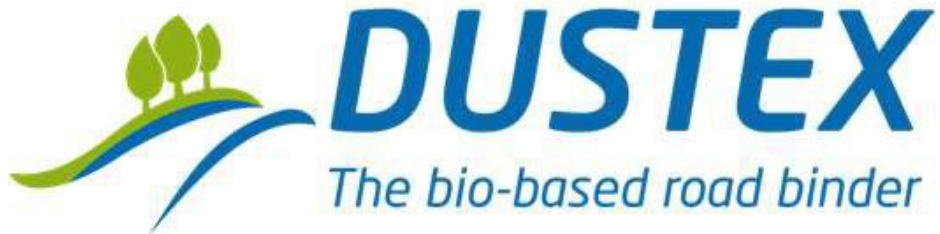




Borregaard



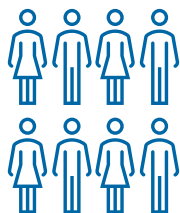
LONG TERM PARTNERSHIP | SUSTAINABLE PRODUCTS | **PROVEN SOLUTIONS**



Borregaard

THE WORLD'S MOST ADVANCED BIOREFINERY

EMPLOYEES



1150

PRODUCTION

Biopolymers
Speciality cellulose
Bioethanol
Biovanillin
Cellulose fibrils
Fine chemicals

800
PRODUCTS

RAW MATERIAL

1 MILLION



m³ Norway Spruce
375,000 tons lignin raw material



BORREGAARD IN THE WORLD

Business in

13

countries

Sales to

100

countries

Sales outside Norway

97

percent



FINANCIAL FIGURES

Turnover

707

million USD

Result EBITDA

177

million USD

Investment

80

million USD

Sustainable alternatives to oil-based chemicals

SPECIALITY
CELLULOSE
& CELLULOSE
FIBRILS

▲ 45% FIBRES



BIOPOLYMERS
& BIOVANILLIN

▲ 30% LIGNIN
(BINDING MATERIAL)

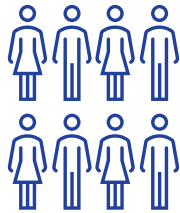
BIOETHANOL

▲ 25% SUGARS



Process optimization for water intense industries

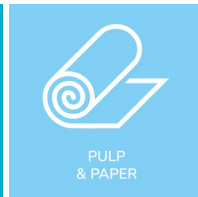
EMPLOYEES



37

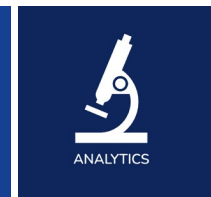
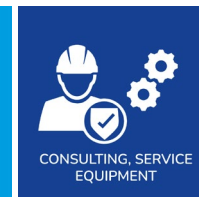
BUSINESS UNITS

3 KEY SCOPES



PORTFOLIO

Products & Systems
Consulting, Service, Equipment
Analytics



REPRESENTED IN

Headquarter in AT

Consultants in
DE, IT, SLO, CZ,
CH, HR, RO, RS,
PL



JOINT VENTURE WITH SNF

World leading producer of water-soluble polymers

Industries: Water treatment, oil and gas, mining,
agriculture, pulp and paper, textiles, cosmetics,
specialty applications



Sustainable Dust Control and Road Stabilisation



Dust Control | Why?



Dust | Health & Safety

Dust reduces visibility, increasing accident risks, and poses serious health hazards through inhalation



Dust | Cost & Maintenance

Effective dust control and maintenance are costly, due to frequent applications and labour-intensive processes



Dust | Non-Sustainable Solutions

Water, increasingly scarce, evaporates quickly, while chloride-based salts harm soil and the environment, making both unsustainable dust control methods





DUSTEX

The bio-based road binder

 Borregaard

What is Dustex?



'Nature's best binder'

A highly efficient solution for dust control applications and road stabilisation



Derived from trees

Based on lignin, the binding agent in trees.
USDA bio-preferred with 100% bio-based content.



Certified circular raw material

Wood raw materials sourced from sustainably managed forests.
Certified bio-circular raw material.



