



DENIMOTECH

THE ROAD AHEAD



For over thirty years, we've been obsessed with creating the best bitumen emulsion and PMB plants and technologies.

DENIMOTECH PROVIDES GLOBAL INDUSTRY WITH INNOVATIVE ASPHALT TECHNOLOGY AND PROFESSIONAL SERVICE

DENIMOTECH supplies industries worldwide with equipment to manufacture high performance bitumen applications that minimize impact on the environment.

We work with clients in the following industries:

OIL REFINING | INFRASTRUCTURE | PETROCHEMICALS | CONSTRUCTION

We are a Scandinavian manufacturer selling and distributing plants for the production of bitumen emulsion, Crumb and Polymer Modified Bitumen worldwide through a network of global partners. Our customers and business partners have access to our technical expertise, innovative processes, and environmentally sound equipment.

DENIMOTECH is owned by **DENIMOTECH Holding** a private company focused on generating value for the worldwide infrastructure industries by leveraging their highly expertise inside the binder and specialized equipment industry.

THE PURPOSE OF WHAT WE DO IN DENIMOTECH

At **DENIMOTECH** we always aim at producing the highest quality plants and equipment in the industry. We conduct ourselves with professionalism, integrity and desire to build customer loyalty by exceeding customer expectations. Our true guiding star is the purpose behind our daily work where we aim to participate in developing the:

- ▶ **MOST SAFE ROADS IN THE WORLD**
- ▶ **MOST LONG-LASTING ROADS IN THE WORLD**
- ▶ **MOST ECONOMICALLY BUILD ROADS IN THE WORLD**
- ▶ **MOST ENVIRONMENTALLY FRIENDLY ROADS IN THE WORLD**
- ▶ **MOST ADVANCED TECHNOLOGY CONSUMING ROADS IN THE WORLD**

We are focusing on making a real difference to the worldwide society we are a part of and we are convinced that our passion gives everyone better opportunities to join this dedicated vision.

HIGH QUALITY BITUMINOUS PRODUCTS MADE FOR ROAD INFRASTRUCTURE

DENIMOTECH makes precision equipment but it is the high quality bitumen products our plants produce that are most important. Our versatile plants are capable of producing many grades of bitumen emulsions, Polymer Modified Bitumen and Crumb Rubber Modified Bitumen. At the heart of our plants is our high shear colloid mill, which produces homogenous, stable particles that make **DENIMOTECH** equipment produced binders long lasting under extreme conditions.

For high traffic roads that experience heavy volume and heavy loads, our emulsified bituminous binders create flexible pavements that are durable and longlasting.

DENIMOTECH equipment can easily produce modified bitumen and rubber modified bitumen that exceeds worldwide standards. Our bitumen emulsion plants can be configured to produce emulsions and PMBs/CRMBs that withstand a wide variety of climactic conditions, from the broiling summer heat to cold and rainy environments. Whether you are constructing roadways or as a durable prime coat or tack coat,

DENIMOTECH plants give road builders the ability to build and maintain all types of roads economically.



TECHNOLOGY TO HANDLE A WIDE RANGE OF APPLICATIONS

Our emulsion and PMB/CRMB plants are designed with high performance components - making them a better return on investment over time. Furthermore, the precision engineering that goes into our colloid mills enables them to output extremely fine micro particles, producing some of the most stable and durable emulsions and poly modified bitumen on the market.

Our Research plants offer multiple inputs, precision controls and comprehensive monitoring systems, enabling producers to formulate and test a variety of samples pre-production. Our technology helps customers create the best performing and most cost effective materials possible, suitable for a range of climates and applications.

Because all of the components in our systems are manufactured to the same high standards, our plants can be adapted and upgraded. The ability to integrate any of our equipment into the design process makes **DENIMOTECH** plants flexible and a sound investment. **DENIMOTECH** plants are highly configurable and capable of producing customizable material applications to fit any project and any local conditions.



