



SediCon Company Profile

Sediment management solutions for hydropower

Intakes | Desanders | Reservoirs | Tunnels



2026

Company Overview

SediCon develops and supplies proven sediment management technologies for hydropower intakes, desanders, reservoirs and tunnels. Our gravity-powered and hydraulically operated systems remove sediment while allowing hydropower facilities to remain in operation, helping reduce water losses, turbine wear and production interruptions.

With specialist competence in sedimentation, hydraulics and sediment engineering, combined with decades of experience from design, manufacturing, installation and operation, SediCon delivers solutions adapted to the sediment conditions and infrastructure at each site.

Solutions at a Glance

Application	SediCon solutions
Run-of-river Intakes	Boulder Excluders and Gravel Sluicers for automatic or controlled removal of coarse material before it enters waterways and tunnels.
Desanders	SediCon Sluicers and Desander Dredges for removal of sand and gravel with low water consumption and minimal interruption to production.
Reservoirs	SediCon Dredges and specialised systems for reservoir sediment removal and reopening or maintenance of bottom outlets and submerged intakes.
Tunnel sand traps	ROV-assisted Ejector Dredgers for removal of sand and gravel.
Tunnels	ROV-assisted Ejector dredging of sand, gravel and rocks several hundred meters into pressurized tunnels.

Company Data

SediCon AS is registered in Norway under organisation number 983 038 891 and was established on 31 January 2001. The Certificate of Registration issued by the Brønnøysund Register Centre is available as an attachment.

Head Office

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Organisation and Capabilities

Key Personnel

Tom Jacobsen	Technical Director and General Manager, PhD tom@sedicon.no +47 416 54 500
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Regional Presence

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SediCon Ecuador Office

Country Representative: Pedro Hansen

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Core Competence

SediCon's core competence combines PhD-level expertise in sediment transport and hydraulic engineering with decades of practical experience from sediment removal projects. This combination has enabled SediCon to develop and own specialised, patented technologies and to custom-design equipment and services for a wide range of hydropower plants.

Engineering and Production

SediCon retains in-house control of hydraulic design, system engineering and technology selection. Equipment production is carried out through qualified Norwegian and international manufacturers under SediCon's technical and quality control. This model provides flexibility and capacity for projects of different sizes and in different countries.

International Experience

SediCon has supplied equipment and services in Europe, Asia, Africa and the Americas, including Norway, Austria, Iceland, Italy, Nepal, India, Japan, Rwanda, Ethiopia, Iraq, Afghanistan, Georgia, Honduras, Costa Rica, Guatemala, Panama, Mexico, Chile, Colombia and Ecuador.

SediCon cooperates with Hugin in the development of potential hydropower sediment management projects in Indonesia.

Engineering Philosophy

SediCon develops systems that use gravity and hydraulic principles wherever site conditions allow. Limiting moving parts and external energy requirements can improve operational reliability and simplify maintenance. Each solution is designed around the sediment properties, available hydraulic head, infrastructure and operational constraints at the site.

Quality, Health, Safety and Environment

Quality Management

SediCon is certified according to NS-EN ISO 9001:2015. Certification is issued by Kiwa AS and is valid until 3 June 2028.

SediCon maintains a quality management system adapted to its equipment and services and requires documented quality from its manufacturers and suppliers. Project-specific quality documentation and inspection plans are prepared when required and coordinated with the client's quality requirements.

Health, Safety and Environment

For projects involving site work, SediCon prepares an HSE and emergency preparedness plan appropriate to the scope and applicable local requirements. The plan identifies responsible personnel and includes procedures needed for safe execution of the work.

Sediment Management Solutions

Intakes

Boulder Excluders / Sediment Excluders

SediCon Boulder Excluders protect steep brook and run-of-river intakes from stones, boulders and debris during floods. Coarse material is removed before entering tunnels and waterways. With no moving parts in the waterway, the systems require little maintenance and operate automatically using only excess water and do not affect power production.



Gravel Sluicers

SediCon Gravel Sluicers remove gravel and stones at intakes or gravel traps before the material reaches downstream waterways, tunnels or desanders. The fixed suction arrangement is adapted to the available hydraulic conditions and the expected sediment sizes. Capacity is normally thousands of tons per hour.