Documented low carbon footprint

EPD (Environmental Product Declaration), LCA assessments available



BINDING STRENGTH

SALT VS DUSTEX



Dust Control | Applications



Dust | Gravel roads

Dust from gravel roads can reduce visibility, cause health issues, and accelerate road deterioration, resulting in accidents



Dust | Broadacre

Nuisance dust on outdoor areas like mineral dumps, construction sites, quarries, and solar or wind farms inhibits safe and efficient operations



Dust | Mining

Dust from mining roads can endanger traffic and worker safety, damage equipment, and disrupt operations



Dust | Agriculture

Dust on agricultural roads can harm crops, reduce visibility and damage equipment



Dust | Recreational

Dust on mountain bike trails, racetracks, motocross tracks, horse arenas, etc. can hinder visibility, reduce traction/safety, and spoil the experience for spectators



Dust | Stockpiles

Dust from stockpiles and railcar toppings can cause environmental hazards, material loss, and regulatory issues

Dust Control | Gravel roads



Bio-based dust suppressant

Efficiently binds soil particles, reduces the amount of dust and increases road safety. Stronger, more durable roads mean less need for maintenance.



Non-corrosive

Safe to handle and gentle on vehicles and equipment



Certified circular raw material

Based on wood derived from sustainably managed forests. Certified bio-circular raw material.



A sustainable solution

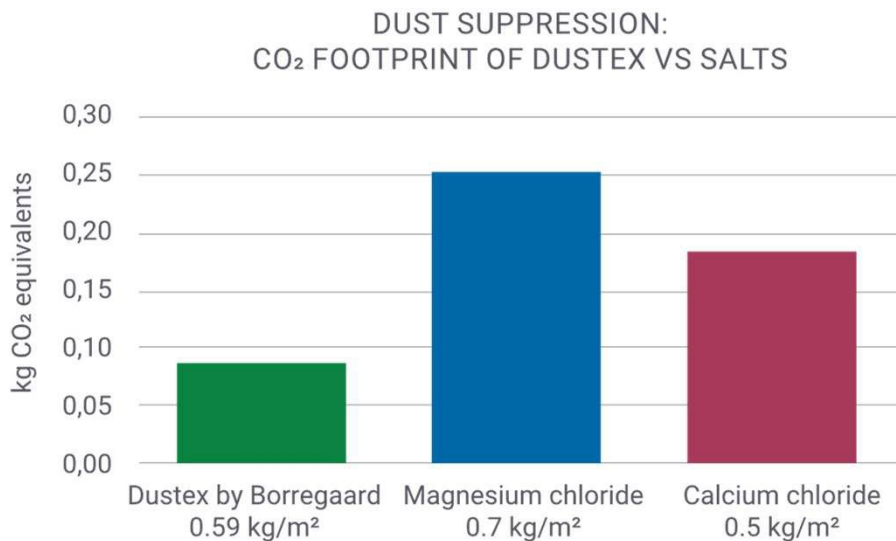
USDA bio-preferred with 100% bio-based content. Documented lower carbon footprint vs salts. EPD available.



Dustex reduces your CO₂ footprint significantly!



By replacing **salts** with Dustex, the CO₂ footprint throughout the overall life cycle can be reduced by more than 55%*



*as is, by weight of road material. Source: NORSUS

DUST SUPPRESSION WITH DUSTEX

Dust Control | Recreational



Bio-based dust suppressant

Helps control dust on bike trails, motorsport tracks, horse arenas etc. Reduces water consumption and overall maintenance cost.



Safety improved

Improved visibility. Less harmful dust for athletes and spectators.



A sustainable solution

USDA bio-preferred with 100% bio-based content. Documented low carbon footprint. EPD available.



Non-corrosive

Safe to use and easy to handle. Non-corrosive.



Dustex | Rallycross courses



Andreas Bakkerud
Team EKS Audi Sport

Dust Control | Mining roads



Bio-based dust suppressant

A cost-effective, environmentally friendly binding agent for mining haul roads



Safety improved

Improved visibility and less harmful dust, facilitating compliance with Safety, Health, Environment (SHE) standards. Safe to use, non-corrosive.



Sustainable solution

Water consumption can be reduced by up to 80%. USDA bio-preferred with 100% bio-based content. Documented low carbon footprint.



Cost reduction

Reduced dust on vehicles and equipment leads to lower maintenance costs and improved machinery lifespan



Dust Control | Broadcastare



Bio-based dust suppressant

Helps control dust on broadcastare areas, like mineral dumps, solar farms, construction sites, quarries and parking lots



Safety improved

Reduces the amount of nuisance dust and increases safety. Dustex is safe to use and easy to handle. Non-corrosive.



