The ultimate high early strength concrete
In the fast moving, competitive world of construction even the slightest delay can result in costly penalties. In many applications such as civil engineering works and road surface repair, the need to quickly restore services to normal is paramount in order to keep disruption to an absolute minimum.

To meet this challenge Lafarge Tarmac offers a range of technologically advanced, easy to place readymix concretes that ensure fast turnaround and site efficiency.

Lafarge Tarmac Chronolia delivers a range of concretes that provide both rapid setting and high early strength properties resulting in increased turnaround and productivity.

Chronolia is as easy to place as conventional concrete and develops high strength soon after pouring. Unlike other concretes that require between 12-20 hours before formwork can be removed, Chronolia becomes effective in as little as four hours allowing construction to continue.

A range of ready-formulated Chronolia products are available to meet all different types of strength requirements, with setting times ranging from four hours to 48 hours.

ULTIMATE EXPERIENCE – SPORTPARK, LOUGHBOROUGH UNIVERSITY

The use of Chronolia for the construction of the central core and walls of the SportPark, on Loughborough University Science and Enterprise Parks, allowed formwork to be removed after just two hours, instead of 2-3 days.
ULTIMATE WORKABILITY

Due to its technologically advanced formulation Chronolia offers similar workability to conventional concrete without compromising early strength.

BENEFITS

Less disruption and cost penalties
Attains strength within hours, a crucial consideration when early trafficking is necessary and delays can incur severe financial penalties.

Accelerate construction
In relation to the rotation of formwork Chronolia 4hr can double the number of daily rotations for walls, columns, slabs on grade and grade beams, significantly reducing project length.

Easy to place
Chronolia is as easy to place as conventional concretes, meaning minimal effort to the contractor.

More flexible construction schedules
Users can choose the specific time the guaranteed early strength is achieved e.g. 24 hours or 48 hours, enabling them to make up lost programme time due to weather, breakdowns etc. This is essential in time-critical projects.

Bespoke concrete solutions
To offer further cost and value engineering benefits, Chronolia can also be combined with macro fibres to replace ‘A’ grade crack-control mesh, providing a very robust concrete solution.

Time saving
Significant time is saved optimising building processes on all construction sites.

Innovative technology
Chronolia works with innovative accelerating systems, enabling good durability, performance and acquisition of long-term strength.

Durability
Chronolia achieves both high early strength and high ultimate strength, providing a very durable concrete.

HOW IT WORKS

Chronolia’s exceptional early strength gain is possible thanks to the technological advances in its formulation.

Following extensive research and development the microstructure of the concrete is optimised at an early age by fine-tuning the growth of the initial hydration process. This provides the early strength without disturbing the mineralisation process through the addition of additives.

It’s the introduction of this innovative accelerating system that ensures early strength and long-term durability are achieved.
ULTIMATE VERSATILITY
A range of strengths can be reached between 4 and 48 hours depending on the specific application.

APPLICATIONS

TYPICAL APPLICATIONS
Chronoria is specifically designed for use in applications where early trafficking is required, where programme times need recovering following delays and in areas where disruption needs to be kept to a minimum. Example applications include car parks, access roads, floor areas, airports, dockyards, rail networks and water control structures where long-term water diversion is impractical.

A range of ready-formulated concretes are available in the range:

<table>
<thead>
<tr>
<th>Product</th>
<th>Typical compressive strength (at specified time)</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronoria 4hr</td>
<td>10 N/mm²</td>
<td>For removal of formwork after four hours</td>
</tr>
<tr>
<td>Chronoria 15hr</td>
<td>10 to 30 N/mm²</td>
<td>Where high strength is specified after 15 hours</td>
</tr>
<tr>
<td>Chronoria 24hr</td>
<td>10 to 40 N/mm²</td>
<td>Where high strength is specified after 24 hours</td>
</tr>
<tr>
<td>Chronoria 48hr</td>
<td>10 to 50 N/mm²</td>
<td>Where high strength is specified after 48 hours</td>
</tr>
</tbody>
</table>
Corus Works, Lackenby.

**CHALLENGE**

Corus, one of the UK’s leading steelmakers, required renewal work to be carried out at their Lackenby works. Primarily, this consisted of the renewal of the hardstands to the hoppers that feed the furnaces. The renewal process historically resulted in a 7-10 day delay in production, costing thousands of pounds in downtime.

**SOLUTION**

Following discussions with the sub-contractor, Lafarge Tarmac advised using a Chronolia early strength mix that would allow production to be up and running in just two and a half days. 25m³ of Chronolia was supplied on Tuesday at six in the morning, and by Thursday, 80-tonne trucks were running on the new slab.

**RESULT**

By using Chronolia the client completed the work on schedule and within a much faster time frame compared to conventional concrete. The newly poured hardstands were able to be trafficked much faster, resulting in a big reduction in both downtime and subsequent production losses.

Network Rail WY10 Bridgeworks, Enderby.