Desanders

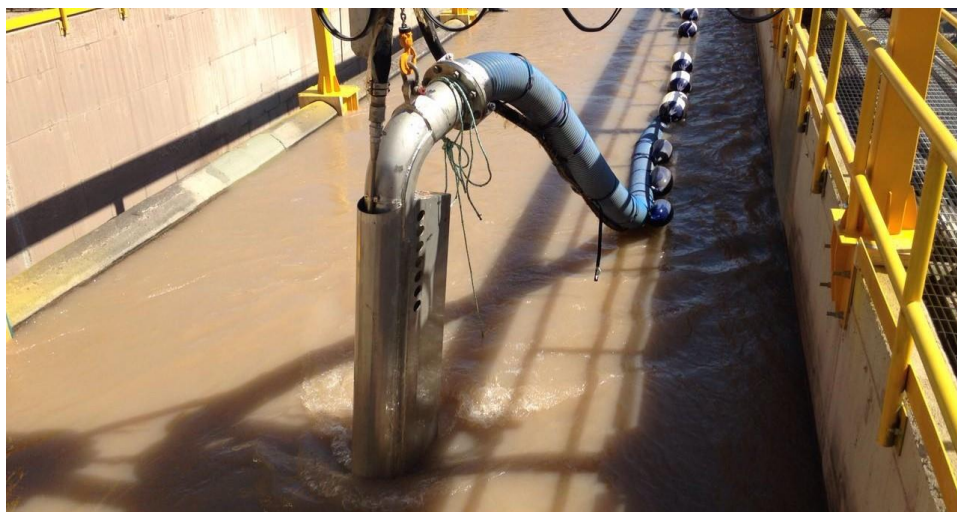
SediCon Sluicers

SediCon Sluicers remove deposited sediment from desanders and desilting basins using gravity and hydraulic head. The systems can normally operate without interrupting water supply or power production and without mechanical moving parts in the basin. Capacity and layout are adapted to the geometry, sediment load and available discharge arrangement.



Desander Dredges

SediCon Desander Dredges are hydrosuction systems for forebays and desanders where deposited sediment must be collected across a wider bottom area. The dredge uses the difference in water level between the basin and the outlet to discharge a controlled water-and-sediment mixture.



Reservoirs

SediCon Dredges

The SediCon Dredge is a gravity-powered hydrosuction system for sediment removal from reservoirs of all sizes. Its concentration-balancing system and unrestricted flow handle fine cohesive sediments, organic material, gravel and stones. Reservoir operation can continue during dredging, with controlled sediment discharge and minimal external energy input.



Reopening and Maintenance of Bottom Outlets and Intakes

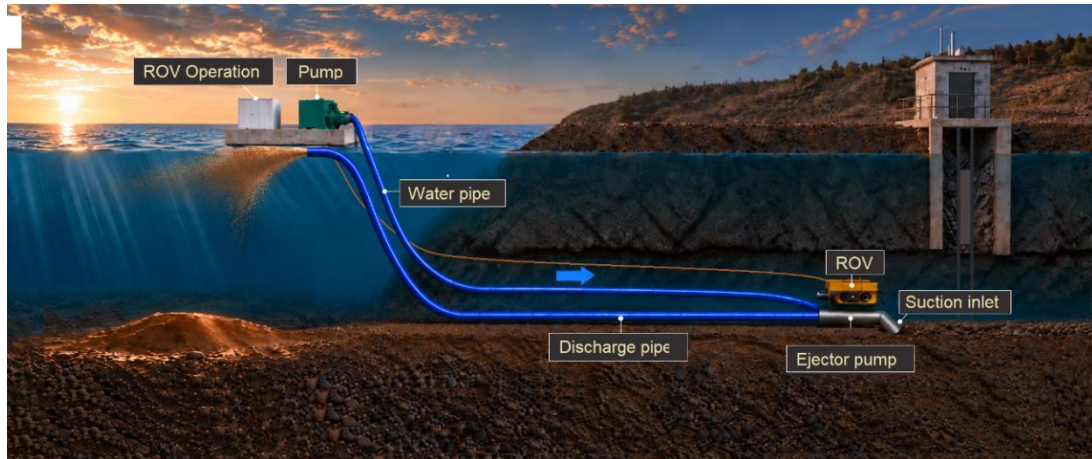
SediCon's Ejector Dredge and related deep-water systems can remove consolidated deposits, gravel and stones obstructing submerged intakes, bottom outlets and gates. Sediment can be transferred to a barge, discharged outside the reservoir or relocated to an approved area within the reservoir.



