGTH PROFILE early / TYPE setting

ISOXEL 9210

Characteristics

ISOXEL 9210 is an accelerator admixture in liquid state that reduces setting times and accelerates the development of compressive strength. Designed for shotcrete applications. Admixture free of alkalis, silicates and chlorides.

- Accelerates the setting time (very fast times)
- High compressive strength at early ages
- Alkali free product

CUSTOMER BENEFITS ACCELERATORS



CHLORIDE BASED yes - no

STRENGTH PROFILE early - late - both

CHLORIDE BASE yes / STRENGTH PROFILE early / TYPE hardening



Characteristics

ISOXEL 4300 is a hardening accelerating admixture based on chloride, which is formulated to increase early strengths of concrete.

Effects

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- Increases of early strengths
- Reduces setting time. •
- · Helps to unmold in less time

CHLORIDE BASE no / STRENGTH PROFILE early / TYPE hardeniing

ISOXEL 7500

Characteristics

ISOXEL 7500 is a hardening accelerating admixture based on salts (free of chloride), which is specially formulated to increase early strengths of concrete.

Effects

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- Increases of early strengths
- Reduces setting time. •
- Does not induce corrosion of reinforcing steel





TYPE hardening - setting







DURABILITY

Value Proposition

Providing RMX solutions to provide our concretes with long lasting performance and durability, and the latest innovations in internal curing technologies.





Challenge

Concrete can be damaged by external environment, during its curing and life cycle (drying, shrinkage, freeze and thaw, ...)



Differentiation

Internal curing solution together with bulk admixtures that can be used during batching of concrete and avoid any on-site failures of application



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Benefits

Long term durability can be guarantee by using ready-mix bulk admixtures that will reduce bad practices on job site

CHAPEL SANTA MARÍA DE LOS CABALLEROS

- The architect was looking for Pearl Grey architectural concrete textured
- The use of self curing solution, ISOKHORE 1900 allowed the perfect finishing without any risk of microcracking even in the hard weather environment

CUSTOMER BENEFITS DURABILITY



EXTERNAL chemical

EXTERNAL freeze/thaw – waterproofing – internal curing – chemical (sulfate, anti-rust)

INTERNAL shrinkage reducer

ISOKHORE 2500

Characteristics

ISOKHORE 2500 is a liquid admixture formulated to reduce drying shrinkage and cracking caused by plastic shrinkage. The admixture acts directly at the moment of cement hydration, reducing the capillary tension of the concrete water, avoiding contraction.

Effects

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- Minimal volumetric changes
- More compact structures
- Reduces cracks caused by plastic shrinkage
- More accurate floor castings
- More precise fit to mold contours

ISOINHIBIT 5400

Characteristics

ISOINHIBIT 5400 is a liquid admixture that inhibits the corrosion of reinforcing steel in concrete structures, it is composed of nitrate salts. This admixture does not contain chlorides, however by its nature it also has an accelerating effect.

Effects

- Chemically inhibits the corrosion process of reinforcing steel
- Increases the useful life of reinforced concrete structures
- Has an accelerating effect that reduces
 the requirement of accelerators

Copyright © 2021 CEMEX IN admixtures in cold, weather. All rights reserved



INTERNAL shrinkage reducer – ASR (alkali silica reaction) – self-healing

EXTERNAL waterproofing

ISOFUGE 5190

Characteristics

ISOFUGE 5190 is an admixture composed of hydrophobic materials that help to reduce the permeability of surfaces. It is an admixture that is applied directly to the mortar or concrete mix.

- Reduces water permeability even in very humid environments
- Efflorescence prevention
- Does not affect the workability of concrete or mortar
- Solvent free
- Increases the durability of surfaces.

CUSTOMER BENEFITS DURABILITY



EXTERNAL freeze/thaw - waterproofing - internal curing - chemical (sulfate, anti-rust)

EXTERNAL waterproofing



Characteristics

ISOFUGE 220 is a silane-based water repellent agent with strong reduction of capillary absorption.

Effects

- Water absorption of capillary pores of • concrete or screed is reduced
- Increased barrier effect •

EXTERNAL waterproofing

ISOFUGE 5020

Characteristics

ISOFUGE 5020 is a silane-based water repellent agent with reduction of capillary absorption.

Effects

- Water absorption of capillary pores of concrete or screed is reduced
- Increased barrier effect



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INTERNAL shrinkage reducer - ASR (alkali silica

EXTERNAL waterproofing

ISOFUGE 9350

Characteristics

ISOFUGE 9350 is added to concrete to concentrate the cement paste (reducing water) and decreasing permeability.

- Improves consistency •
- Reduces capillary absorption •
- Decreases water consumption •





AIR CONTROL

Value Proposition

Solutions that provides the right amount and quality of air, for every specific needs and projects, while keeping the concrete production simple and accurate.





Challenge

Air in concrete, if not managed properly can reduce the strength and durability in aggressive environments. At the same time, when high air/low density concrete is required, air can become instable and collapse before hardening



Differentiation

Compatibility with other types of admixtures used in concrete (plasticizers/superplasticizers/accelerators, retarders, ...) especially specific combinations to guarantee air content



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Benefits

Tailor made products that enable customers to target and reach their desired air content (high/low) and which will remain stable throughout all the production/casting process

ST VINCENTS SHEFFIELD

- The renovation project requires mass filling of the existing basement using 60m³ of foam concrete
- Only ISOFOAM 6000 allows the production of ultra light weight foam concrete with more than 40% of air stable



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CUSTOMER BENEFITS AIR CONTROL



MODE OF ACTION air entrainer

ISOSPHERE 5042

Characteristics

ISOSPHERE 5042 is an air entraining agent which enables controlled air-entrainment.

Effects

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- Adds micro air pores to interrupt • capillary pores
- Improves workability •
- Reduces bleeding and settlement •
- Reduces compressive strength ٠
- Slight plasticizing effect •

MODE OF ACTION foaming agent

ISOFOAM 5075

Characteristics

ISOFOAM 5075 is a foaming agent which enables controlled airentrainment of stable foam into light weight building systems. Special designed for stabilized mortars.

Effects

- · Reduces weight of the elements
- Reduces segregation



MODE OF ACTION defoamer

ISODENSE 4010

Characteristics

ISODENSE 4010 is a defoaming agent added to the concrete to reduce the air content.

- Reduces air content
- Compensates side negative effects with interactions of aggregates and cement that increase air content

CUSTOMER BENEFITS AIR CONTROL



MODE OF ACTION air entrainer

ISOSPHERE 5200

Characteristics

ISOSPHERE 2500 is a liquid admixture based on surfactant components, formulated to include a controlled amount of air in concrete, mortar and precast elements

Effects

 $\stackrel{\bullet}{} \rightarrow \bullet$

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- Improve the workability ٠
- Reduces the concrete bleeding ٠
- Generates stable air inclusion, which ٠ provides greater quality control in concrete production
- It allows to obtain elements with lower • unit masses and thus it is possible to lighten the structures

MODE OF ACTION foaming agent

ISOFOAM 520

Characteristics

ISOFOAM 520 is a foaming agent that allows controlled air incorporation, with stable foam in lightweight building systems.

- Improve the workability
- · Reduces the concrete bleeding
- Generates stable air inclusion, which provides greater quality control in concrete production
- It allows to obtain elements with lower unit masses and thus it is possible to lighten the structures







Value Proposition

Complete set of admixtures enabling a full control of cement hydration to provide with the desired open time and hardening.





Tailor made products for different cement chemistries. Improved hydration of cement that will deliver higher 28D strength

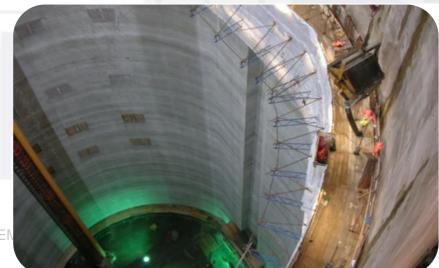
Challenge

Hot climates reduce workability retention and shorten set time of concrete. Special needs for long casting projects / transportation where concrete should still set.



Differentiation

Compatibility with plasticizer and superplasticizer admixtures without compromising setting time and final strength development



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Benefits

THAMES WATER LEE TUNNEL



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- Continuously poured concrete into the slipform shutter of the shaft (11 000m³).
- The team used a bespoke C50/60 concrete including several admixture blends to control setting times including **ISORETARD 200 retarder.**

CUSTOMER BENEFITS RETARDERS



APPLICATION extended workability

APPLICATION extended workability

ISORETARD 160

Characteristics

ISORETARD 160 is added to the ready-mix as a classic retarder based on organic acids with strong retarding properties.

