



LAFARGE READY MIX CONCRETE IRAQ



A MEMBER OF
HOLCIM GROUP



Lafarge Concrete Products

Lafarge Iraq offers a wide range of innovative products and solutions for all applications in both building and construction sectors.

Standard Mix

Lafarge Concrete products standard mixes, varying from plain concrete (C10, C15) to reinforced concrete (C20 to C50) that cover all building and infrastructure requirements.

Value Added Products

Screed Concrete

Screed is a concrete with a maximum size of 10-12mm aggregates and is used for basic elements that have a heavy presence of iron, or for slab on grade less than 10cm down to 4cm thickness. Application for under floor heating system, sloping concrete layers with wide range of strength according to the client requirements.

Micro Screed Concrete

Screed is a concrete with a maximum size of 5mm aggregates and is used for basic elements that have a heavy presence of iron, or for slab on grade less than 10cm down to 4cm thickness. Application for under floor heating system, sloping concrete layers with wide range of strength according to the client requirements.

Flow Concrete

Flow Concrete makes the concrete physically easier to place with flowability up to more than 630mm. Application for High strength concretes, Vertical walls and columns, Structures with heavy steel reinforcement, Floor slabs and exterior flatwork and Floor slabs for under floor heating systems.

Early Strength

Early Strength concrete is specifically designed for concrete that requires specific strength starting from 8h. Application for Apartments, Villas, Industrial and commercial buildings, Infrastructure, Road constructions, Fast track concrete projects.

Foam Concrete

Lightweight concrete produced by the addition of asynthetic or protein based air entrain to reach concrete density of 400, 600, or 1200 kg/m³ according to the client requirements.

WaterTight Concrete

WaterTight Concrete is an integrated full-bodied waterproofing system that includes a pore blocking system to protect the concrete from water penetration. Application for foundations, basements and structures that are in continuous contact with water or abrasive environments.

Fiber Concrete

Fiber Concrete is Lafarge's polypropylene micro fiber reinforced concrete. Application for Driveways, Pathways, Sprayed shotcrete concrete, External paving, Precast elements, Cold-floors, and any other concrete application where enhanced properties are required.

BC Tranche

BC Tranche is a backfill concrete. Application for Groove fillings (trench). It ensures strong compaction and Easier to be detected (manual and mechanical) without damaging the cable for maintenance.

Artevia

Artevia ia a range of Decorative concrete mainly used for floors; printed/stamped concrete, exposed concrete, polished, push hammered, smooth and other finishes and surface effects with different colors.

Stabilized Mortar

Stabilized Mortar is a high quality plaster delivered to site ready to use allowing excellent workability for 12, 36 up to 48 hours. It can be used in walls and slabs plaster and block joints both internal and external with different strength ranges up to 10mpa according to application and specifications.

Hydraumedia Concrete

Hydraumedia Concrete is an ideal solution for surface and storm water management. Typically containing 15-30% void space, it allows water to pass directly through it.

High Strength

RCC (Roller Compacted Concrete)

SRC (Sulfate Resistant Concrete)



Lafarge Ready Mix Concrete Iraq

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منتجات لافارج العراق للخرسانة والحصى

تقدم لافارج العراق للخرسانة والحصى مجموعة واسعة من المنتجات المبتكرة والحلول لكافة احتياجاتكم في قطاعات البناء والتشييد

الخرسانة قليلة النفاذية

الخرسانة قليلة النفاذية هي نظام متكامل من الخرسانة المقاومة لنفاذية الماء تضمن مواد خاصة تعمل على إغلاق المسامات بهدف حماية الخرسانة من نفاذية الماء. تستخدم في خزانات الماء، الأعمال البحرية، القواعد، التسويات والعناصر الإنشائية المعرضة و/أو الملامسة للماء بصورة متواصلة.

الخرسانة المقواة بالألياف

الخرسانة المقواة بالألياف هي خرسانة جازة من منتجات لافارج يُضاف إليها ألياف خاصة من البولي بروبيلين في المصنع. تستخدم في الممرات، الساحات، الخرسانة المقذوفة (شوت كريت)، الأرصفة الخارجية، العناصر المسبقة الصب، الأرضيات المعرضة لدورات الحرارة والبرودة، تطبيقات خاصة تحتاج إلى زيادة مقاومة الكسر بالإحناء والصدمات، الأرضيات (الصناعية والتجارية والمنزلية).

خرسانة الردم

هي خرسانة تُستخدم لعمليات الردم (Trench) تستخدم لتعبئة الأخاديد والحفر المميزات: ضمان قوة الدمك و سهولة في الكشف على الخط (يدوي أو ميكانيكي) دون الإضرار بالكوابل أو ما شابه لعمل الصيانة.

الأرتيفيا

الأرتيفيا هي مجموعة منتجات خرسانة ديكورات تستخدم بصورة رئيسية للأرضيات. تضم الأرتيفيا خرسانة التطبيق، الخرسانة ذات الحصو المكشوف/البارز، الخرسانة المصقولة، الخرسانة ذات السطح المخشن بالمطرفة، الخرسانة ذات السطح الأملس والناعم وغيرها من التشطيبات لسطح الخرسانة و بمختلف الألوان.