A sustainable solution

USDA bio-preferred with 100% bio-based content. Documented low carbon footprint. Water consumption can be significantly reduced.



Cost reduction

Reduces vehicle operating and maintenance costs



Dust Control | Agricultural roads



Bio-based dust suppressant

Efficiently binds soil particles and reduces nuisance dust, which can negatively affect crop yield.



Safety improved

Improved visibility. Less harmful dust for workers and surroundings. The product is non-corrosive and safe to use.



A sustainable solution

USDA bio-preferred with 100% bio-based content. Documented low carbon footprint. Non-toxic, safe for vegetation and plants. Water consumption can be significantly reduced.



Cost reduction

Reduced vehicle operating and maintenance cost



 **DUSTEX**
The bio-based road binder



Borregaard

 **bio Montan**
member of SNF Group

Dust Control | Stockpiles



Bio-based dust suppressant

For stockpiles at ports and industrial sites and railcar toppings. Binds particles, reduces nuisance dust and increases safety.



Safety improved

Improved health and safety of workers and surroundings. Helps keep nuisance dust within allowable limits. Reduced risk of self-heating.



A sustainable solution

USDA bio-preferred with 100% bio-based content. Documented low carbon footprint. Water consumption can be significantly reduced.



Non-corrosive

Safe to use and easy to handle. Non-corrosive.



Borregaard



Road stabilization | Why?



Road Stabilisation | **Safety**

Substandard road surfaces can lead to accidents, by causing vehicle instability and reducing traction



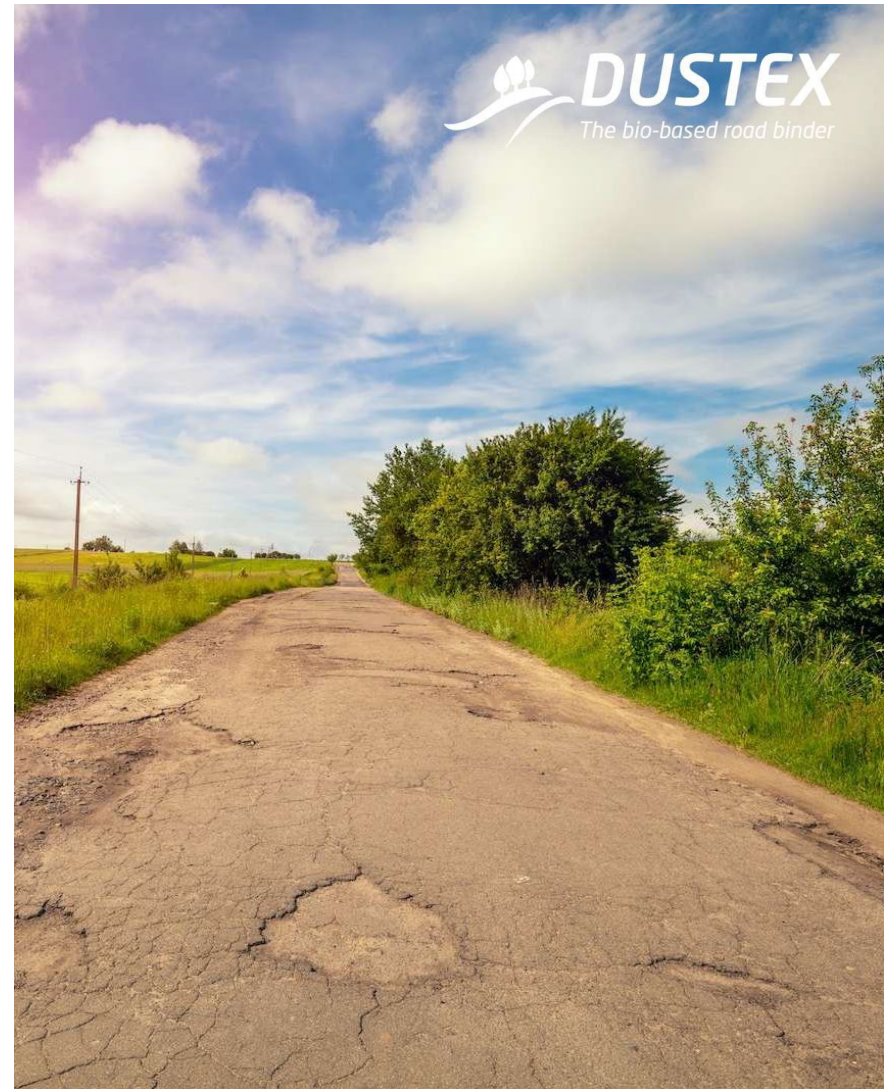
Road Stabilisation | **Road Durability**