Effects

- Increases the setting time of the concrete
- Increases retention of workability

ISORETARD 2201

Characteristics

ISORETARD 2201 is added to the ready-mix as a classic retarder based on organic salts with strong retarding properties.

Effects

- · Increases the setting time of the concrete
- Increases retention of workability



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APPLICATION extended workability

ISORETARD 6020

Characteristics

ISORETARD 6020 is added to stabilized mortars with strong retarding properties.

- Increases the setting time of the concrete
- Increases retention of workability
- Specialized for stabilized mortars



CUSTOMER BENEFITS RETARDERS



APPLICATION extended workability

ISORETARD 212

Characteristics

ISORETARD 212 is a liquid retardant admixture based on organic chemicals substance that control cement hydration and delay setting time in a controlled and predictable way.

Effects

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- Reduce segregation by avoiding adding additional water due to excessive loss of workability
- Provides a controlled delay to allow for better transport, placement and finishing times

APPLICATION extended workability

ISORETARD 1500

Characteristics

ISORETARD 1500 is a liquid retardant admixture based on organic chemicals substance that control cement hydration and delay setting time in a controlled and predictable way.

Effects

- The mixture does not significantly lose its plasticity over time
- The finish of concrete surfaces, mainly horizontal ones, are drastically improved thanks to the delay generated
- Provides a controlled delay to allow for better transport, placement and finishing times



APPLICATION sleeping concrete

ISORETARD 240

Characteristics

ISORETARD 240 is a liquid retardant admixture based on organic chemicals substance that control cement hydration and delay setting time in a controlled and predictable way.

- The mixture does not significantly lose its plasticity over time
- The finish of concrete surfaces, mainly horizontal ones, are drastically improved thanks to the delay generated
- Provides a controlled delay to allow for better transport, placement and finishing times
- Allows the design of extended life mortars





PRE-CAST ADMIXTURES

Value Proposition

Specific set of formulated products joining the best-in-class PCE dispersant with highly effective strength enhancers for most efficient production process.





Specific range of superplasticizer capable to reduce water by more than 30% without retarding cement hydration

Challenge

Need for very early strength development with low water content and high fluidity.



Differentiation

Internally designed PCE capable to provide unique performances and the flexibility to formulate tailor-made admixtures for any given cement system.





Benefits

WALLEX – PRECAST

- Innovative industrialized precast system
- Tailor design superplasticizer ISOFLOW 865 to control flow and early strength allowing fast productivity



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CUSTOMER BENEFITS PRE-CAST ADMIXTURES

PRODUCTION PROCESS self-placing / SURFACE APPEARANCE smooth

ISOFLOW 9200

Characteristics

ISOFLOW 9200 is added to the ready-mix concrete that is going to be placed as precast element (pipes, tiles, beams, etc...).

Effects

- High early strength development that helps to unmold in less time
- High water reduction
- Contributes with a good placing of the concrete in the molds

PRODUCTION PROCESS vibro-compressed / SURFACE APPEARANCE textured

ISOMAP 400

Characteristics

ISOMAP 400 is added for dry or semi dry concrete mixes based on modified synthetic surfactants to vibrocompressed elements during the production process.

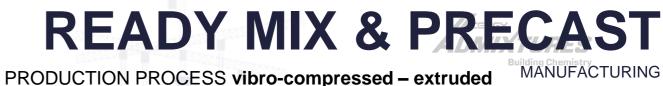
Effects

- Pre-compaction
- Plasticising effect
- Surface densifying



 $\stackrel{\bullet}{} \rightarrow \bullet$

 $\bullet \rightarrow \bullet$



SURFACE APPEARANCE smooth - textured

PRODUCTION PROCESS vibro-compressed / SURFACE APPEARANCE textured

ISOMAP 1000

Characteristics

ISOMAP 1000 is added for dry or semi dry concrete mixes based on modified synthetic surfactants to vibro-compressed elements during the production process. Reduces cement amounts.

- Pre-compaction •
- Plasticizing effect •
- Surface densifying •
- Increases of early strengths •



CUSTOMER BENEFITS PRE-CAST ADMIXTURES

PRODUCTION PROCESS vibro-compressed / SURFACE APPEARANCE textured

FLUIDX U16

Characteristics

FLUIDX U16 is a liquid plasticizer and strength improver admixture based on modified dispersants. Designed for less than one inch slump mixes.

Effects

- Improves the cement hydration • generating greater strength
- Generates greater workability in the mix
- Provides superior performance in a wide • range of mix designs and production processes
- Improves the general quality of • elements, reducing waste due to defective elements

PRODUCTION PROCESS self-placing / SURFACE APPEARANCE smooth

ISOFLOW 9210

Characteristics

ISOFLOW 9120 is a high range water reducing admixture designed to increase initial strengths in concrete, improve plasticity and reduce water content. It does not contain chlorides.

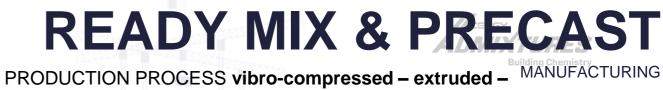
Effects

- Gives plasticity to concrete
- Reduces the amount of water required in the mix
- Increase initial strengths in concrete
- Does not impart a high viscosity to the mixture
- Chloride free admixture.



 $\stackrel{\bullet}{} \rightarrow \bullet$

 $\bullet \rightarrow \bullet$



SURFACE APPEARANCE smooth - textured

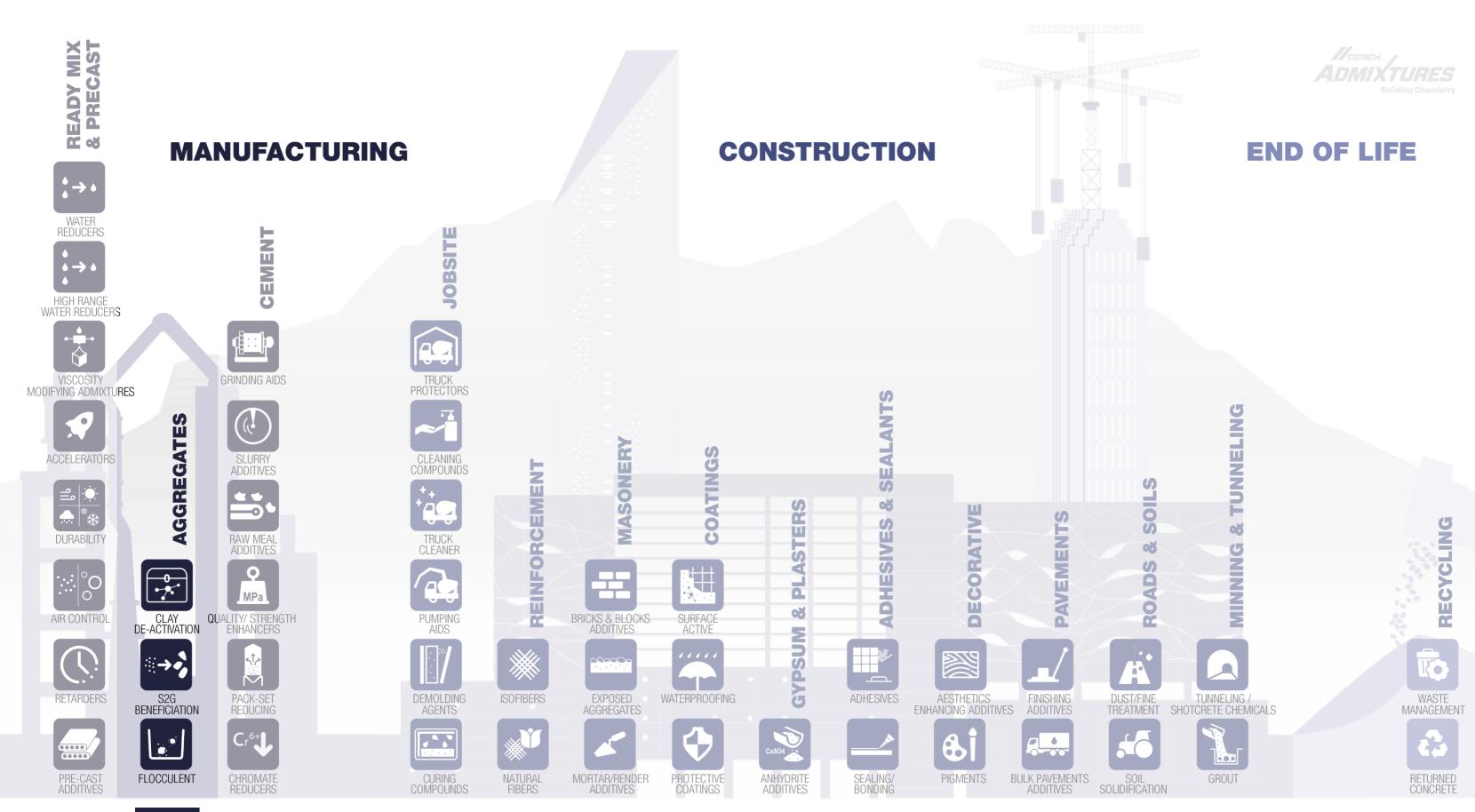
PRODUCTION PROCESS self-placing / SURFACE APPEARANCE smooth

ISOFLOW 8990

Characteristics

ISOFLOW 8990 It is a superplasticizer with high plasticity capacity, additionally within its formulation it has components with high accelerating power.