طينة القسارة الجاهزة

هي عبارة عن طينة (ملاط) القسارة المخلوطة و المنتجة في الخلاطة المركزية في مصانع لافارج، يتم توريدها الى الموقع جاهزة للاستخدام حيث تتميز بالحفاظ على قابلية التشغيل 12، 36 حتى 48 ساعة وحسب درجة القوة للقسارة المطلوبة.

الخرسانة المنفذة للماء

هي الحل الأمثل لإدارة المياه السطحية و الأمطار الشديدة وهي تحتوي على فراغات من 15% - 30% وبالتالي تسمح للمياه بالمرور مباشرة من خلالها

خرسانة عالية الصلابة

الخرسانة المضغوطة بالمدحلة

الخرسانة المقاومة لأملح الكبريتات

خلطات الخرسانة الأساسية

تنتج شركة لافارج خلطات مطابقة للمعايير ابتداءً وصولاً إلى (C15, C10) من الخرسانة العادية التي تغطي C20 و حتى C50 الخرسانة المسلحة جميع متطلبات قطاعات البناء و الطرق و المطارات وغيرها.

المنتجات ذات القيمة المضافة

خرسانة السكريد الناعمة

هي خرسانة بمقاس بحص لا يتجاوز 5 ملم. تستخدم في العناصر الإنشائية التي يتركز فيها تواجد الحديد و الأرضيات ذات السماكات القليلة التي تتراوح من 4 الى 10 سم يمكن استخدامها ضمن شبكة التدفئة تحت البلاط او في خرسانة الميلان بدرجات قوة مختلفة اعتماداً على احتياجات الزبون.

خرسانة السكريد

هي خرسانة بمقاس بحص لا يتجاوز 12-10 ملم. تستخدم في العناصر الإنشائية التي يتركز فيها تواجد الحديد و الأرضيات ذات السماكات القليلة التي تتراوح من 4 الى 10 سم يمكن استخدامها ضمن شبكة التدفئة تحت البلاط او في خرسانة الميلان بدرجات قوة مختلفة اعتماداً على احتياجات الزبون.

الخرسانة عالية الانسيابية

الخرسانة عالية الانسيابية تجعل الخرسانة سهلة الاستخدام بشكل أكبر بمعدل انسيابية يصل لأكثر من 630مم. يمكن استخدامها في الخرسانة ذات المقاومة العالية، الأعمدة والجدران، العناصر الإنشائية ذات الكثافة العالية في حديد التسليح. أرضيات الطوابق و الأرضيات الخارجية المستوية و الأرضيات الخاصة بأنظمة التدفئة تحت الأرضية.

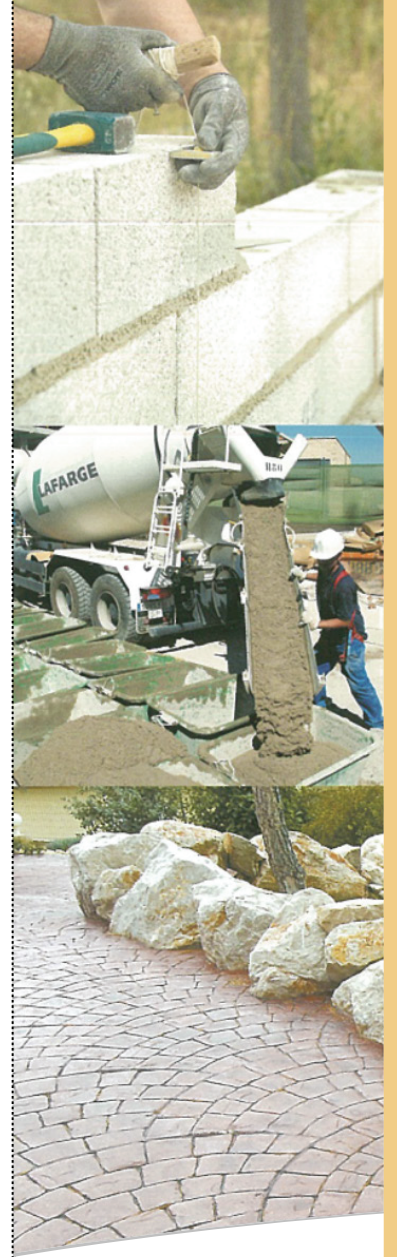
الخرسانة ذات القوة المبكرة

تم تصميم الخرسانة لاكتساب القوة في وقت مبكر و تحديداً للخرسانة التي تتطلب قوة محددة بدءاً من 8 ساعات. تستخدم في الشقق، الفلل، المباني التجارية و الصناعية و مشاريع البنية التحتية والمشاريع ذات الجداول الزمنية المضغوطة.

الخرسانة الرغوية

هذا التصنيف من الخرسانة الخفيفة (الخرسانة الخفيفة) والتي تنتج بإضافة الفقاعات الهوائية سواءً من مواد ذات أساس بروتيني أو صناعي مما يسهم في تخفيف كثافتها الى 400, 600, 800, 1000, 1200 كغم/م³ اعتماداً على احتياجات الزبون.

يمكن استخدام الخرسانة الرغوية الخفيفة ضمن نظام العزل الحراري و الصوتي و مقاومة الحريق. كما يستخدم كطبقة ميلان ضمن نظام عزل الرطوبة للأسقف وفي نظام التدفئة تحت البلاط/ الكاشي و في اعمال الردم والحماية للأساسات.