Tunnels

Ejector Dredging

ROV-assisted Ejector Dredging enables controlled removal of sand, silt, gravel and stones from submerged and pressurised tunnels. The method can reduce or eliminate the need for tunnel dewatering and human entry, depending on site conditions and access.



SediCon Sluicers for Tunnel Sand Traps

SediCon Sluicers can be integrated into tunnel sand traps to remove sediment during operation. The systems use available hydraulic head and are designed around the tunnel geometry, access limitations, sediment characteristics and downstream discharge requirements.



Expertise Built on Experience

SediCon's expertise in sediment handling is built on more than 30 years of research, technology development, engineering and practical implementation. SediCon was established through Tom Jacobsen's PhD research at NTNU from 1993 to 1997, which focused on sediment handling solutions and sediment-related challenges in hydropower reservoirs and waterways.

This research was followed by extensive development and field experience through GTO Subsea, SediCon and Deep C, including offshore and subsea projects worldwide. Working across hydropower, reservoirs, tunnels and demanding subsea environments has provided valuable experience in hydraulic sediment transport, suction and dredging systems, multiphase flow, coarse material handling and the design of equipment for difficult and inaccessible locations.

Over the years, SediCon and its associated development activities have resulted in a range of new technologies and equipment designs for sediment removal and management. These include gravity-powered hydrosuction systems, pump-powered solutions, ejector dredges, sediment sluicing systems and specialised equipment for removing sand, gravel, stones and cohesive sediments from intakes, desanders, tunnels and reservoirs. A substantial number of technologies have also been developed for the offshore oil, gas and wind industry.

An important part of SediCon's competence is the combination of theoretical understanding, hydraulic calculations, equipment design and practical field experience. Technologies are not only designed and calculated, but manufactured, installed and operated under real project conditions. Performance and operational experience from completed projects are used to verify design assumptions and continuously improve calculation methods, equipment and system design.

This accumulated knowledge provides the basis for developing new solutions. Rather than applying standard equipment to every site, SediCon uses experience and verified design methods from previous projects to understand the sediment processes, calculate system performance and develop solutions adapted to the hydraulic conditions, sediment characteristics and operational requirements of each new project.

Selected References

The references below are organised by application so that relevant experience can be identified quickly. Projects are listed with the newest references first within each group. Some projects combine several SediCon technologies and are cross-referenced where relevant.

Intakes

Boulder Excluders

Nystølbekken, Ulla Førre, Norway – 2,000 MW – 2023 Client: Statkraft. Supply of a 710 mm Boulder Excluder for automatic removal of boulders up to 600 mm during floods.

Orkla Power Plants, Norway – 2023 Client: Aneo. Supply of a 1,000 mm Boulder Excluder designed for controlled and automatic removal of boulders up to 800 mm during floods.

Tysso Brook Intake, Norway – 2020 Client: BKK. Supply of a 1,200 mm Boulder Excluder for removal of boulders up to 1,000 mm. The system remained operational through a major flood in 2022.

Gravel Excluders

Dos Valles and Palacios HPPs, Chile – 12 MW and 3 MW – 2020 Client: ANPAC SpA. Design and supply of Gravel Excluders for the water intakes.

Badigad Khola HEP, Nepal – 6.6 MW – 2017 Design and supply of a Gravel Excluder for the gravel trap, together with a SediCon Sluicer for the desander.

Sediment Excluders

Furset HPP, Norway – 5 MW – 2025 Client: Tussa Energi. Supply and retrofit of a 630 mm Sediment Excluder for removal of gravel, debris and sediments up to 530 mm during floods.

Dariali HPP, Georgia – 108 MW – 2025 Client: Dariali Energy. Supply of a combined Sediment Excluder and Gravel Sluicer in the forebay and transition zone. The project also includes multiple SediCon Sluicers.

Stubli Small Hydro, Norway – 3 MW – 2023 Supply of a 560 mm Sediment Excluder for controlled and automatic sediment removal from a submerged run-of-river intake without conventional flushing facilities.

Laxá III HPP, Iceland – 13.5 MW – 2016 Client: Landsvirkjun. Design and supply of a Sediment Excluder for the intake and a SediCon Sluicer.

Desanders

SediCon Sluicers

Hidromontañas HPP, Colombia – 20 MW – 2025 Client: Celsia. Supply and installation of a SediCon Sluicer system for sediment removal with low water consumption and uninterrupted production.

