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## **LAFARGE ACCELERATES ITS INNOVATIONS IN CONCRETE AND LAUNCHES TWO NEW PRODUCTS ON AN INTERNATIONAL SCALE: EXTENSIA™ AND CHRONOLIA™**

Lafarge announces the launch of two new value-added concrete products, which represent a real scientific leap forward in the rapidly transforming construction sector: Extensia™ and Chronolia™ are Lafarge's new responses to the needs of construction professionals.

Extensia™ and Chronolia™ are high-performance concrete products, which were developed thanks to the know-how of the Lafarge Research & Development teams and their advanced scientific knowledge of the behaviour of concrete at every stage of production, implementation and lifespan. It took several years of research to develop a completely unique methodology for formulating concrete that ensures impeccable product regularity and quality using locally available raw materials.

Extensia™ and Chronolia™ improve construction site working conditions, with each product designed to meet a specific challenge in the building sector. Initially, these two value-added concrete products will be rolled out in France, the United Kingdom and North America.

### **CHRONOLIA™, THE CONSTRUCTION SITE BOOSTER**

Chronolia™ combines two apparently contradictory features requested by customers: a concrete product that can be transported and handled like conventional fluid concrete, and which, once laid, very rapidly develops high mechanical strength.

Chronolia™ responds to these two requirements: whereas between 12 and 20 hours are needed before formwork can be removed with conventional concrete, Chronolia™ becomes resistant in record time and formwork can be removed just four hours after manufacture. With the same workability as a conventional ready-mix concrete, it can be used on all construction sites, as well as to repair road surfaces and civil engineering structures, which means they can be brought back into service very rapidly. With such a rapid setting time, Chronolia™ makes it possible to reduce possible disruption caused by construction sites and increase efficiency and productivity. It also means that it is possible to rethink the organization of a building site before work begins, in terms of deadlines, cycle times, the use of equipment and costs.

### **EXTENSIA™, THE NEW DIMENSIONS OF CONCRETE**

With conventional concrete, the maximum possible joint-free surface area is 25m<sup>2</sup>. Extensia™ enables the construction of surface areas of up to 400m<sup>2</sup> without joints, thus limiting the problem of cracks and their consequent maintenance costs. Extensia™ was specially designed for concrete flooring applications, by nature subject to heavy traffic and storage loads, and it offers increased resistance compared with conventional concrete and better performance in terms of abrasion, flexion and traction. This allows a reduction in slab thickness compared to conventional concrete. With a lower quantity of raw materials employed and no need for steel mesh or steel fibers, Extensia™ makes it possible to reduce the CO<sub>2</sub> emissions associated with the production of concrete flooring.



## THE INEXHAUSTIBLE PROPERTIES OF CONCRETE

Concrete, the second most used product in the world, is a mixture of cement, crushed stone (aggregates) and sand, to which water is added. This material, the first formulations of which date back to the 1<sup>st</sup> century B.C., has a host of qualities, particularly in terms of resistance, durability, thermal inertia and sound insulation.

The techniques and instruments developed over the last twenty years have enabled the adoption of a scientific approach to research into cement and concrete on a nanometric scale. This has revealed the great technical complexity of concrete in numerous aspects (physical and chemical phenomena, sensitivity to external parameters, development of mechanisms over time, etc.).

In this way, Lafarge researchers have been able to identify and gain a better understanding of the different phenomena underlying the behaviour of concrete. Knowledge that has led to the development of ultra-high performance concrete products that are more ductile, more durable and more resistant, and self-placing concretes, which have a more esthetic appearance and are easier to use on work sites. These materials enable Lafarge to respond to the ever more complex demands of architects, engineers, owners and contractors, while working with the other players in the sector to re-think construction systems and design buildings that consume less energy and, therefore, have a reduced ecological footprint.

## ADDITIONAL INFORMATION

**Lafarge** is the world leader in building materials, with top-ranking positions in all of its businesses: Cement, Aggregates & Concrete and Gypsum. With 71,000 employees in over 70 countries, Lafarge posted sales of Euros 17 billion in 2006.

Lafarge has been committed to sustainable development for many years, pursuing a strategy that combines industrial know-how with performance, value creation, respect for employees and local cultures, environmental protection and the conservation of natural resources and energy. Lafarge is the only company in the construction materials sector to be listed in the 2007 '100 Global Most Sustainable Corporations in the World'. To make advances in building materials, Lafarge places the customer at the heart of its concerns. It offers the construction industry and the general public innovative solutions bringing greater safety, comfort and quality to their everyday surroundings.

Additional information is available on the web site at [www.lafarge.com](http://www.lafarge.com).

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