LAFARGE
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Artevia

THE ART OF CONCRETE

Printed



Colored Concrete for Pattern Imprinting

Artevia™ Print is an incredibly lifelike range of texture pavements, stone and natural effect finishes.

Applications:

- All concrete flat works and pavements.
- Driveways and walkways.
- Patios, Terraces.
- Swimming pool surrounds.
- Enhancement of architectural features.
- Floors (domestic, retail outlets, shopping malls).

Advantages:

- A natural traditional look.
- Cost effective solution.
- Durable (excellent ageing properties).
- Extremely low maintenance – no weeding.
- Unlimited potential for different patterns and finishes.
- Several colors are available.
- No risk of delamination of colour layer.
- A long lasting and fade resistant inbuilt decorative solution
- Less labor required.
- Vandal-proof paving solution.
- Available in 10mm and 20mm aggregates size.



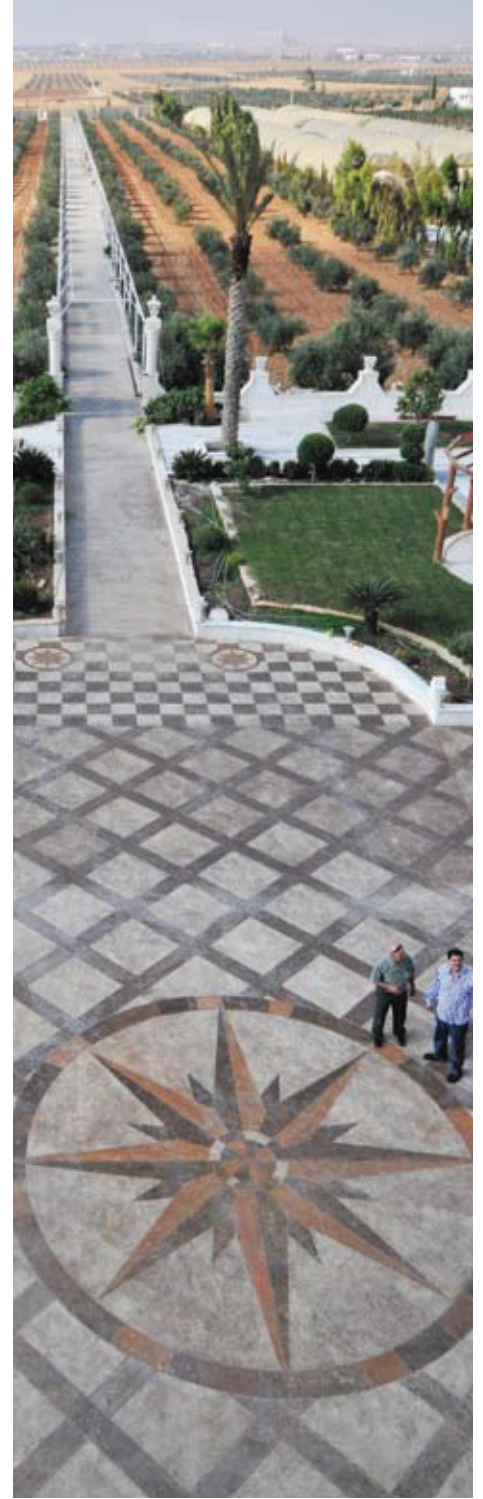
General:

- Artevia™ is Lafarge's range of superior decorative concretes, which offer architects, developers, contractors and specifiers a wide scope for aesthetic, durable and cost effective finishes.
- Artevia™ Print mixes can be specified for use with almost any concrete and are suitable for most applications including domestic, structural and precast concrete applications.
- The fines content in Artevia™ Print mixes is set at the optimum level for each aggregates type / cement content in order to achieve a good print.
- Artevia™ Print will behave in exactly the same way as equivalent standard grade of concrete with regards to slump, placing and set time. As with all concrete, provision should be made for movement, with the incorporation of slip membranes and contraction and expansion joints.

Ensuring Satisfaction:

As with any concrete work, the quality of the final product is strongly influenced by the quality and consistency of the application work. We approved to offer this product as supply and apply to insure obtaining the best results from our Artevia™ range.

“We aim to deliver an excellent customer experience through service, quality, accountability and value”.



General Guidelines

- 1- Artevia™ concrete will behave in a similar way to conventional concrete.
- 2- The concrete will be delivered in a uniform consistency. It is advisable not to add water on site.
- 3- The concrete workability for your chosen application must be agreed at the time of ordering.

- 4- Always cure and seal the concrete surface using our recommended curing and finishing materials.
- 5- Poor curing of Artevia™ Print can lead to variation in final surface.
- 6- Artevia™ Print uses Micro fibers to minimize plastic shrinkage cracking

Safety Precautions:

The use of safety goggles, gloves and suitable footwear is recommended when placing concrete.



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Artevia

THE ART OF CONCRETE

Exposed



Exposed Aggregate Concrete

Artevia™ Exposed is a natural exposed aggregate concrete in a broad range of colours and textures. It is a reliable and robust exterior concrete with exceptional aesthetically pleasing finishes.

Applications:

- Driveways and walkways.
- Ramped areas.
- Traffic circles, roads & town center pedestrian areas.
- Demarcated areas.
- Paths and parklands.
- Cityscapes & Terraces.
- Garden paths & poolside areas.