Dariali HPP, Georgia – 108 MW – 2025 Client: Dariali Energy. Supply and installation of four large SediCon Sluicers at the intake and one SediCon Sluicer system in the forebay and transition zone.

Weerbach HPP, Austria – approximately 1.6 MW – 2022 Design of the desander with flow tranquilisation, bypass and drainage arrangements, and supply of an integrated SediCon Sluicer, spillway, drainage and environmental flow unit.

Las Juntas HPP, Mexico – 2 MW – 2018 Design and supply of a SediCon Sluicer for the desander.

Upper Solu HPP, Nepal – 18 MW – 2018 Design and supply of SediCon Sluicers for the desander.

Badigad Khola HEP, Nepal – 6.6 MW – 2017 Design and supply of a SediCon Sluicer for the desander. The project also included a Gravel Excluder for the gravel trap.

Indrawati III HEP, Nepal – 7.5 MW – 2016 Design and supply of SediCon Sluicers for the desander.

Upper Dordi A HPP, Nepal – 25 MW – 2016 Design and supply of SediCon Sluicers for the desander.

Solu HPP, Nepal – 23.5 MW – 2016 Design and supply of a SediCon Sluicer for the desander.

Deralok HPP, Iraq – 97 MW – 2016 Design and supply of 16 SediCon Sluicers for desanders and gravel traps in the headrace channel.

Winkeltal HPP, Austria – 2.6 MW – 2016 Design and supply of a SediCon Sluicer for the desander.

Baner Sangam HPP, India – 5 MW – 2015 Design and supply of a SediCon Sluicer designed to remove approximately 100,000–200,000 tonnes of sand per year, with a design removal rate of 800 tonnes per hour.

Coca Codo Sinclair HPP, Ecuador – 1,500 MW – 2014–2015 Client: Sinohydro. Design and supply of 40 SediCon Sluicers for eight desanders, with an estimated annual sediment removal of six million tonnes.

Khimti HPP, Nepal – 60 MW – 2010 Design and installation supervision for SediCon Sluicers in the upstream end of the desilting basin. Capacity measured during site acceptance testing was approximately 3,000 m³/h.

Desander Dredges

Coca Codo Sinclair HPP, Ecuador – 1,500 MW – 2020 Client: CELEC. Design and supply of a SediCon Dredge for a desander.

Alto Maipo El Volcán, Chile – 535 MW – 2020 Client: STRABAG. Design and supply of a SediCon Dredge for the El Volcán desander.

Chacabuquito HPP, Chile – 29 MW – 2016 Client: Colbún. Design and supply of a Desander Dredge operated by a travelling crane in the forebay.

Reservoirs

SediCon Dredges

La Higuera and La Confluencia HPPs, Chile – 155 MW and 163 MW – 2022 Client: Tinguiririca Energía. Design and supply of a 16-inch SediCon Dredge with automatic and remote operation for the Tricahue and Tinguiririca reservoirs.

Alto Maipo Las Lajas, Chile – 535 MW – 2021 Client: STRABAG. Design and supply of a SediCon Dredge for Las Lajas pond.

Barroso HPP, Colombia – 20 MW – 2021 Client: Lareif. Design and supply of a SediCon Dredge for removal of deposits in front of the intake.

Arlia HPP, Italy – 3.75 MW – 2019 Client: ENEL Green Power. Design and supply of a SediCon Sluicer and SediCon Dredge for the reservoir.

Chak-e-Wardak HPP, Afghanistan – 3.4 MW – 2019 Client: Al Hashim Construction Co. Ltd. Design and supply of a SediCon Dredge for the reservoir.

Xacbal HPP, Guatemala – 100 MW – 2018 Client: Grupo Terra. Supply and installation of a SediCon Dredge with a stated capacity of 80 m³/h.

Paso Ancho HPP, Panama – 7 MW – 2018 Installation of a 200 mm SediCon Dredge with a stated capacity of 40 m³/h.

El General HPP, Costa Rica – 40 MW – 2014–2015 Client: Hidroenergía del General. Removal of more than 18,000 m³ of sediment from a lined hourly-peaking reservoir.

Banja HPP, Albania – 70 MW – 2013 Client: Devoll Hydropower, Statkraft. Design and supply of a SediCon Dredge for the reservoir.

Doña Julia HPP, Costa Rica – 18.5 MW – 2012–2013 Removal of more than 65,000 m³ of coarse and fine sediment, including organic debris.