**CHALLENGE**

For Network Rail, implementing a scheme to increase the height of all the bridges on the Nuneaton to Felixstowe line presented numerous challenges. For the bridge at Enderby, it was necessary for the concrete support structure to have sufficient strength to take the load of the new bridge just seven days after the supporting lintels had been cast.

**SOLUTION**

Following consultations with the client, Chronolia was chosen for the bridgeworks. A backup plant with a duplicate mix using the same materials was also organised, as there was no room for error due to the finite rail possession. During one 24-hour period the old bridge was demolished and the new one slid into place.

**RESULT**

By using Chronolia the client completed the work on schedule and within a much faster time frame compared to conventional concrete. The newly poured hardstands were able to be trafficked much faster, resulting in a big reduction in both downtime and subsequent production losses.
Lafarge Tarmac is committed to providing construction materials and solutions that make a positive contribution to the built environment. By working closely with our customers, together we can reduce the environmental footprint of projects and deliver innovative, more sustainable solutions.

We take a whole life approach, addressing not only the extraction, manufacture and transport of our products but also consider their sustainable performance in use and opportunities for reuse and recycling at end of life. We use management systems certified to ISO 9001, ISO 14001 and OHSAS 18001 across our operations to continuously improve social, economic and environmental performance.

Our commitment to support our customers and provide sustainable solutions is further demonstrated by certification across our product range to BES 6001, the framework standard for Responsible Sourcing and 5* accreditation in the Achilles BuildingConfidence scheme.

**Chronolia Concretes**

- Very early strength gains means fast construction. This speeds up build times and therefore has the potential to reduce cost and disruption associated with the project.
- Early removal of formwork enables the reuse of formwork within the construction process whether it be on site or at a precast concrete manufacturing facility, contributing to considerable time savings.
Combining industry-leading innovation and market-leading supply and distribution, together we offer the ultimate range of products and services:

**Aggregates** for concrete, asphalt and mortar production, sub-base construction, capping, drainage and landscaping.

**Asphalt and Contracting Services** for infrastructure, motorways, roads, car parks, footpaths, sports facilities, stadiums and runways.

**Readymix Concrete and Cement** for the construction of homes, power stations, water treatment works, freight depots, ports, office buildings and shopping malls.

**Lime and Powders** for water purification, soil stabilisation, land reclamation and the manufacture of iron and steel, plastics, glass, pharmaceuticals and animal feed.

Our solutions play a pivotal role in delivering the services on which we all rely. Fresh food on supermarket shelves. Clean water on tap. Electricity at the touch of a button. Maintaining these services is a big responsibility. And one that we don’t take lightly. We work closely with clients, contractors and partners across the supply chain to make sure that the solutions we deliver are not only practical and cost-effective, but also long-lasting and sustainable.

All of our products are responsibly sourced in accordance with BES 6001. Our asphalt and concrete mixes increasingly contain up to 50% recycled content, and we are the UK’s leading supplier of recycled construction materials.

Delivering sustainable solutions is what our business is all about. It’s what we do. It’s what Britain’s built on.

**Readymix Concrete**

Lafarge Tarmac is the No 1. supplier of innovative readymix concrete solutions:

- 1,000’s of unique formulations
- 90+ concrete production facilities across the UK
- 10 mobile batching plants
- 17 regional sales and technical teams
- 560 employees
ULTIMATE REMOVAL

Formwork can be successfully removed in as little as four hours with the use of Chronolia 4hr.

FAQs

What is the difference between Chronolia and conventional concrete?
Chronolia’s technologically advanced formulation provides 28 day strength in as little as 15 hours.

How many Chronolia products are available?
There are four types of Chronolia - 4hr, 15hr, 24hr and 48hr.

How does it reduce construction time?
Chronolia 4hr can double the number of daily rotations for walls, columns, slabs on grade and grade beams, significantly reducing project length. Chronolia’s early strength also enables contractors to recover programme delays by switching to an alternative formulation during construction. Naturally, on schedule delivery of the project also ensures no costly penalties are incurred for missing deadlines.

What are the potential cost savings?
For contractors less time on site means lower labour costs and equipment costs, whilst their customers benefit from high strength, durable constructions that require less repair work over time. Chronolia’s early strength also enables contractors to recover programme delays by switching to an alternative formulation during construction. Naturally, on schedule delivery of the project also ensures no costly penalties are incurred for missing deadlines.

Where is Chronolia most effectively used?
Chronolia is best used when early trafficking is required, construction programme times need recovering and where early strength is essential. Example applications include car parks, access roads, floor areas, airports, docks and docks, railway networks and water control structures.

Are bespoke Chronolia products available?
We can design a unique Chronolia formulation to meet the specific needs of almost any project. Simply get in touch with us or call the customer helpline.

What are the sustainability benefits?
Thanks to its superior early strength and durability, Chronolia is proven to last longer than conventional concretes in similar applications. All Chronolia products are manufactured in accordance with BES 6001 standards.

For more information about Lafarge Tarmac Chronolia contact your local regional office or visit lafargetarmac.com/chronolia
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