

**Production of Bio-Concrete Water
Reducer from Lignocellulosic
Biomass**

Advanced Biorefinery Technologies Ltd

At Advanced Biorefinery Technologies Ltd., we are revolutionizing the construction industry with our Bio-Concrete Water Reducer technology. Derived from lignocellulosic biomass, this innovative product enhances the performance of concrete while promoting environmental sustainability. It provides a high-efficiency, eco-friendly alternative to traditional chemical water reducers widely used in construction.

How It Works

Our Bio-Concrete Water Reducer is developed through a multi-step process:

Pre-Treatment

Lignocellulosic biomass, such as agricultural residues, is pre-treated to separate cellulose and other valuable components.

Functionalization

The cellulose undergoes a chemical modification to introduce functional groups that improve its water-reducing capabilities.

Fractionation and Purification

The modified cellulose is refined and purified to achieve consistent quality and performance.

Final Product Development

The bio-based water reducer is formulated into a ready-to-use product for concrete applications.

Key Features and Advantages

High Water Reduction Capacity:

Reduces water usage in concrete mixes by 12–30%, enhancing workability and reducing shrinkage.

Enhanced Strength:

Improves concrete compressive strength, achieving up to 40 MPa at 28 days.

Environmentally Friendly:

Produced from renewable biomass sources.

Cost-Effective:

Provides a competitive and more environmentally friendly alternative.

Applications

Construction Industry:

Suitable for various concrete formulations, including high-performance and ready-mix concrete, to enhance durability and reduce material costs.

Infrastructure Projects:

Ideal for large-scale infrastructure projects requiring sustainable materials, such as bridges, tunnels, and high-rise buildings.

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Sustainability Impact

Our Bio-Concrete Water Reducer not only minimizes water usage in concrete production but also significantly reduces the carbon footprint of construction projects. By leveraging renewable lignocellulosic biomass, we are replacing petrochemical-based additives, contributing to a circular economy and reducing dependency on non-renewable resources.

Why Choose Our Bio-Concrete Water Reducer?

Innovative Green Technology: Combines high performance with sustainability.

Adaptability: Compatible with a wide range of concrete formulations.

Support for Green Building Standards: Helps meet global sustainability goals and certifications such as LEED and BREEAM.

This technology underscores our commitment to creating a more sustainable future for the construction industry, offering a practical solution to reduce environmental impacts without compromising performance. With the Bio-Concrete Water Reducer, we are building a greener tomorrow, one structure at a time.

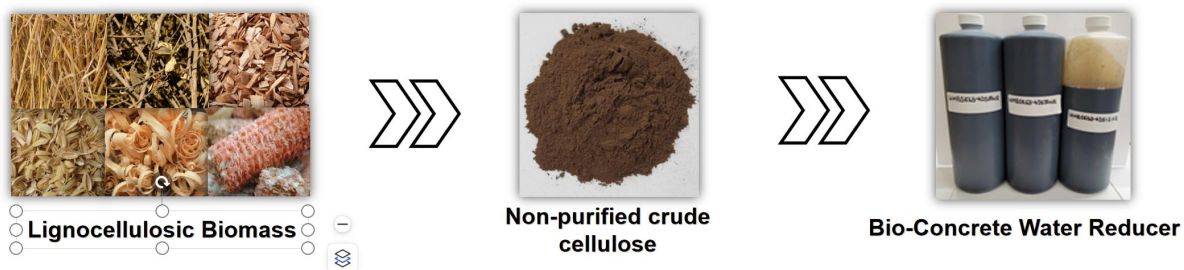


Fig. 1 Production Process of Bio-Concrete Water Reducer