



Imagine building better

Explore the newest addition to our WALOCEL™ Cellulose Ether product range: X-LIS

*Introducing **WALOCEL™ X-LIS**, a high-performance cellulose ether designed for premium cementitious adhesive formulations.*

Dow Construction Chemicals leverages over 40 years of industry experience to offer innovative products for the building and construction industry, including a portfolio of cellulose-based products for construction materials. WALOCEL™ Cellulose Ethers offer advanced performance features, such as rapid temperature-stable, high-water retention capabilities, good workability and adhesion strength. These benefits make WALOCEL™ Cellulose Ether products a good choice for a wide range of cement-based applications, such as cement-based tile adhesives (CBTA), External Thermal Insulation Composite Systems (ETICS), and skim coats.

Our recent innovation, **WALOCEL™ X-LIS**, is a special cellulose ether portfolio developed for use in premium cementitious adhesive formulations (e.g., tile adhesive or adhesive for ETICS). It is specially designed to minimize the delay in cement setting caused by composite cements containing supplementary cementitious materials (SCM), such as limestone, slag, or fly ash, thereby supporting the decarbonization of high-quality adhesives used in building and construction materials.

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Addressing cement hydration challenges

Cement production contributes to 8% of the world's CO₂ emissions*, increasing pressure on cement manufacturers to reduce their product carbon footprint (PCF). One of the strategies adopted worldwide is incorporating supplementary cementitious material (SCM) into cement composition. However, this approach can delay cement hydration due to reduced clinker content.

WALOCEL™ X-LIS Cellulose Ether has been developed to reduce the impact on cement hydration, improving early strength while preserving final strength in new low CO₂ emission cements with lower-clinker content.

WALOCEL™ X-LIS supports formulators using low-carbon alternatives to Portland cement without compromising mortar performance.

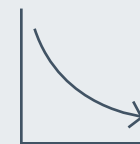
Benefits include:



Reduced cement retardation effect, resulting in shorter setting times, as shown in the ultrasonic graph (figure 2).



Designed to **balance** excellent water retention, sag resistance, open time and preferred workability properties.



Helps to enable **reduction or elimination** of calcium formate (CaFo) accelerators from CBTA formulations.

* Annual CO₂ emissions from cement, 2023



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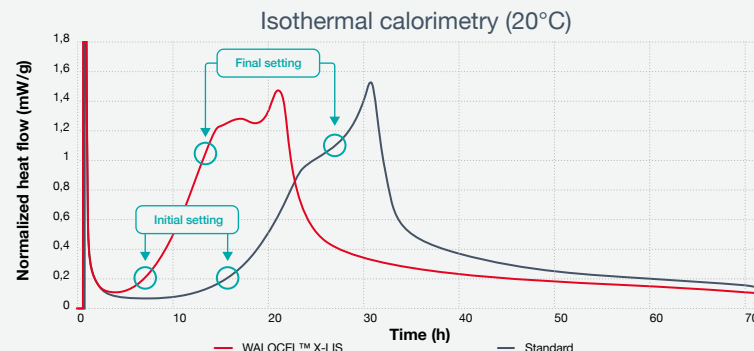


Figure 1 – Mortar prepared with WALOCEL™ X-LIS and Standard WALOCEL™ Methyl Cellulose Ether (MC) in the same amount, viscosity range, and water-to-solid ratio. The isothermal calorimetry graph shows that the end of the acceleration phase can be accelerated up to 14 hours.

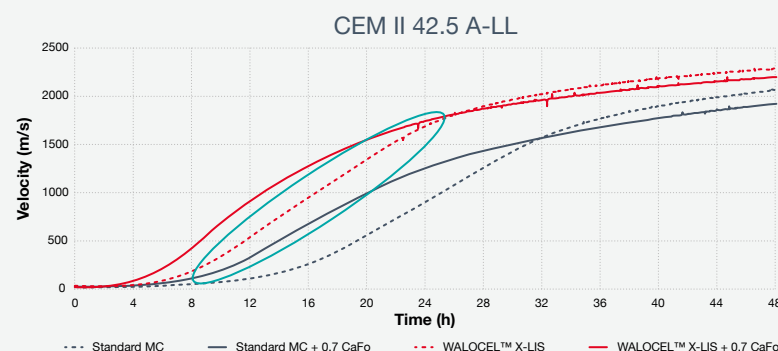


Figure 2 – Mortar prepared with Standard MC, with and without CaFo, compared to WALOCEL™ X-LIS. Ultrasonic curves indicate reduced retardation and shorter setting times.

CBTA formulations were prepared with CEM II A/LL, a widely available low CO₂ emission cement, with and without the addition of calcium formate. Bond strength adhesion tests were performed after 24 hours in accordance with EN 1348. The test results are shown in figure 3.

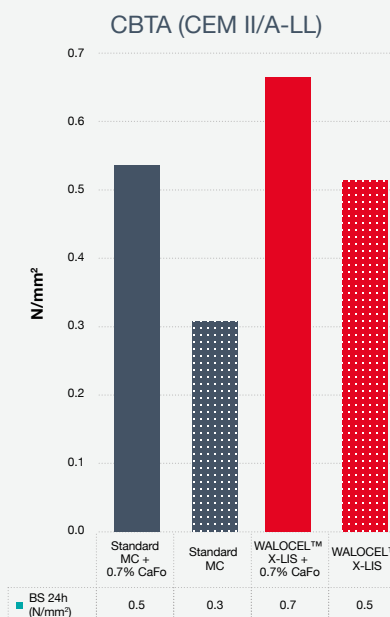


Figure 3 – Bond strength tests after 24 hours for CBTA formulation with and without calcium formate.

Note: Typical values, not to be construed as specifications. Users should confirm results by their own tests.



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Materials science for construction

Dow construction and infrastructure materials help you build better and more sustainably. We're committed to a high-performing, durable, energy-efficient and sustainable future – and we collaborate closely with customers and value chain stakeholders to make it a reality.

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Dow (NYSE: DOW) is one of the world's leading materials science companies, serving customers in high-growth markets such as packaging, infrastructure, mobility and consumer applications. Our global breadth, asset integration and scale, focused innovation, leading business positions and commitment to sustainability enable us to achieve profitable growth and help deliver a sustainable future. We operate manufacturing sites in 30 countries and employ approximately 36,000 people. Dow delivered sales of approximately \$43 billion in 2024. References to Dow or the Company mean Dow Inc. and its subsidiaries. Learn more about us and our ambition to be the most innovative, customer-centric, inclusive and sustainable materials science company in the world by visiting www.dow.com.

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