Advantages:

- A natural look.
- Cost effective solution.
- Durable (excellent ageing properties).
- Extremely low maintenance – no weeding.
- Slip / skid resistant surface.
- Will not sink or heave as with traditional paving – reduced trip hazards.
- Choice of colors and aggregate finishes.
- Low porosity.

Characteristics:

- Artevia™ is Lafarge's range of superior decorative concretes, which offer architects, developers, contractors and specifiers a wide scope for aesthetic, durable and cost effective finishes.

- Artevia™ Exposed will behave in exactly the same way as equivalent non-colored grade of concrete with regards to slump, placing and set time. As with all concrete, provision should be made for movement, with the incorporation of slip membranes and contraction and expansion joints.
- The depth of etch / exposure can be varied.
- Artevia™ Exposed is delivered at the ordered slump with sufficient pigment to color at this w/c ratio. Adding water on site over the ordered slump should be avoided as this will have a significant impact on the color.
- When pigmented concrete is used, a two layer construction can be considered for large pavements areas in excess of 125mm thick. The minimum depth of topping is 70mm.
- It should be noted that some local variations from the color chart / samples are to be expected as a result of different raw materials used in different parts of the country. Aggregates are natural occurring materials and thus variation in color and size are inevitable.

Limitations:

Concrete is a composite material and even though every care is taken to keep the material as homogeneous as possible, the colour of different loads may show marginal variations. Artevia™ Exposed should not be used as a screed.

Ensuring Satisfaction:

As with any concrete work, the quality of the final product is strongly influenced by the quality and consistency of the application work. We approved to offer this product as supply and apply to insure obtaining the best results from our Artevia™ range.

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General Guidelines

- Artevia™ concrete will behave in a similar way to conventional concrete. Good concrete site practices should always be maintained.
- Ensure that the concrete is ordered at the correct slump / workability for your chosen application.
- The water cement ratio of a concrete has significant impact on the color. The addition of water on site is therefore to be avoided as it will change the color and reduce the strength of the concrete.
- A well compacted sub-base is essential to stability of a new slab. Sub-base should be at least 100mm thick and equal in depth of the concrete.
- Ensure consistency in placing and finishing as variations can affect color. Different placing and finishing techniques will affect the final finishing.
- It is recommended to seal the slab surface with clean acrylic sealer in order to protect against staining.

- Artevia™ Exposed uses Micro fibers to minimize plastic shrinkage cracking

Safety Precautions:

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UltraTM series

Hydraumedia



Hydraumedia Concrete is an ideal solution for surface and storm water management. Typically containing 15-30% void space, it allows water to pass directly through it.

Where to use:

- Parking areas.
- Street and roadways shoulders.
- Patios, driveways and walkways.
- Recreational areas.
- Erosion control.

Advantages:

- Can be part of a cost-effective Sustainable Urban Drainage System (SUDS).
- Eliminates the need for detention ponds and any other costly storm water management.
- Allows for more efficient land development.
- Mitigates surface pollutants.

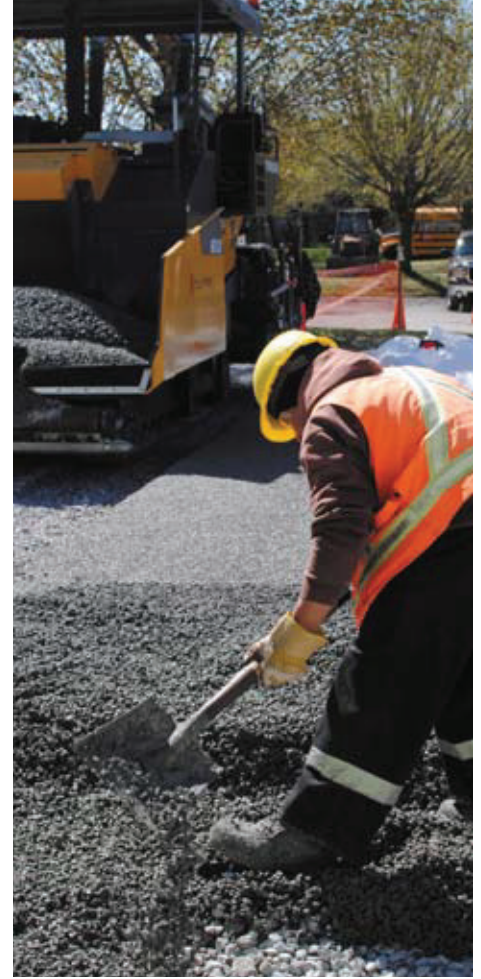
Technical Features:

- Consistence class S2-S3.
- Unit weight is up to 75% less than conventional concrete.
- Workable for up to 90 minutes.
- Compressive strength of 10-25 Mpa.
- Flexural strength of 1-3 Mpa.
- Excellent permeability.
- Available with integral color.

Safety Features:

- Reduces glare from wet pavements.
- Eliminates water accumulation from heavy rain.
- Reduces the heat island effect and reflects light.

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Recommendations

The standard rules for good concrete practice and placing must be strictly observed with proper curing procedures as required by normal concrete mixes.

Design:

There are two Factors that determine design thickness:

- Hydraulic properties such as permeability and volume voids
- Structural properties such as tensile strength

Select appropriate material properties and thickness for:

- Hydrological requirements
- Anticipated loadings
- The larger of these values governs design thickness.