- Increases concrete slump due to its high plasticity
- It is used for the preparation of self compacting concretes
- Specially designed for concretes with which it is required to reach high initial strengths
- It does not have a high workability retention



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CEMEX

GGREGATES

RING

Providing solution to ensure this natural limited resources is used at its best.





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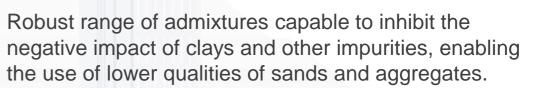
FLOCCULENT

S2G BENEFICIATION

:	

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Efficient range of products for the cleaning and recylcling of all contaminated water streams.

Capturing all the potential resources of sands and fines at quarries, to create usable and controlled artificial aggregates.







CLAY **DE-ACTIVATION**

Value Proposition

Robust range of admixtures capable to inhibit the negative impact of clays and other impurities, enabling the use of lower qualities of sands and aggregates.







Challenge

Clays and fines impurities contain in aggregates and sands are impacting performance of concrete - reducing strength, water demand and durability



Differentiation

Patented technology - robust additive that could be used for treating aggregates directly but as well as bulk RMX admixture

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Benefits

Chemicals used to neutralize the negative effect of those impurities, notably on the superplasticizers, so that "bad" quality sands/gravels can be used in concrete production instead of landfilling or other non-friendly treatments







CUSTOMER BENEFITS CLAY DE-ACTIVATION

CHLORIDE BASED yes / PREFERED APPLICATION quarry

ISOFINES + 400

Characteristics

Used as a clay inhibitor to improve the quality of different sand sources by reducing the amount of reactive clay.

Effects

- Increased reactive clay content
- Increased efficiency of PCE-• based superplasticizer (Polycarboxylates)

CHLORIDE BASED no / PREFERED APPLICATION RMX bulk

ISOFINES +

Characteristics

Maintains the performance of concrete with the use of aggregates containing clay fines, can be used as a pre-treatment of aggregates or directly in readymixed concrete.

Effects

- Controls the detrimental effect of clays on concrete performance.
- Controls water demand.
- Improves concrete rheology and workability.
- Stabilizes changes in concrete admixture demands. erland. All rights reserved Copyright © 2021 CEMEX IN









CHLORIDE BASED yes - no

PREFERED APPLICATION quarry – RMX-bulk

CHLORIDE BASED no / PREFERED APPLICATION RMX bulk

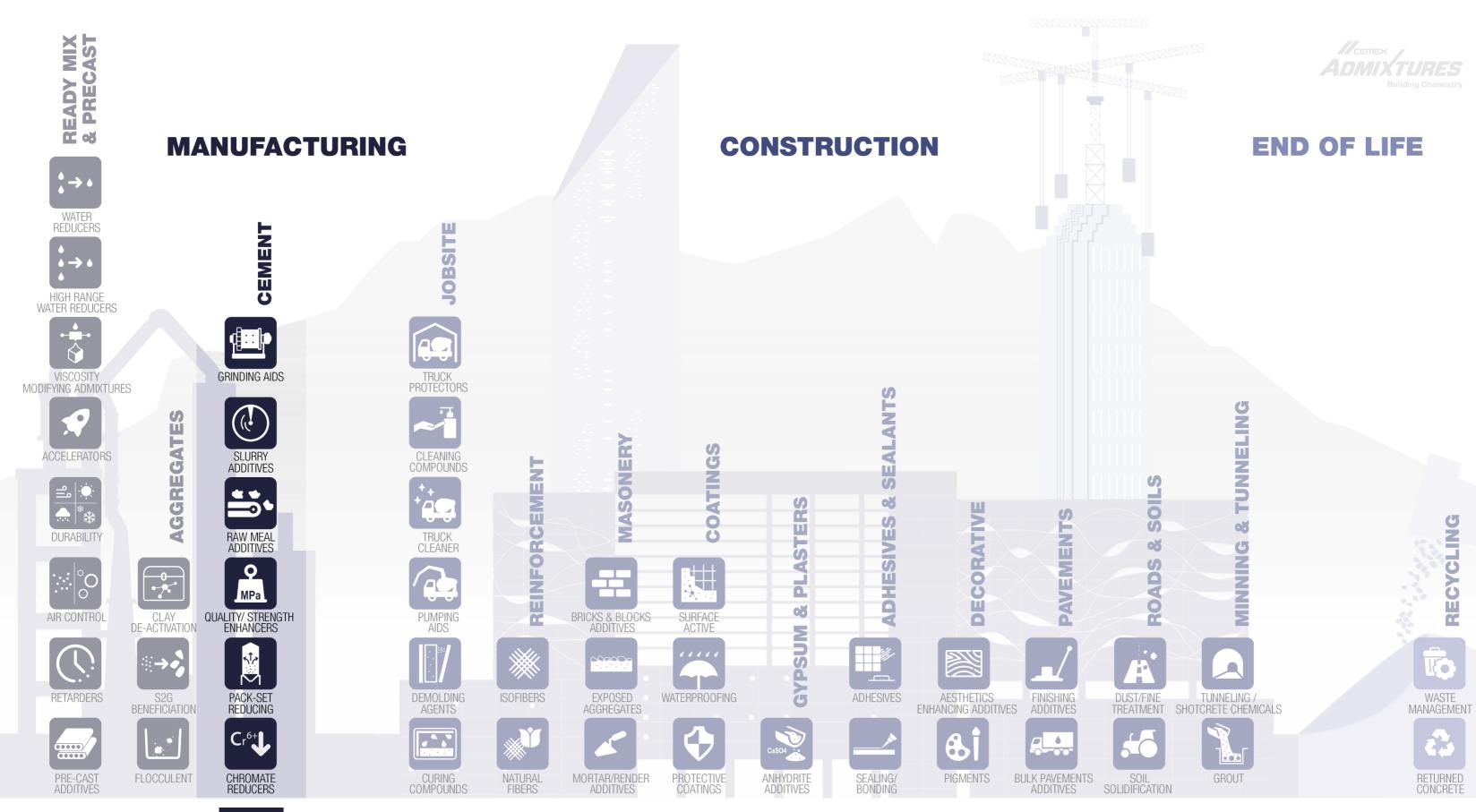
ISOFINES 7000

Characteristics

Maintains the performance of concrete with the use of aggregates containing clay fines, can be used as a pre-treatment of aggregates or directly in readymixed concrete.

Effects

- Controls the detrimental effect of clays on concrete performance.
- Controls water demand.
- Improves concrete rheology and workability.
- Stabilizes changes in concrete admixture demands.



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CEMEX

CEMENT

ANUFACTURING

Tailor-made solutions to make every challenges a unique opportunity to differentiate



GRINDING AIDS

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SL	.URRY
DMIXT	URES



(((•))	

RAW	MEAL
DMIXT	URES

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QUALITY/ STRENGTH **ENHANCERS**

MPa

PACK-SET REDUCING



CHROMATE REDUCERS

Offering the best solution for chrome level control, including long lasting protection and cost-effective options.



Our admixtures provides an optimized chemical system that will ensure the best match with production process and materials to reach higher energy reduction and mill capacity.

Providing the best solution to increase process efficiency and stability using tailor-made admixtures for every minerals.

Optimisation of production throughput for every types of mills and materials, providing an easy and simple mean to increase CK production.