Poor road strength reduces load-bearing capacity, leading to costly surface cracking, shorter lifespans and frequent repairs



Road Stabilisation | **Non-Sustainable Solutions**

Common road stabilisation materials like cement and bitumen are non-sustainable, contributing to environmental degradation and high carbon footprints



The solution: Dustex



Road Stabilisation | Safety

Dustex® is a cost-effective, environmentally friendly binder for road stabilisation that enhances road strength and safety



Road Stabilisation | Road Durability

Dustex increases load-bearing capacity and improves the stability and lifespan of the road base, resulting in significant cost savings



Road Stabilisation | Sustainable Solution

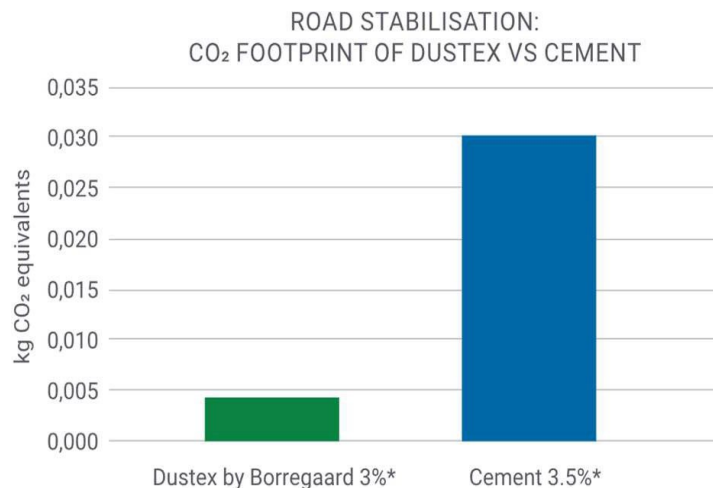
Dustex is a bio-based, sustainable alternative to cement and bitumen. LCA comparisons show a significant reduction in CO₂ emissions with Dustex



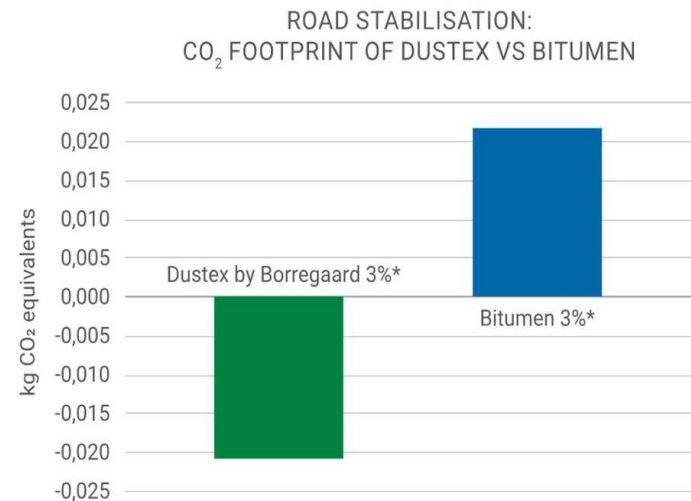
Dustex reduces your CO₂ footprint significantly!



By replacing **cement** with Dustex, the CO₂ footprint throughout the overall life cycle can be reduced by 87%*



By replacing **bitumen** with Dustex, the CO₂ footprint throughout the overall life cycle can be reduced by 194%*



*as is, by weight of road material. Source:
NORSUS

ROAD STABILISATION WITH DUSTEX

On-site recycling

A safe choice: Proven and global



Proven Performance | **Dustex**

Dustex has been successfully used for dust control and road stabilisation for many decades



Global Availability | **Dustex**

Dustex is available in all regions and is currently sold in more than 20 countries



Documented Sustainability | **Dustex**

Life Cycle Assessment (LCA) comparisons show a significant reduction in CO₂ emissions with Dustex compared to other alternatives



Reliable and Global | **Borregaard**

Borregaard, a trusted company since 1889, operates with high quality standards and has plants and sales offices in 13 countries





@ OFFICE@BIOMONTAN.AT

@ BIOPOLYMERS@BORREGAARD.COM