Subgrade and subbase preparation:

- Consult geotechnical engineer
- Uniform subgrade support
- Larger of two values governs design thickness
- Compact subgrade to 90-95% of the optimal density
- Increasing compaction decreases permeability

Construction

- Not difficult to place
- Different from conventional concrete
- Stiff consistency and short sitting time require specialist handling and placement

Transportation

- Access to jobsite should be checked before delivery as trucks need access to all areas of the slab.

Placement

- Concrete to be placed within 90 minutes
- Visually inspect consistency
- Placement should be continuous and rapid
- No pumping
- Can be power laid

Striking off

- Conventional forms to be used
- Vibrating screeds are commonly used for strike off
- Strike off should be 15-20 mm above the forms to allow for compaction
- Do not over vibrate the top surface

Compaction

- Compact with steel rollers to height of forms
- Hand tamp near edges and other places rollers cannot reach

- Complete compaction within 15 minutes of placement
- No floating or trowelling

Jointing

- 6m spacing required
- Depth of joint – ¼ slab depth
- Joint immediately after compaction (preferably to use pre-inserted jointing profiles)

Curing & Protection

- Fog mist the surface within 20 minutes of compaction
- Cover with thin plastic sheeting 20 minutes after placement and leave in place for 7 days
- Curing compounds may also be used

Maintenance

- Minimal maintenance required
- Design site to minimize flow of soil and leaves to pavement
- Vacuum annually or as frequently as possible, alternatively try pressure washing.

Safety Precautions:

The use of safety goggles, gloves and suitable footwear is recommended when placing concrete.



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LAFARGE
لافارج

UltraTM series

Stabilized MorPlast



Stabilized MorPlast is a high quality plaster batched in Lafarge's concrete plant, delivered to site ready to use. No addition of water or other raw materials is required on site.

The product will ensure that you receive the finest quality of plaster mortar on site, allowing excellent workability for up to 36 hours. However, it is also like conventional Mortar in that it will begin the setting process once in contact with absorbing substrate (bricks, concrete block, etc.).

The product does not require additional mixing provided it is kept covered with plastic or HDPE (high density polyethylene sheet) while not in use.

The product can be also batched with Artevia colours. Should Artevia MorPlast be used for plaster it is advisable to put on a clear coat sealer to prevent moisture ingress.

Benefits:

- Ready to Use**
 Stabilized MorPlast is batched in a Lafarge concrete's plant and supplied right to the job site.
- Consistent High Quality**
 The dosage and the compressive strength of the Stabilized MorPlast are guaranteed when manufactured in Lafarge plants with advanced computer batching systems.
- Reduce Construction Time**
 Stabilized MorPlast allows efficient utilisation of the labor force as no mixing is required on site.

• **Reduction in Waste**

On site, waste is significantly reduced as, unlike traditional site mixed mortar, the product keeps its workability for up to 36 hours and can be transported anywhere within the site.

• **Significant Productivity Savings & Hidden Costs Reduction**

Traditional mixing and transport costs of raw material (sand, cement bags, etc.) are eliminated.
Reduction of hidden costs associated with traditional site mixed mortar such as electricity, water, wastage and downtime.

• **Optimized Site Space Utilization**

Stock of cement bags and sand is no longer needed. Raw material storage is removed, creating more space for project activity and allows project managers to meet local regulation.

• **Prevention of Material Theft**

No raw material stock required on site any more.

• **Deliveries**

Stabilized MorPlast can be supplied in the required quantities with a minimum quantity of 1m³.

Lafarge can provide mortar tubs (plastic containers) that are designed for its mortar products. The mortar tub has 0,33m³ capacity and can be lifted with crane.



Types of Mortar	Classification according to : EN 998-1: 2003	Compressive Strength (Mpa) at 28 days	Workability hours	Recommended Applications
MorPlast M05	CSII (4 Mpa)	5 Mpa	12 hours	Internal
MorPlast M07	CSIII (6 Mpa)	7 Mpa	36 hours	External

“We aim to deliver an excellent customer experience through service, quality, accountability and value“

General Guidelines

Logistics

- Stabilized MorPlast is normally delivered early in the morning, before the beginning of the workday. Alternative delivery times can be arranged on request.
- Stabilized MorPlast should be stored on site in tubs or containers that should remain covered until the mortar is used.
- Lafarge is able to provide 0.33m³ mortar tubs that are designed to allow full flexibility to locate and supply Stabilized MorPlast to multiple locations on site.

Precautions of Use

- Never use stabilized MorPlast for screeds, paving or on any non-porous materials.
- When not being used for extended periods of time, cover the mortar with a plastic sheet and 1 cm layer of water. This residue water may be mixed into the mortar before the next use.
- Never remix mortar with water after the commencement of setting time.

Authority

Stabilized MorPlast comply with: JS 10036-part 1-2007 and EN 998-1 2008

Safety Precautions:

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Ultra™ series

Ultra Flow Concrete



Improve the flow without adding water:

Lafarge offers customers products to increase the productivity of their crews as well as maintain the quality of concrete.

Program:

Use a simple way to achieve changes to the slump of your concrete to adapt to the conditions of your particular project or structure. With Flow Concrete, you can order 3 levels of slump change with different strength ranges.