Delivering the best activation for every kind of cements and additions, through targeted chemical activation of chemical phases.

Simple and robust set of chemicals enabling a full control of compaction and flowability of cement during transport and packaging.





GRINDING AIDS

Value Proposition

Our admixtures provides an optimized chemical system that will ensure the best match with production process and materials to reach higher energy reduction and mill capacity.







Chemical admixtures able to reduce coating/agglomeration of cement particles that enhances the process and reduce the energy required

Challenge

development



Differentiation

Tailor made products that matches cement process and cement chemistry

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Benefits

Reduce energy required to achieve a certain fineness of cement, that is required for strength

Reference Project









Cr⁶⁺

CUSTOMER BENEFITS GRINDING AIDS

CEMENT blended / MILL horizontal / ADITIONS pozzolan

ISOMILL 3860

Characteristics

ISOMILL 3860 is added to the grinding material during the grinding process as a grinding aid.

Effects

¶**⊡**p

O MPa

Cr⁶⁺

- Reduction of grinding time
- Increases in throughput of mill
- Increases of final strength

CEMENT blended / MILL horizontal / ADITIONS limestone

ISOMILL 3168

Characteristics

ISOMILL 3168 is an admixture added to the mill during the clinker milling process. Helps improve cement efficiencies.

Effects

- Reduces adhesive forces between clinker and mill parts
- Ability to increase production flow
 in the mill



CEMENT CEM I/OPC - blended - special

MILL vertical – open circuit ball mill – closed circuit ball mill

ADITIONS fly ash - pozzolan - slag







SLURRY ADMIXTURES

Value Proposition

Providing the best solution to increase process efficiency and stability using tailormade admixtures for every minerals.







Admixtures reduce viscosity of slurry at higher concentration and prevents it to separate when standing.

Challenge

Content of water in slurries negatively impacts the calcination process, and higher concentration will impact slurry stability/viscosity



Differentiation

Range of products enabling to withstand different processes, including wet grinding and very long-distance pumping lines.

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Benefits















RAW MATERIAL ADMIXTURES

Value Proposition

Optimization of production performance for all types of mills and materials, providing an easy and simple means to increase production.







Chemicals specifically selected for the grinding of raw materials such as limestone and clays, with improved mill throughput and improved yields.

Challenge

Raw flour must be milled before entering the calcination process and requires specific chemicals to improve the performance of the grinding mills (typical vertical roller mill).



Differentiation

Chemicals selected to match local raw meal composition for each cement plant.

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Benefits

Reference Project













RAW MATERIAL ADMIXTURES

Value Proposition

Delivering the best strength development for all types of cements and additions through chemical activation of specific chemical phases







Chemical activators capable of enhancing the hydration/resistance development of CK to compensate for the higher level of addition.

Challenge

cement quality.



Differentiation

Tailor-made formulation to contemplate the different types of raw materials used and to select the appropriate chemicals to enhance them.



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Benefits

Clinker reduction is necessary to support the reduction of the CO2 footprint without affecting

Reference Project











Cr⁶⁺

CUSTOMER BENEFITS QUALITY/STRENGTH ENHANCERS



ISOMILL 3435

Characteristics

ISOMILL 3435 is an admixture added to the mill during the clinker milling process. Helps improve compressive strength at all ages of cement.

Effects

MPa

- Reduces the adhesive forces between the clinker and the parts of the mill avoiding agglomeration phenomena that reduces the efficiency of the mill
- Increases the compressive strength of cement

CEMENT blended / STRENGTH PROFILE blended

ISOMILL 3431

Characteristics

ISOMILL 3431 is an admixture added to the mill during the clinker milling process. Helps improve compressive strength at all ages of cement.

Effects

- Reduces the adhesive forces between the clinker and the parts of the mill avoiding agglomeration phenomena that reduces the efficiency of the mill
- Increases the compressive strength of cement



CEMENT CEM I/OPC - blended - special

STRENGTH PROFILE early - late - both

CEMENT blended / STRENGTH PROFILE blended

XTRAMILL 6000

Characteristics

XTRAMILL 6000 is a high range liquid water reducing admixture of the latest technology based on polycarboxylates that contributes to improving the initial and final strengths of cement. It is added to the mill during the clinker milling process.

Effects

- Mixing water reduction
- Increases mechanical strength, due to the high-water reduction



CHROMATE REDUCERS

Value Proposition

Offering the best solution for chrome level control, including long lasting protection and cost-effective options.







Admixtures can reduce Cr-6 to Cr-3 which is then a non-dangerous species

Challenge

Hexavalent chromium is toxic but is naturally present in some of raw materials used for cement production and/or as impurities from the grinding balls



differentiation

Admixture business capable to provide liquid based admixtures or provide a competitive sourcing channel for powder based chemicals

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Benefits







CUSTOMER BENEFITS CHROMATE REDUCERS

ASPECT liquid

ISOCROME 4000

Characteristics

ISOCROME 4000 is added to the grinding material during the grinding process, helps to decrease the chrome content for all cement types.

Effects

*

- Reduction of adhesive forces in the grinding product
- Water-soluble chromium VI is converted into harmless chromate-III.





P MPa



ASPECT solid - liquid







PACK SET REDUCING

Value **Proposition**

Simple and robust set of chemicals enabling a full control of compaction and flowability of cement during transport and packaging.







Admixtures are introduced during the grinding to reduce the packing of cement fine particles and guarantee flowability of cement

Challenge

Cement can be compacted in silos and/or in delivery trucks, thus creating discharging issues and clogging - as well during the grinding process



Differentiation

Robust chemicals that enable to reduce packing while preventing over-flow of cement (flushing) during grinding and/or in transporting belts/systems

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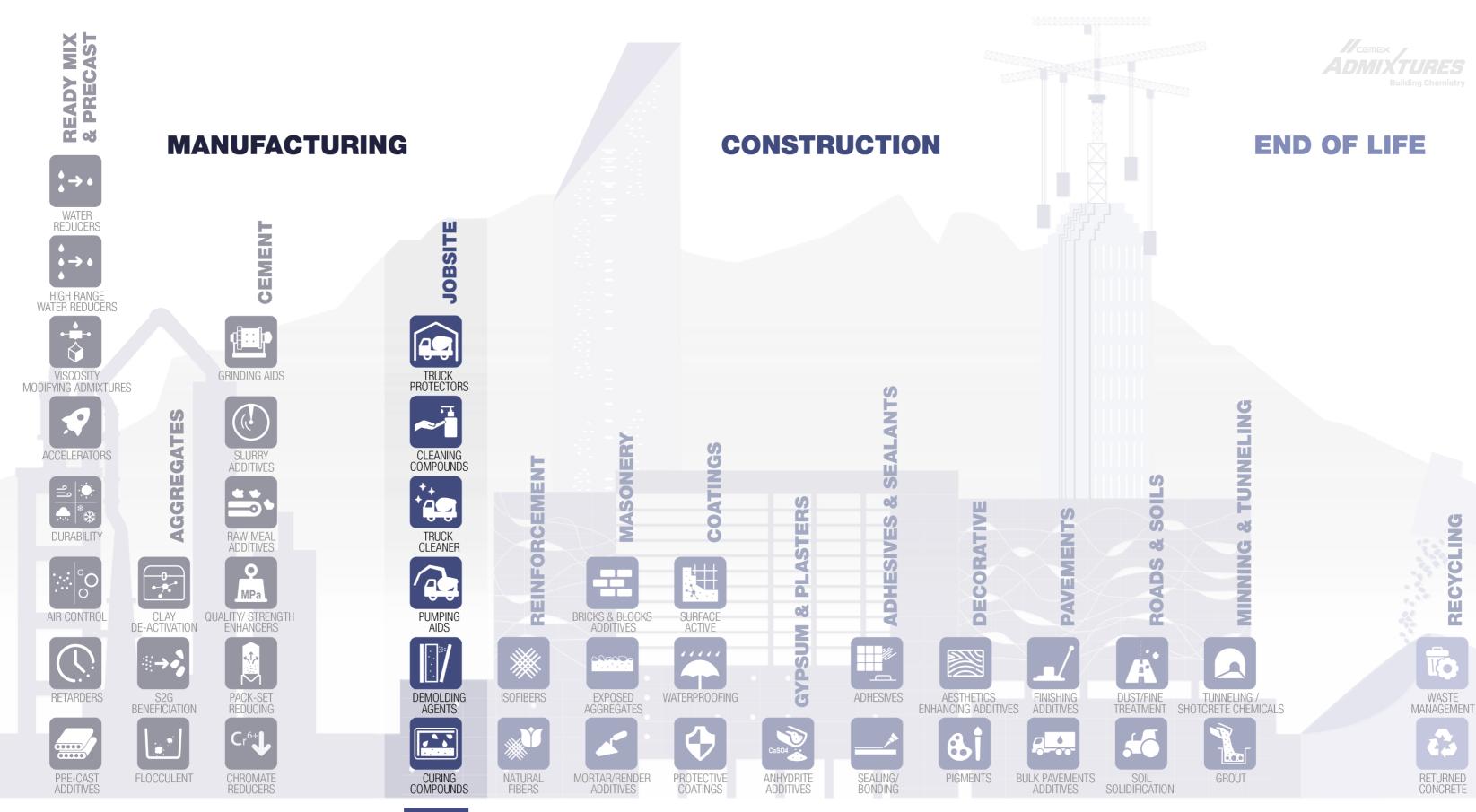
Benefits