El Canadá HPP, Guatemala – 60 MW – in operation since 2012 Client: ENEL Guatemala. SediCon Dredge for an hourly-peaking reservoir, with measured capacity up to 150 m³/h and reported annual dredging volumes of approximately 100,000–200,000 m³.

Cebadilla, La Garita HPP, Costa Rica – 40 MW – 2011 Client: ICE. Full-scale dredging of cohesive silt and clay, with measured capacity up to 200 m³/h and sediment concentration up to 20%.

Inagawa Reservoir, Japan – 2008 Successful hydrosuction dredging operation.

Malana HPP, India – 86 MW – 2005 Design and supply of a SediCon Dredge. Approximately 40,000 m³ of sediment was removed from the regulating pond during the initial two-month period.

Sakuma Reservoir, Japan – 2001 Client: Aoki Construction and Khowa Engineering. Successful dredging test at considerable water depth in a 30 km long reservoir.

Reopening and Maintenance of Bottom Outlets and Intakes

Necaxa HPP, Mexico – 199 MW – 2021–2022 Client: HPM Energy. Rental and operation of two SediCon Dredges to reopen bottom gates at approximately 50 m water depth beneath deposits up to 16 m thick, together with dredging inside the intake tower.

Enguri Reservoir, Georgia – 2007 Prequalification for sediment removal at approximately 180 m water depth.

Tunnels

Ejector Dredging

Skjerka Hydropower Plant, Norway – 200 MW – 2026 Client: Å Energi Vannkraft. Use of ROV-assisted Ejector Dredging for controlled removal of sand, silt and gravel inside submerged and pressurised tunnels without tunnel dewatering or human entry.

Veiski Power Plant, Norway – 5 MW – 2023 Supply of a Hydrosuction Dredge for removal of sand and gravel up to 150 mm from a tunnel desander inaccessible to conventional machinery.

SediCon Sluicers for Tunnel Sand Traps

Tonstad Power Plant, Norway – 1,340 MW – 2023 Supply of SediCon Sluicers for the tunnel desander, enabling sediment removal during operation.

Cuyamel HPP, Honduras – 7 MW – 2006 Design and supply of two SediCon Sluicers for a pressurised desander, allowing sediment removal without dewatering the tunnel or interrupting water supply.

Khimti HPP, Nepal – 60 MW – 2000 SediCon Sluicers for the tunnel desander, designed to remove sand and gravel eroded from the tunnel invert. The tunnel was operated for eight years before its first dewatering and inspection in 2008.

Engineering Studies and Special Applications

Don Pedro and Río Volcán HPPs, Costa Rica – 2018 Client: ENEL. Sediment study including sampling and laboratory analysis.

Maritime Archaeology – 2017 Design and supply of two dredges for archaeological applications.

SediCon and its key personnel have also developed specialised offshore dredging, pile dredging, trenching and sediment removal systems for projects in the North Sea, Gulf of Mexico, West Africa, Canada, the United Kingdom, Russia and other offshore locations. This experience supports the company's capability in remotely operated and deep-water sediment removal.

Selected Offshore and Technology Development Experience

The following selected projects demonstrate SediCon's background in specialised dredging and remote subsea operations. Detailed references are available on request.

1996 - Ejector dredge for deepwater rock dump removal. Invention and hydraulic design for Draugen in 1996 and used to remove rock dump from cables at 300 meters water depth

1999 - ROV Dredge: Hydraulic design and patenting of the first ROV-Dredge, first used at 540 meter water depth to remove 1-3" gravel.

2000 - Subsea Dredge: Hydraulic design of the first ejector powered Subsea Dredges capable of removing standard 5" rock dump

2003 - Pile Dredge: Design of the first pile dredge, used at Valhall WIP

2013 - Deep C CFE Development, model test and patenting of a offshore sediment blower (CFE) for high-capacity sediment removal while maintaining visibility.

2014 - Deep C ROV Trencher Development of a remotely operated trenching system.

2017 - Deep C Soil Plug Removal Tool (SPRT) Hydraulic design of a patented soil plug removal tool first used at Beatrice offshore UK and East Anglia One offshore UK.

2018: Deep C Subsea Construction Vehicle Design of 500 mm / 400 kW ejector dredge

Supporting Documentation

The following documentation can be supplied together with this company profile when required:

- Certificate of Registration issued by the Brønnøysund Register Centre
- Comparison of desander sediment removal systems prepared by Lahmeyer
- Individual product sheets
- Selected client recommendation letters and detailed project references

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