**OUR "START-UP" SERVICE ENSURES AN EASY
SET UP AND LAUNCH ON YOUR SITE...**

A RANGE OF SERVICES TO MEET ALL OF YOUR NEEDS

The superiority of our equipment is only part of the story. Our fundamental business objective is to build long term relationships through service, both with customers and business partners. From first contact to handover, we promise you will be served with competence, reliability and integrity. Our long-established network of trusted and knowledgeable business partners brings local expertise to customers on every continent.

Furthermore, we offer a full range of support including process engineering, advice on manufacture, delivery procedures and chemical testing. Our engineers, working with our local business partners, can advise on the most suitable processes and techniques, ensuring you achieve the most cost effective production for your project.



DENIMOTECH is committed to continuous innovation in equipment and processes to ensure your people are safer and your processes are more efficient.

**... AS WE DELIVER AND COMMISSION YOUR PLANT
TUNED PRECISELY TO YOUR SPECIFICATIONS.**

QUALITY THAT DELIVERS LASTING VALUE

One of the reasons our plants and equipment produce such high quality output, is because they've been designed to comply with strict European Standards for manufacturing. Not only will you feel the quality in our equipment, you will see the quality in the bitumen emulsion and PMBs produced.



**WE STAND BEHIND ALL DENIMOTECH EQUIPMENT
WITH A ONE YEAR REPLACEMENT GUARANTEE.**



SUSTAINABILITY & ENVIRONMENTAL COMMITMENT

DENIMOTECH is committed to sustainable development and strives to be as environmentally friendly as possible in all of our manufacturing and processes.

The impact on the environment is significantly lower by emulsifying the bitumen than with other technologies.

Reduction of Co2 can be up to 80% compared to eg. hotmix.



OUR PROMISE: TO HELP YOU DOWN THE ROAD AHEAD

Not only do we try to produce the highest quality plants and equipment in the industry; where we really stand out is our service. We conduct ourselves with professionalism, integrity and desire to build customer loyalty by exceeding customer expectations.



BITUMEN EMULSION PLANTS

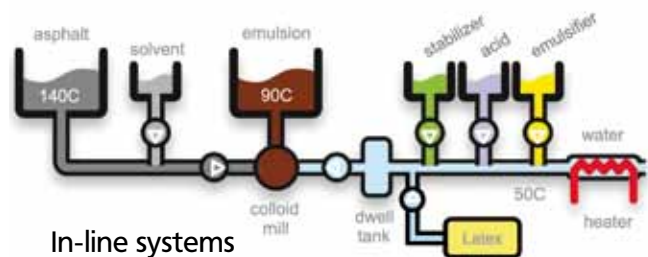
DENIMOTECH holds the largest product program in the industry with standard production capacities of 12, 20 & 40 ton/hr.

Plants are developed to be operated as either manual units or as fully automatic units with touch screens, PLC controls which gives a high degree of product documentation and enables remote support & updates and automatic chemical dosing systems.

All plants are highly energy efficient. Surplus heat from cooling of the emulsion is used to warm up the process water on automatic units.

All dosage lines are with flowmeter and frequency controlled pumps on automatic units which gives a very precise dosage (important for the process), and as they are equipped with 3 way valves for circulation and calibration.

The colloid mills are produced in DUPLEX stainless steel with very high content of molybdenum which gives an optimum resistance against fluids with low Ph. Stepless adjustable speed on the colloid mills (very important for the particle size in the emulsion) and possibility for adjustment of the gap between rotor and stator.



Two key features on DENIMOTECHS automated plants are Zero Waste™ & ReaFlex™

What is Zero Waste™?

The Zero Waste™ a process that eliminates the production of water phase waste during start-up. This saves money and helps the environment at the same time!

What is ReaFlex™

The ReaFlex™ system is a process that involves a pressure less dwell tank with variable filling level. The dwell time can this way be adjusted. If no significant dwell time is needed, a more accurate and stable pH control can be achieved.