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CEMEX





Multi-functional products providing with safe and environmentally friendly active chemicals for keeping truck free of concrete left-overs

High quality and efficient products protecting our employees and customers from the COVID-19 and other viruses

Ensuring the safety of the operators while cleaning trucks and other tools, with a range of safe and easy to apply products

Enable pumping in complex conditions by reducing pumping pressure and ensuring proper sliding of the concrete inside the pumping pipe.

Offering the right product for every applications and needs, to achieve the best concrete finish

User-friendly and easy to apply products, ensuring that every concrete cure in the optimal way, avoid premature damages and cracks





TRUCK **CLEANER**

Value Proposition

Ensuring the safety of the operators while cleaning trucks and other tools, with a range of safe and easy to apply products







Chemical attack of the cement matrix to dissolve/weaken the crust and allow for an easy removal

Challenge

Concrete left over will harden and create crusts on the trucks and other elements and tools if not washed well. They become more and more difficult to remove only mechanically.



Differentiation

Portfolio of products include safe and non-dangerous products not based on strong acids.

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Benefits











PUMPING AIDS

Value Proposition

Enable pumping in complex conditions by reducing pumping pressure and ensuring proper sliding of the concrete inside the pumping pipe.







Challenge

When starting pumping operation, a first mixture needs to be injected through the pump to initiate it. Typically, operators use a very liquid cementitious based paste or mortar, which helps starting the pump but does not lubricate well the complete tubing



Differentiation

Easy to dissolve powder based admixuture, packed in water-soluble bags, for easy on-site preparation. Creates less waste at starting up

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Benefits

ISOPUMP range of products not only helps in the starting process, but also creates a film on the complete tubing length, thus optimizing the pumping operation notably on longer distances













DEMOLDING AGENTS

Value Proposition

Offering the right product for every applications and needs, to achieve the best concrete finish







Easy to apply oil or water emulsion product that will create a thin film on the formwork and prevent concrete to stick and lead to good surface finish.

Challenge

Concrete can easily stick to the formworks thus leading to surface damages during the demolding and/or damaging the formwork itself. May also lead to longer cleaning time and reduce efficiency and turnover.

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Differentiation

Specialized products for architectonic application, special products for foam/air entrained concrete, and range of biodegradable products.





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Benefits













CUSTOMER BENEFITS DEMOLDING AGENTS

TECHNOLOGY mineral oil / APPLICATION RMX/ MATERIAL steel

ISOFORM 9000

Characteristics

It is a release agent with high corrosion protection. The product does not contain mineral oils and is highly biodegradable..

Effects

- Allows a better stripping work.
- Does not change the color of the concrete.
- Protects forms from corrosion.
- Easy to clean.
- Concrete surfaces are perfectly smooth giving a better visual appearance.

TECHNOLOGY mineral oil / APPLICATION RMX/ MATERIAL steel

ISOFORM 3200

Characteristics

It is a treated release agent to be used as a release agent for metal, wood and plastic forms that guarantees high performance. It is of vegetable origin.

Effects

- Homogeneous without forming clots.
- Allows a better stripping work.
- Does not change the color of the concrete.
- Protects the forms from corrosion.
- Easy to clean.

Copyright © 2021 CEMEX • Concrete surfaces are perfectly served smooth giving a better visual appearance.



TECHNOLOGY mineral oil – vegetal oil – waterborne – solvent

APPLICATION RMX – pre-cast

MATERIAL wood – steel – plastic







CURING COMPOUNDS

Value Proposition

User-friendly and easy to apply products, ensuring that every concrete cure in the optimal way, avoid premature damages and cracks







Easy to apply water based admixture, which by spraying a thin layer on the surface, blocks the drying of the concrete

Challenge

Concrete in the process of curing rapidly lose water by evaporation. This can impact the strength development and lead to early cracking of the concrete element



Differentiation

Non-toxic products, easy to apply with longer shelf-life stability of the emulsion. Available with white pigment to wellspot the areas where product have been applied

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Benefits



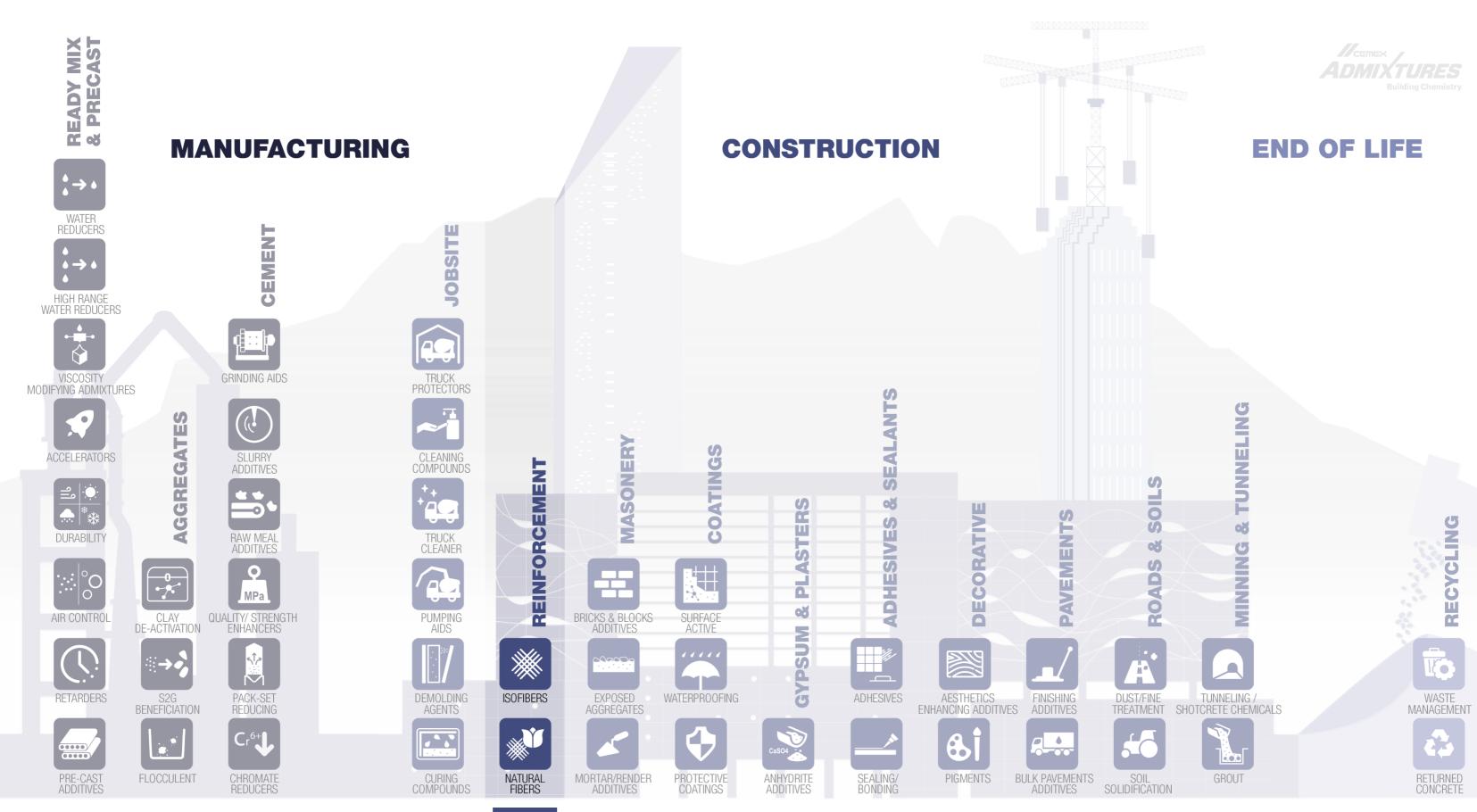












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CEMEX

REINFORCEMENT

CONSTRUCTION

An integral solution to reinforce your materials



ISOFIBERS



Ensuring that the best fibers are used in synergy with your best material

NATURAL FIBERS

/ k



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An ecological solution to reduce cracks in you cement based materials







ISOFIBERS

Value Proposition

Ensuring that the best fibers are used in synergy with your best material

REINFORCEMENT

CONSTRUCTION



Selected fibers with proven track record of high performance, quality and compatibility

Challenge

Using fibers from external providers does not allow to have the best combination with concrete design and admixtures used



Differentiation

Ensuring the synergy between the fibers and the concrete material to achieve the best performance

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Benefits





CUSTOMER BENEFITS ISOFIBERS

TYPE plastic

ISOFIBER 2000

Characteristics

Synthetic macrofiber produced with linear thermoplastic polymers with a high degree of crystallinity, taking advantage of the benefits of each of these materials for excellent concrete reinforcement..

