SIBELCO

OLIDENSE

FLEXIBLE BALLAST SOLUTIONS

WHEN DENSITY MATTERS

HIGH-DENSITY BALLAST FOR OFFSHORE WIND INSTALLATIONS

FULL LIFETIME STABILITY UNDER THE TOUGHEST CONDITIONS

OLIDENSE high-density ballast contributes to stable foundations for offshore wind turbines, both fixed and floating.

Manufactured from olivine mined at our site in Åheim, Norway, **OLIDENSE** is available in three grades according to your project's needs:

	OLIDENSE 0-4	OLIDENSE 0-40
SPECIFIC GRAVITY	*3.25 tonnes/m³*	*3.25 tonnes/m³*
COMPACTED WATER-SATURATED DENSITY	*2.40-2.60 tonnes/m³*	*2.70-2.85 tonnes/m³*
NON-COMPACTED DRY BULK DENSITY	*1.80-2.00 tonnes/m³*	*2.00-2.20 tonnes/m³*

As a loose ballast material, and depending on grade, **OLIDENSE 0-40** provides a density of up to **2.85 tonnes/m³** when compacted and water-saturated, helping you achieve the perfect weight ratio to strengthen and stabilise your design.

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A SUSTAINABLE & FLEXIBLE SUPPLY **OF HIGH-QUALITY MATERIALS**

Located on the west coast of Norway, our Åheim site (pictured) is the world's largest commercial olivine deposit with up to 150 years of reserves.

The proximity of our mine, processing facility and shipping terminal enables us to run a highly efficient operation with minimal transport or double-handling of materials. Quarried olivine is moved via conveyor belt through a 4km tunnel to the processing plant where it is crushed, dried and screened into different grades.

High production capacity enables us to adjust manufacturing levels to meet customers' changing requirements, meaning **OLIDENSE** is available at short notice in high volumes.

The deep-water terminal sitting next to the processing plant can handle various types of vessels up to Panamax size. Our shipping and chartering department can organise deliveries anywhere in the world at competitive rates.

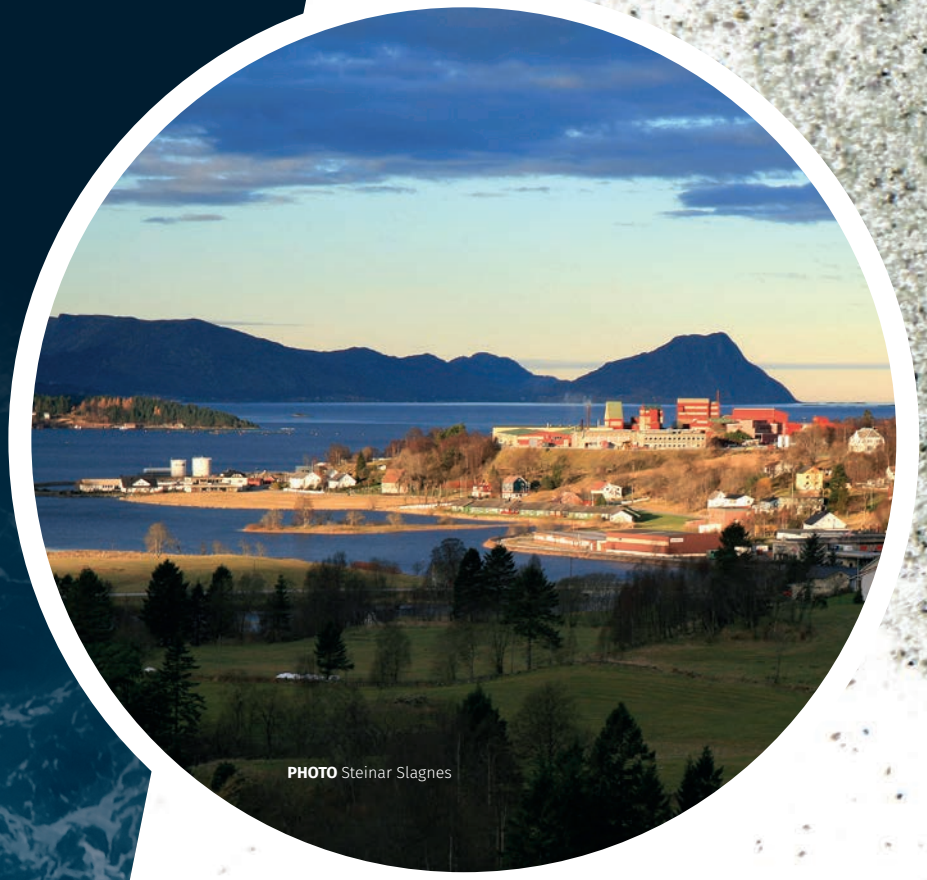

PHOTO Steinar Slagnes

A TECHNICAL APPROACH, EVERY STEP OF THE WAY

Offshore ballast materials need to deliver consistently high performance. Rigorous testing of our products (including underwater testing) at our dedicated laboratory ensures that nothing is left to chance.