Applications:

Flow Concrete makes the concrete physically easier to place without the addition of water. Use Flow Concrete for:

- High strength concretes.
- Vertical walls and columns.
- Structures with heavy steel reinforcement.
- Floor slabs and exterior flatwork.
- Floor slabs for under floor heating systems.

Advantages:

The cost of typical concrete materials and placing is a small component of the total cost of your structure. The potential costs of repairing defects are very high. Use Flow Concrete to:

- Maintain crew productivity everyday.
- Help prevent costly repairs and scheduling issues from defects.
- Minimize concrete segregation when placing through steel.
- Speed placement of concrete overall.
- Improved tolerances of floors and slabs
- High Quality finishes
- High Quality off-shutter finishes

Technical Features:

Flow Concrete maintains all performance properties without degrading the quality or voiding warranty with the use of excess water.

- Maintaining strength performance.
- Maintaining permeability and air void structure.
- Minimizing plastic shrinkage and potential for segregation.
- Not affecting color or chloride contents.

Improve productivity without affecting quality:

Concrete is clearly specified with criteria for the in-place performance of the structure. The compressive strength, the air-void ratio, the aggregate sizing, and more. Flow Concrete allows you to maintain all the specifications that are demanded but still improve crew productivity and ensure that work gets done correctly the first time.

Flow retention is affected by ambient temperature as well as other properties of the concrete required..

Product Group Base Design Slump S4 (100-150 mm)	Flow - Level 1 F4: 490 - 550mm	Flow - Level 2 F5: 560 - 620mm	Flow - Level 3 F6: 630mm and above
< 20 Mpa	√	-	-
20 - 40 Mpa	√	√	√
45 MPa and above	√	√	√

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General Guidelines

- Flow concrete will behave in a similar way to conventional concrete. Good concrete site practices should always be maintained.
- Ensure that the concrete is ordered at the correct flow / workability for your chosen application.
- The water cement ratio of a concrete has significant impact on the strength and performance. The addition of water on site is therefore to be avoided.

Safety Precautions:

The use of safety goggles, gloves and suitable footwear is recommended when placing concrete.



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UltraTM series

WaterTight



WaterTight is an integrated full bodied waterproofing system that includes a pore blocking system to protect the concrete from water penetration. Ideal for foundations, basements and structures in continuous contact with water or abrasive environments.

Applications:

The product can be used in many specific construction types, including:

- All underground applications.
- Reservoirs.
- Sewage and water treatment tanks.
- Tunnel and subway systems.
- Swimming pools.
- Foundations.
- Basements.
- Marine structures.
- Car parks.
- Commercial roof structures.

Advantages:

- Cost effective, reduces labour costs and possibly requirement for external membranes.
- Easy to place.
- Increased durability for the structures in constant contact with water.
- Low permeability, less than 35mm of water penetration under pressure.
- Helps stop corrosion of steel reinforcement.
- Reduce problems with the water penetration in the structures (humidity stain).
- Achieves specific ranges for coulomb ratings for permeability.
- Adds a permanent integral crystalline structure that fills capillaries and pores and can bridges micro-cracks up to 0.4 mm.
- Additional protection against the attack of aggressive agents, like a consequence of the capillary absorption reduction.

Technical features:

- Water cement ratio 0.4-0.55.
- Consistence class S2 to S4.
- High strength performance.
- Can be pumped.

product	water permeability*	water Permeability at 28 day	Air Entrainment	Max W/C Ratio	Slum ± 25mm	Notes.
Watertight 35	< 50 mm	less than 3000 coulomb	4-7%	0.55	125	Not suitable for Saturated conditions
Watertight 40	< 30 mm	less than 2000 coulomb	4-7%	0.45	125	suitable for Saturated and non saturated conditions
Watertight 45	< 20 mm	less than 1000 coulomb	5-8%	0.40	125	Concrete for which protection against corrosion and reinforcement is deemed critical

* Permeability less than 10mm according to request

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General Guidelines

- WaterTight concrete will behave in a similar way to conventional concrete. Good concrete site practices should always be maintained.
- Ensure that the concrete is ordered at the correct slump / workability for your chosen application.
- The water cement ratio has significant impact on the performance. The addition of water on site is therefore to be strictly avoided as it altered the performance of the product.

Safety Precautions:

The use of safety goggles, gloves and suitable footwear is recommended when placing concrete.



Lafarge Ready Mix Concrete Iraq

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Ultra™ series

Fibre



Fibre concrete is Lafarge's polypropylene micro fibre reinforced ready-mixed concrete.

Where to use:

- Driveways
- Pathways
- Sprayed shotcrete concrete
- External paving
- Precast elements
- Cold-floors
- Any other concrete application where enhanced properties are required
- Floors (Industrial , commercial or domestic)

Advantages:

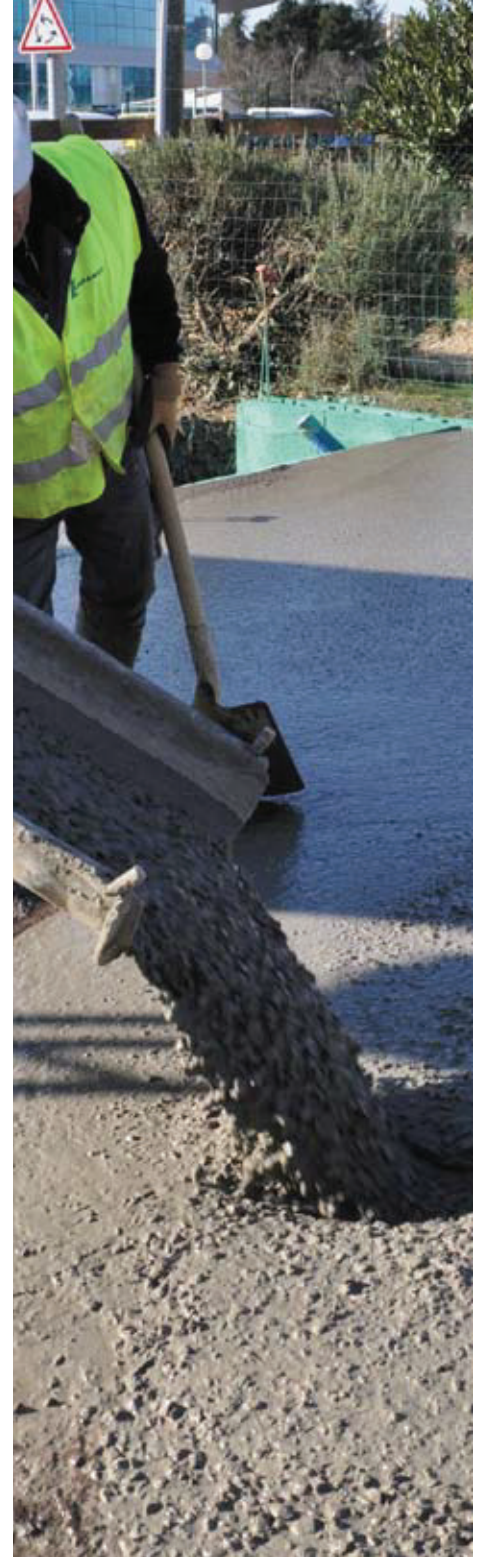
- Reduces the possibility of spalling of concrete edges
- Reduces labour required
- Simplifies the construction process
- Improved concrete properties
- Improved impact and abrasion resistance
- Turns concrete into a composite material that slows crack formation and reduces plastic shrinkage cracking
- Impact and wear-resistance can also be enhanced
- Reduce the overall bleed and consequential settlement cracking

Minimum Standards for Ultra™ Fibre Concrete:

- **Grade of Concrete:** Greater than 15Mpa
- **Cement Type:** Any combination
- **Aggregate Size:** Available with all standard aggregate sizes
- **Consistence:** S2 and greater (for lower workability please seek guidance from Lafarge's technical team)
- **Fibres:** 3mm, 6mm, 12mm, 19mm

- Drastically reduces the potential for plastic shrinkage cracking to occur by constantly redirecting micro cracks each time a fibre filament is encountered.
- Reduces the permeability of concrete through the reduction in bleed water, which reduces the development of capillary pores associated with bleed water. This reduction of pores also decreases the absorption properties and sustainability.
- Greater impact resistance: Impact damage is common in concrete, particularly at the surface and edges of elements and saw cuts. Micro fibres reduce the spalling of the concrete by providing secondary reinforcing.
- Improved abrasion resistance. As micro fibres control bleed water migration, the possibility of the fine cement and sand particles segregating from the mix is drastically reduced. This promotes an efficient hydration of cement which improves the bonding of the cement matrix and achieves a tougher more durable concrete surface
- Improved freeze thaw resistance. The ability of the concrete to take up water is reduced as a consequence of the lower permeability and absorptivity associated with reduced bleeding. Any water that is taken up and freezes will generate tensile force as it expands. These expansion forces are resisted by the micro fibres in the concrete.

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General Guide lines

- The standard rules for good concrete practice and placing must be strictly observed with proper curing procedures as required by normal concrete mixes.
- The concrete will behave in a similar way to conventional concrete.
- The concrete will be delivered in a uniform consistency. It is advisable not to add water on site.
- The concrete workability for your chosen application must be agreed at the time of ordering.

Safety Precautions:

- The use of safety goggles, hard hat, ear defenders and gloves is recommended when placing concrete.



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UltraTM *series*

Stabilized Morbricks



Stabilized Morbricks is a series of different grades of high quality premixed mortar batched in Lafarge's concrete plant, delivered to site ready to use. No addition of water or other raw materials is required on site.

The product will ensure that you receive the finest quality of mortar on site, allowing excellent workability for up to 36 hours. However, it is also like conventional Mortar in that it will begin the setting process once in contact with absorbing substrate (bricks, concrete block, etc).

The product does not require additional mixing provided it is kept covered with plastic or HDPE (high density polyethylene sheet) while not in use.

Benefits:

- **Ready to Use**
Stabilized Morbricks is batched in a Lafarge concrete plant and supplied right to the job site.
- **Consistent High Quality**
The dosage and the compressive strength of the Stabilized Morbricks are guaranteed when manufactured in Lafarge plants with advanced computer batching systems.
- **Reduce Construction Time**
Stabilized Morbricks allows efficient utilization of the labor force as no mixing is required on site.
- **Reduction in Waste**
On site, waste is significantly reduced as, unlike traditional site mixed mortar, the product keeps its workability for up to 36 hours and can be transported anywhere within the site.

- **Significant Productivity Savings and Hidden Costs Reduction**
Traditional mixing and transport costs of raw material (sand, cement bags, etc.) are eliminated.