Effects

- Excellent dispersion in concrete.
- Lower placement costs compared to electrowelded mesh.
- Not susceptible to corrosion.
- Greater resistance to abrasion.
- Water-soluble packaging that facilitates dosage.
- Greater cohesiveness in concrete



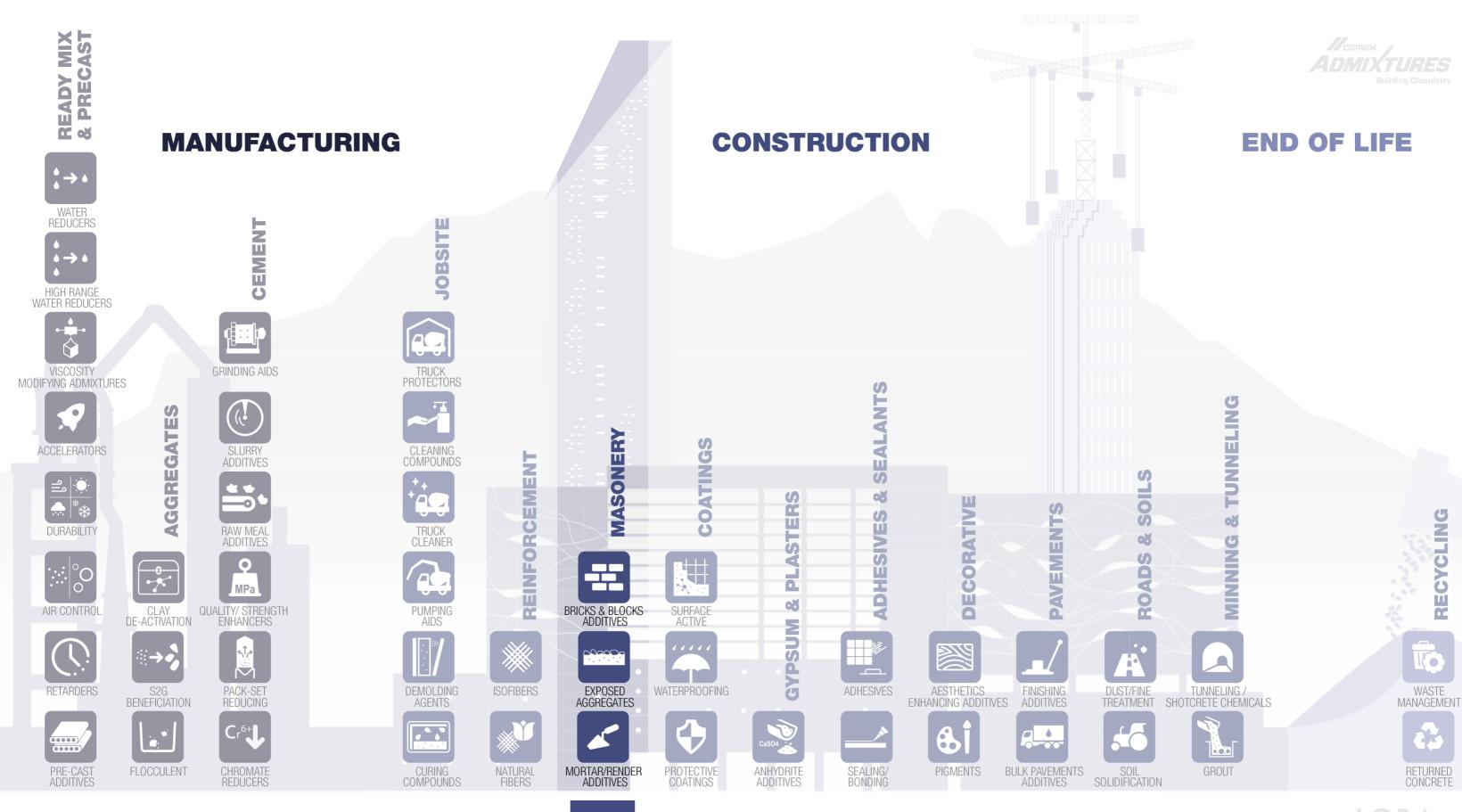
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TYPE metallic – glass – plastic







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CEMEX

MASONERY

CONSTRUCTION

Solutions to provide finishing and aesthetic touch to your construction



BRICKS & BLOCKS ADMIXTURES

EXPOSED AGGREGATES Solut

MORTAR/ RENDER ADMIXTURES

Range of solutions for all kind of applications and needs



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Optimisation of process and aesthetics using specific chemistries

Solutions for decorative and architectural applications putting aggregates under the spotlight







BRICKS & BLOCKS ADMIXTURES

Value Proposition

Optimisation of process and esthetics using specific chemistries



CONSTRUCTION



Challenge

Production process efficiency is strongly impacted by the consistency of the concrete upon vibration, and surface finish can be impacted leading to bug holes and defect angles



Differentiation

Range of products that can be tailored design to focus and enhance any of the feature - especially very specific surface esthetic finish.



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benefits

All-in-one products that enhance the compaction of the concrete, can boost the early strength for faster turnover, and give a smoother finish upon demolding

Reference Project



CUSTOMER BENEFITS BRICKS & BLOCKS ADMIXTURES

PRODUCTION PROCESS / vibrocompacted

FLUIDX U16

Characteristics

A liquid plasticizer and strength improver based on modified dispersants. Designed for mixes with less than 1" slump.

Effects

- Improves cement hydration resulting in higher strength
- Provides superior performance in a wide range of mix designs and production processes
- Improves overall element quality, reducing waste due to defective elements

PRODUCTION PROCESS / vibrocompacted

ISOMAP 400

Characteristics

Added to dry or semi-dry concrete of less than 1" slump based on modified synthetic surfactants helping during the vibrocompaction process.

Effects

 \star

- Better accommodation of the concrete in the molds
- Densification of the element
- Better finish
- Less waste



PRODUCTION PROCESS / vibrocompacted - extrusion - fluidized mixturer

PRODUCTION PROCESS / vibrocompacted

ISOMAP 1000

Characteristics

It is added to dry or semi-dry concrete of less than 1" slump based on modified synthetic surfactants helping during the vibrocompacting process. It increases the strength of the elements allowing an optimization of cement quantities.

Effects

- Better accommodation of the concrete in the molds
- Densification of the element
- Better finishing
- Raises the initial strengths.





MORTAR/ RENDER **ADMIXTURES**

Value Proposition

Range of solutions for all kind of applications and needs



CONSTRUCTION



Challenge

Advanced products needed to have the right consistency to stick on the surface, while holding sufficient water for application, and being resistant to freeze and thaw.