Our technical team will work with you from the outset to understand your project's unique requirements before recommending the optimal ballast solution. And we'll be by your side throughout the project with technical and logistical support.

PARTNERSHIP BASED ON EXPERIENCE

Starting with oil platforms back in 1975, we've accumulated over forty-five years' experience in offshore ballasting. Our understanding of the challenges you face is reflected in the consistent quality of our products, the reliability of our logistics and the responsiveness of our service.

No matter where in the world your project is located and whatever challenges you face, Sibelco is a partner you can depend on.

BALLASTING THE WORLD'S LARGEST OFFSHORE FLOATING WIND FARM

Hywind Tampen is an 88 MW floating wind power project created to provide green electricity for the Snorre and Gullfaks offshore field operations in the Norwegian North Sea. Once operational in 2022, it will be the world's largest offshore floating wind farm and the first to power oil and gas platforms.

The project, headed by leading energy company, Equinor, consists of 11 wind turbines based on one of Equinor's floating offshore wind technologies, Hywind. Construction of the 11 floating concrete hulls to carry the wind turbines was just one of the challenges assigned to sustainable energy specialists, Aker Solutions.

To create the foundations for the turbines, Aker Solutions needed a high-performance ballast material and a supplier they knew they could depend on. Having worked with Sibelco and **OLIDENSE** on several North Sea projects previously, Aker approached us to provide a ballasting solution for Hywind Tampen.

After technical discussions and a series of tests, **OLIDENSE 0-40** was identified as the best solution for the job. A total of 82,000 tonnes of **OLIDENSE 0-40** was delivered to the project via 15 shipments from our plant in Åheim to the installation site at Dommersnes (Norway). The material needed to be delivered within a short timeframe over the summer holiday period, but our team pulled out all the stops to ensure that each ship was prioritised and loaded on time, ensuring no disruptions to Aker's construction schedule.

OLIDENSE 0-40 performed exactly as expected, providing the perfect weight ratio to strengthen and stabilise the foundations of Hywind Tampen's 11 floating turbines, supported throughout by Sibelco's technical specialists and operations team.

Equinor's Hywind Tampen will be a test bed for further development of floating wind, exploring the use of new and larger turbines, installations methods, simplified moorings, concrete substructures and integration between gas and wind power generation systems.

construction of the project's 11 floating concrete hulls underway at Dommersnes

OLIDENSE 0-40 being discharged

Images courtesy of Aker Solutions

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ABOUT US

Sibelco is a leading global provider of industrial minerals.

Founded in 1872, we have grown into a multinational business with 118 production sites across 31 countries and a team of over 5,000 people. We work with customers worldwide across a broad range of sectors, delivering solutions that combine high-specification materials with dedicated technical support.

We do this within a robust sustainability framework, always balancing economic performance with environmental stewardship and social responsibility.

DRIVING DOWN CARBON EMISSIONS

In August 2021 we announced our new target to reduce Scope 1 and 2 emissions intensity (tonnes CO_2 / revenue) by 5% per year from 2021 to 2030 – cumulatively a reduction of 37%. This target is in line with best practices promoted by the Science Based Targets initiative and is aligned with the Paris Agreement and its goal to limit global warming to well below 2°C compared to pre-industrial levels.

Our target is one of the toughest set by any business in the industrial minerals sector. We will invest approximately €90 million in new technologies and operational excellence initiatives over the next nine years to help us achieve our goal. An additional target for Scope 3 emissions will be confirmed in 2022 after further consultation with our customers and suppliers.

Our Åheim olivine operation (pictured) is powered predominantly by hydroelectricity, meaning it has one of lowest carbon footprints of any Sibelco site. We are embarking on further projects to reduce Åheim's remaining CO_2 emissions.

FIND OUT MORE

PLEASE GET IN TOUCH TO DISCUSS YOUR PROJECT REQUIREMENTS AND EXPLORE THE POTENTIAL OF OLIDENSE AS A RELIABLE, HIGH-PERFORMANCE AND COST-EFFECTIVE BALLAST SOLUTION.

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