Reduction of hidden costs associated with traditional site mixed mortar such as electricity, water, wastage and downtime.

- **Optimized Site Space Utilization**
Stock of cement bags and sand is no longer needed. Raw material storage is removed, creating more space for project activity and allows project managers to meet local regulation.
- **Prevention of Material Theft**
No raw material stock required on site any more
- **Deliveries**
Stabilized Morbricks can be supplied in the required quantities with a minimum quantity of 1m³.

Lafarge can provide mortar tubs (plastic containers) that are designed for its morbricks products. The mortar tub has 0.33m³ capacity and can be lifted with crane.

Types of Morbricks	Classification according to: EN 998-1: 2003	Compressive Strength (Mpa) at 28 days	Workability Hours	Recommended Applications
Stabilized MorBricks M03	M2.5	3 Mpa	12 hours or 36 hours	Concrete block / brick laying for non structural masonry walls
Stabilized MorBricks M05	M05	5 Mpa		Concrete block / brick laying for non structural masonry walls
Stabilized MorBricks M10	M10	10 Mpa		Concrete block / brick laying for structural masonry walls



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General Guidelines

Logistics:

- Stabilized Morbricks is normally delivered early in the morning, before the beginning of the workday. Alternative delivery times can be arranged on request.
- Stabilized Morbricks should be stored on site in tubs or containers that should remain covered until the mortar is used.
- Lafarge is able to provide 0.33 m³ mortar tubs that are designed to allow full flexibility to locate and supply Stabilized Morbricks to multiple locations on site.

Precautions of Use:

- Never use stabilized Morbricks for screeds, paving or on any non-porous materials.

- When not being used for extended periods of time, cover the morbricks with a plastic sheet and 1 cm layer of water. This residue water may be mixed into the morbricks before the next use.
- Never remix morbricks with water after the commencement of setting time.

Usage: volume per m³:

Blocklaying (including 10% of losses)

Blocks dimensions LxDxH (cm)	No. of blocks/m ³ of morbricks
40 x 10 x 20	600
40 x 15 x 20	500
40 x 20 x 20	400

Authority:

Stabilized Morbricks comply with:

- JS 10036-part1-2007
- EN 998-12003
- ASTM C270-91a-standard specification for Mortar for Unit Masonry

Safety Precautions:

The use of safety goggles, gloves and suitable footwear is recommended when placing concrete.



Lafarge Ready Mix Concrete Iraq

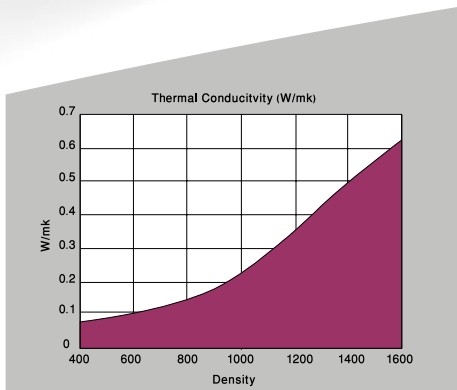
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UltraTM series

FOAM CONCRETE



Description:

This is lightweight concrete that is produced by the addition of a synthetic or protein based air entrainer which is added to the concrete with the use of a foam generator. The admixture entrains an inert bubble in the concrete thus reducing the density of the concrete.

The foam can be added at the plant if traveling time is less than 30 minutes or on site – it is however, preferable to add the foam on site. If adding on site water and electricity must be available.

Where to use:

Foam concrete can be used in the following applications:

- Filling of trenches in roadways.
- Filling of disused tanks.
- Void filling.
- Backfill below under floor heating.
- Lightweight topping and slopping layer.
- Insulation.
- Arrestor beds, particularly airports.

Advantages:

- Quick setting (can be accelerated to allow for black-topping within 4 hrs.
- Low density.
- High workability.
- No compaction required.
- Super insulation properties, thermal conductivity (0.1- 0.3)W/m.k
- In case of trench re-instatement-no sagging afterwards.
- Flowable.
- Overall lower maintenance costs.
- Cost effective solution.
- Time saving with backfilling.
- For specific strength and densities enable application of water proof membranes directly without screed protection



Minimum standards for foam concrete

Specified by Dry Density/compression strength	400 kg/m ³ /0.5 MPa 600 kg/m ³ /1.0 MPa 800 kg/m ³ /1.5-2.0 MPa 1000 kg/m ³ /4.0 MPa
Cement Type	Any combination
Aggregate Size	No stone is added to this mix-only sand
Slump	Collapse

- Higher class of strength and or density can be achieved upon request.

Important recommendations:

Ultra foam concrete is not suitable for structure that may undergo chronic movement.

Construction joints and tie holes require additional application. Details can be received from your Lafarge representative.

Before ultra foam concrete is used a detailed investigation must be undertaken to ensure that the structure will be waterproof. This must be done in conjunction with the consulting Engineer as certain design changes may be required.

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General Guide lines

Note :

- Have to organize foam generator before (48 Hr notice required Can be pumped due to low pump pressure (48 Hr notice required) – maximum height of pumping should be discussed.

- This solution cannot be used as a wearing course and will need to be covered afterwards with a screed, or water proofing membrane.
- Foam concrete should be cured for 3 days with water after pouring.

Safety reactions:

- The use of safety goggles and gloves is recommended when placing concrete.



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