Differentiation

Tailor made products designed to match cement chemistries and properties, easily tunable to adapt to environment. conditions and needs

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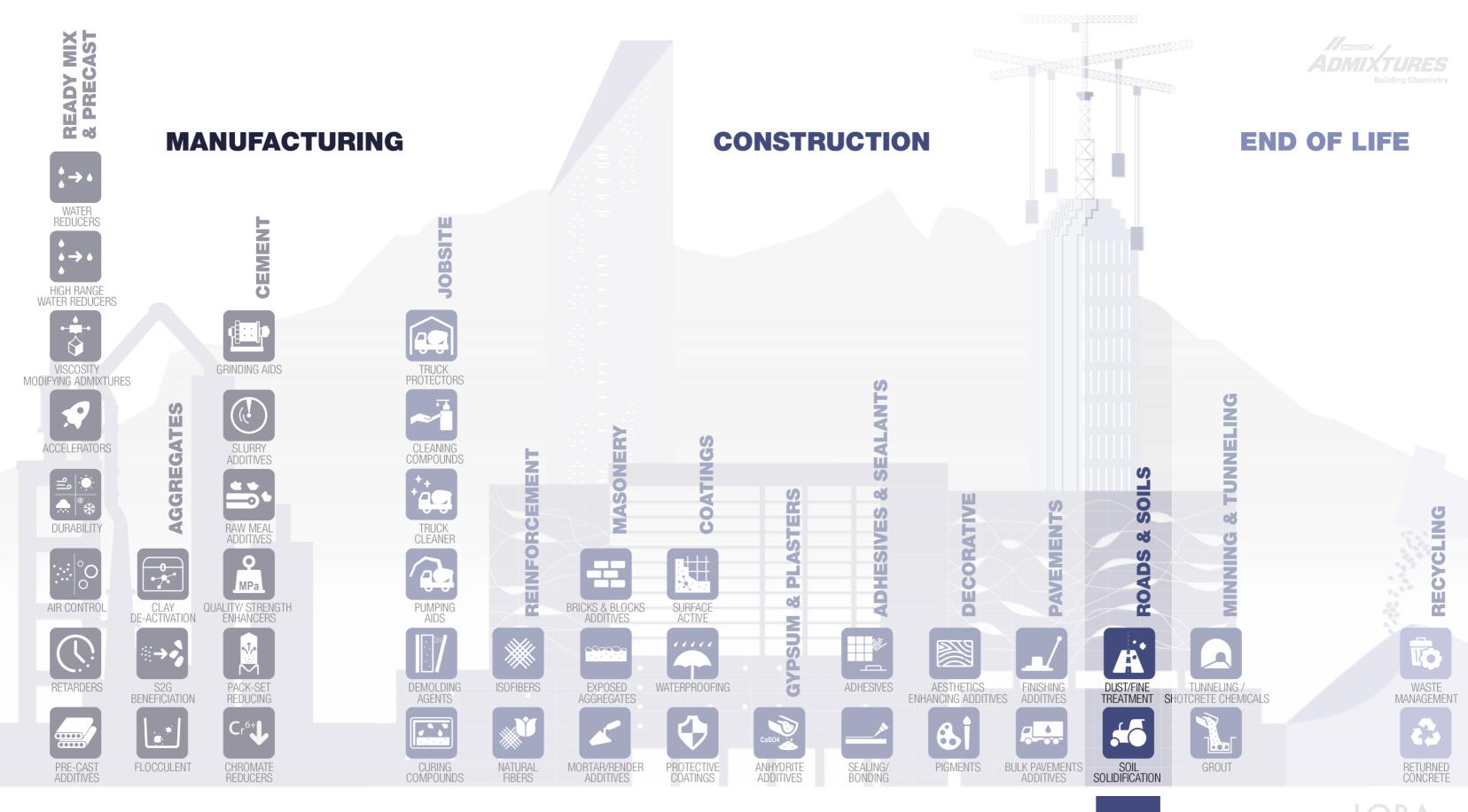
Benefits

Integral solutions which include stabilizers for water and consistency control, as well as air entrainer to guarantee durability and ease of application.

Reference Project







research & development

CEMEX

ROADS & SOILS

CONSTRUCTION

A range of solution to visibly reduce our impact on nature and environment.

DUST/FINE TREATMENT

SOIL SOLIDIFICATION



50

Long term acting solutions to efficiently reduce the emissions on dusty industrial sites.





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Enabling the creation of durable and natural looking roads and pavements.





DUST/FINE TREATMENT

Value Proposition

Long term acting solutions to efficiently reduce the emissions on dusty industrial sites.

ROADS & SOILS

CONSTRUCTION



Product simply sprayed on the surface, creating upon drying, a crust that will bond the dust together and avoid it to "fly" away.

Challenge

At quarries, industrial extraction or construction sites, roads are very dusty, and a lot of fines will easily flow in the air – leading to environmental and safety issues



Differentiation

Provide a crust able to withstand the load of heavy trucks and machines, and will not need to be applied every day. Some products are even selfregenerating over night.

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Benefits



CUSTOMER BENEFITS DUST/FINE TREATMENT

APPLICATION roads - quarry

ISODUST 1000

Characteristics

It is a concentrated polymer admixture; it acts as a sealer to bind dust. When already in place, it is weather resistant

Effects

- Impregnation allows dust particles to agglomerate, increasing their weight and preventing them from rising.
- It forms a crust on the surface.
- Increases the durability of the surface

APPLICATION roads - quarry

ISODUST 3000

Characteristics

It is a concentrated polymer admixture; it acts as a sealer to bind dust. When already in place, it is weather resistant

Effects

- Impregnation allows dust particles to agglomerate, increasing their weight and preventing them from rising.
- It forms a crust on the surface.
- Increases the durability of the surface







APPLICATION stock piles – roads – quarry - albestos



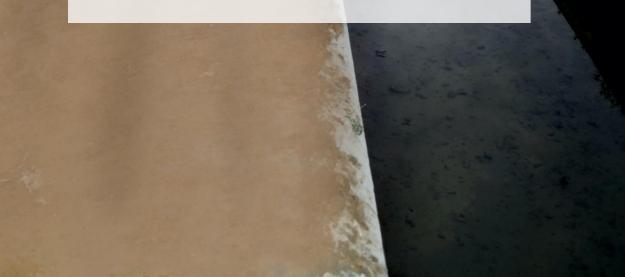




SOIL **SOLIDIFICATION**

Value Proposition

Enabling the creation of durable and natural looking roads and pavements.



ROADS & SOILS

CONSTRUCTION



Chemical admixtures mixed with local soil, which will give strength upon compaction and long-term durability to the pavement.

Challenge

In remote places or where the "natural" look is important, it is not always possible to construct road with concrete (or asphalt) - hence the need to provide a solution using locally available raw materials.



Differentiation

Range of chemicals able to adapt to each local soil nature and behavior, including biodegradable and eco-friendly products available.

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Benefits





CUSTOMER BENEFITS SOIL SOLIDIFICATION

ISOVIA 7030

Characteristics

ISOVIA 7030 is a concentrated chemical additive, which is used to stabilize soils together with cement or other alternative cementitious materials

Effects

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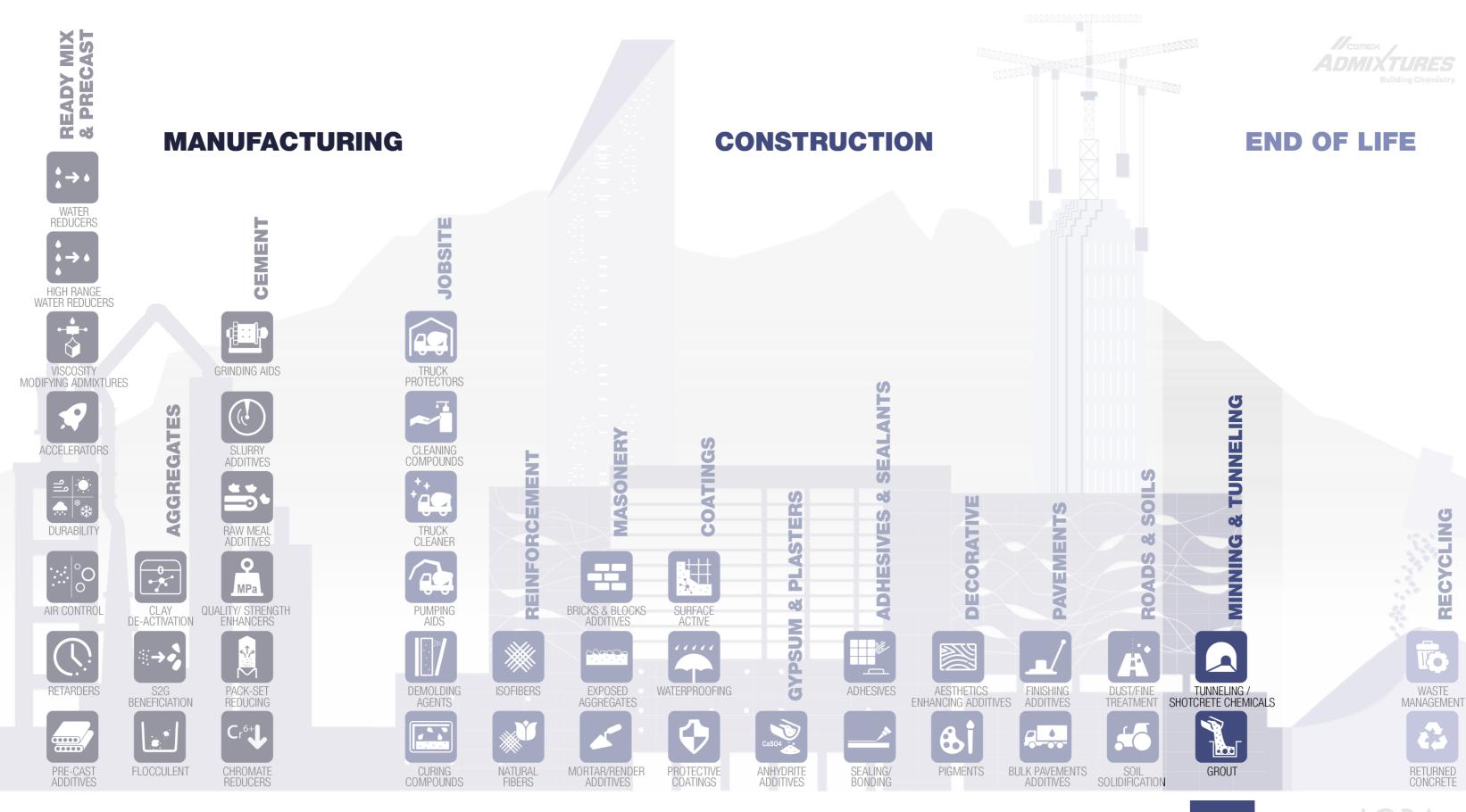
- Allows to reduce the amount of cement in the mix design.
- Contributes to the development of compressive strength.
- Improves the appearance of the soil.
- Contributes to the durability of the stabilized zone.