POLYMER MODIFIED BITUMEN PLANTS (PMB)

DENIMOTECH holds the largest product program in the industry with standard production capacities of 12, 20 & 40 ton/hr.

Plants are developed to be operated as either manual units or as fully automatic units with touch screens, PLC controls which gives a high degree of product documentation and enables remote support & updates and advanced accurate calibration-free weigh feeder allowing for the use of different polymers without recalibrating the units.



CRUMB RUBBER MODIFIED BITUMEN PLANTS (AR/CRMB)

DENIMOTECH holds the largest product program in the industry with standard production capacities of 12, 20 & 40 ton/hr.

Plants are developed to be operated as either manual units or as fully automatic units with touch screens, PLC controls which gives a high degree of product documentation and enables remote support & updates and advanced accurate calibration-free weigh feeder allowing for the use of different polymers without recalibrating the units.

Key features on automated plants:

- ▶ Up to 20-25% crumb rubber content in the modified bitumen
- ▶ Possible to integrate a set of curing tanks to allow for continuous production directly into hot-mix plant
- ▶ Accurate flow- and temperature control for best possible product documentation
- ▶ Powerful speed controlled high-shear mixer for maximum versatility





LABORATORY SYSTEMS FOR EMULSION & PMB DEVELOPMENT

DENIMOTECH holds the largest product program in the industry with standard production capacities of 15 & 300 litre/hr.

Key features:

- ▶ Emulsion & PMB sample production
- ▶ Advanced PLC and touch screen operation to ensure the best possible product documentation and remote support and collaboration opportunities
- ▶ Emulsion cooler and back pressure control when producing advanced modified emulsions
- ▶ Advanced heat control when producing advanced modified bitumen's



"STAND-ALONE" COLLOID MILLS (EMULSION & PMB)

DENIMOTECH holds the largest product program in the industry with standard production capacities of 15 & 300 litre/hr.

Key Features:

- ▶ All stainless steel parts (DUPLEX and 316L) in emulsion mills
- ▶ Critical parts hardened in PMB mills
- ▶ Advanced program of optional sealings and bearings



BITUMEN TRANSPORTATION CONTAINERS

DENIMOTECH holds the most advanced product program in the industry with standard transportation capacities of 24 ton per container.





BITUMEN MELTERS

DENIMOTECH holds the largest product program in the industry with standard melting capacities of bags, polycubes and drums of 20, 80 & 27 per batch process.

State of the Art patented Melting Technology melts any quantity of bags filled inside within 6-8 hours, depending on temperature you wish to achieve as well as outside temperature (for cold weather environment special added insulation is optional)

Load 80 Polycubes (About 24 tons) or 20 Bitumen Bags (about 20 tons) into the melter and melt them all together in a batch process. The melter uses only 10-12 liters of Fuel Oil / Metric Ton of Bitumen melted and also comes with Diesel, Kerosene or Gas Burners at clients request.



The melter is insulated with latest Nano Technology and comes with temperature control. Optional is a Thermostat that will have further energy savings.

BITUMEN STORAGE TANKS

DENIMOTECH holds the most advanced product program in the industry with standard storage capacities in the range from 20 to 5.000 ton per tank.

Key Features on automated plants:

- ▶ Various oil and electric heating options
- ▶ Various stirring and mixing options
- ▶ Various mobile storage tanks

BITUTERMINALS

DENIMOTECH delivers the most advanced Bituterminal product program in close collaboration with Bitumina.

ENGINEERING SERVICES

DENIMOTECH holds the most advanced engineering service program in the industry. As a part of the collaboration process with **DENIMOTECH** following engineering services are available:

- ▶ Site P&ID's
- ▶ Site lay-outs
- ▶ Turn-key solutions
(not civil engineering services)
- ▶ Customer designed process systems





DENIMOTECH

Haandvaerkervangen 12

DK-5792 Aarslev

Denmark

T +45 6390 5000

F +45 6390 5019

sales@denimotech.com

www.denimotech.com