research & development

CEMEX

MINNING & TUNNELING

CONSTRUCTION

Specific product offerings to support special applications and needs TUNNELING/ SHOTCRETE CHEMICALS

GROUT



An integral solution that covers all the requirements of an exigent application.

Easy-to-use self levelling solutions that won't leave any voids behind.











TUNNELING/ SHOTCRETE CHEMICALS

Value Proposition

An integral solution that covers all the requirements of an exigent application.

MINNING & TUNNELING

CONSTRUCTION



Challenge

Construction of tunnels required the use of very fast hardening concrete that could be sprayed on-site to build walls, layers by layers while being workable enough to reach the jobe site.



Differentiation

Integral solution including accelerator component together with rebound/cohesion control and long-term strength development to ensure durability of the structure

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Benefits

Specific range of alkali free accelerators, able to promote early setting and hardening of the concrete, right at the nozzle of the spray, with low rebound.





CUSTOMER BENEFITS **TUNNELING/SHOTCRETE CHEMICALS**

CHLORIDES no

ALKALIS no

TYPE liquid

ISOXEL 9210

Characteristics

It is an accelerator that reduces the setting time and accelerates the development of compressive strength. Designed for shotcrete. Alkali, silicate and chloride free additive.

Effects

- Accelerates very fast setting of • concrete
- Very high development of • compressive strength at initial ages
- Alkali free product. ٠



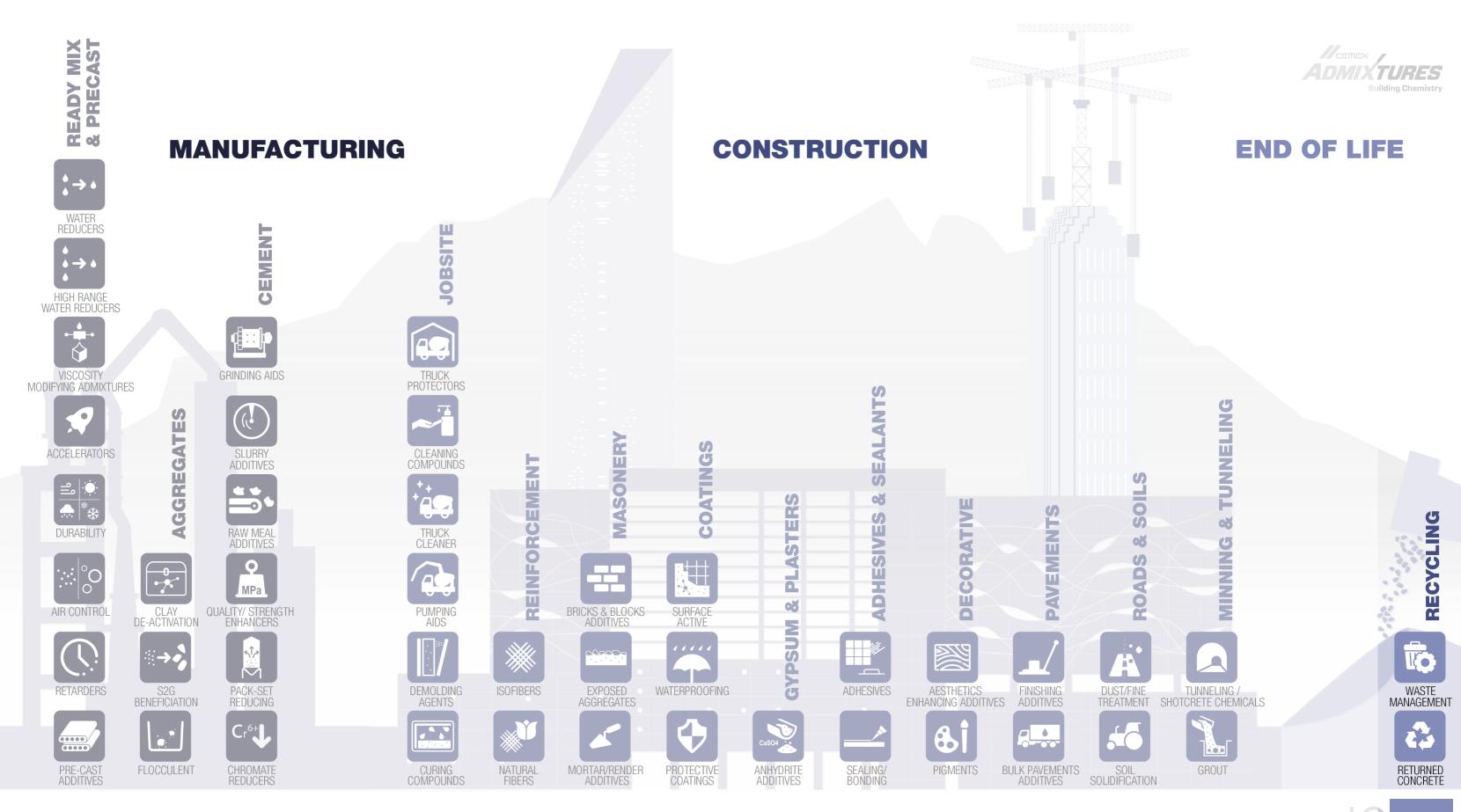


CHLORIDES no / yes

ALKALIS no / yes

TYPE liquid / dust





research & de

RECYCLING

END OF LIFE

Innovation at the service of sustainability and environment.

WASTE MANAGEMENT

RETURNED

CONCRETE



AX



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Generating added value by selectively beneficiating all types of C&D wastes

Transform you waste concrete into a value-added material, that can be reintroduced into the value chain.





RETURNED CONCRETE

Value Proposition

Transform you waste concrete into a valueadded material, that can be reintroduced into the value chain.





Product enables to transform any waste-returned concrete into artificial aggregates, which can be reused in fresh concrete production

Challenge

Over design of construction sites often lead to waste concretes at the end of each business day, which need to be treated/wasted hence creating a double cost for the RMX operation



Differentiation

Easy process, using pre-packed water-soluble bags to be dosed directly into the truck. Easy process done by truck drivers.

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Benefits

Reference Project

To



CUSTOMER BENEFITS RETURNED CONCRETE

ISOCYCLE 9130

Characteristics

It is an admixture that allows a new use to be given to concrete returned from construction sites, it agglomerates the concrete and converts it into recycled aggregate.

Effects

TO

- It can replace between 10% and 15% of the gravel with recycled aggregate without affecting the concrete in terms of workability and strength.
- It is designed to create value to the returned concrete.





