

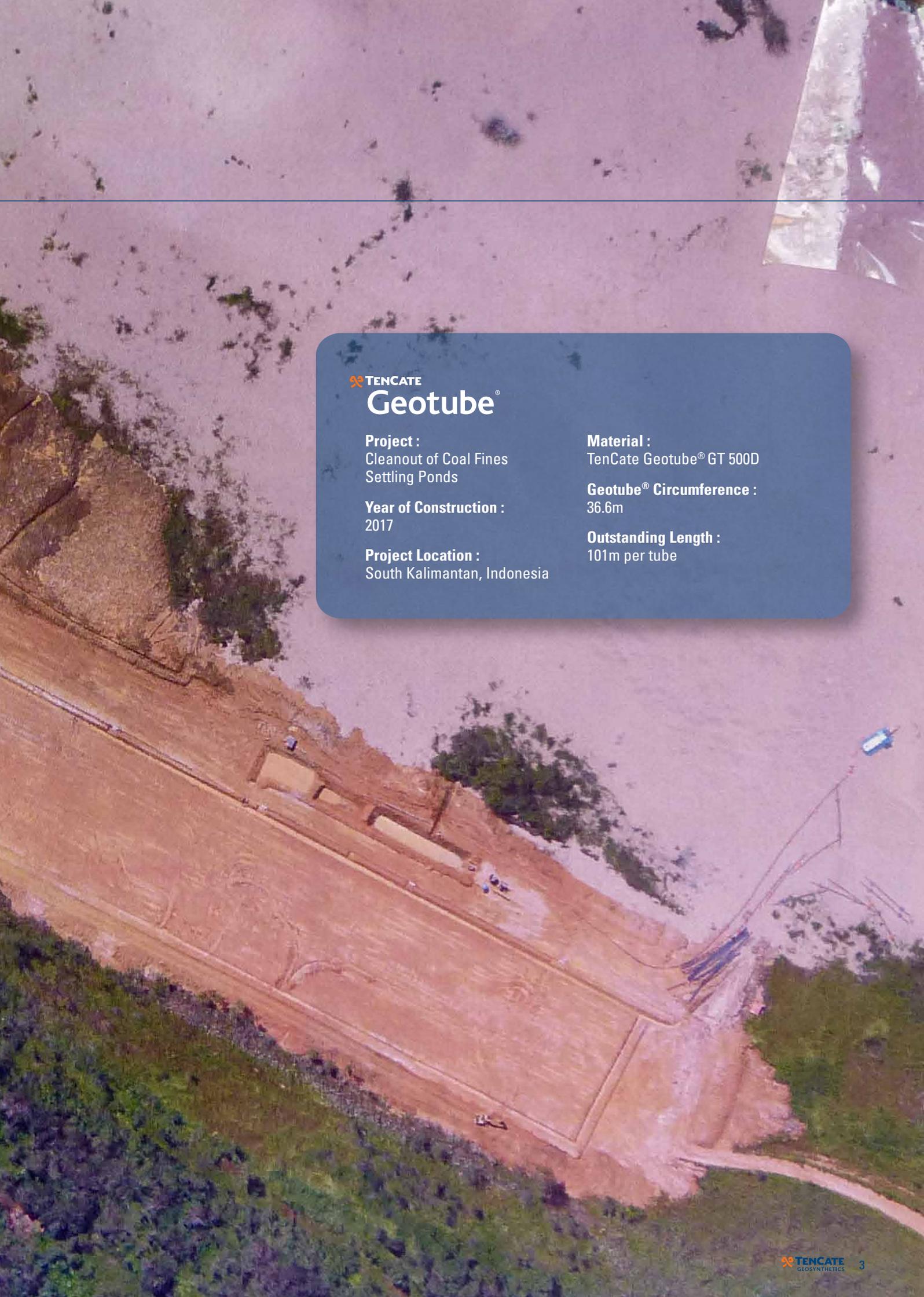
Mine Slurry Dewatering Using Supersize Geotube[®] Dewatering Units



ASIA'S LONGEST DEWATERING GEOTUBE®

The rising demand for supersized Geotube® dewatering units capable of handling extreme volumes of mine waste sediments and slurries is the driving force for TenCate Geosynthetics strive in innovation and engineering excellence. Mine owners and plant operators are constantly demanding for more efficient and productive outputs. No two mine sites or operative problem is the same and nearly every project requires a bespoke solution. It is a challenge TenCate has embraced with vigor and enthusiasm that has resulted in the capability to deliver bigger and better Geotube® options designed to meet or exceed asset owner expectations.

In a remote territory of Kalimantan where logistics was seemingly impossible, lies Asia's longest dewatering Geotube®. Measuring 101m in length and a diameter of 36.6m, the dewatering tubes were designed for a mine site which required high volumes of slurry to be dewatered. With limited space and time running short, the extreme demands involved with these supersized dewatering tubes was a behemoth challenge in every aspect.



TENCATE
Geotube®

Project :
Cleanout of Coal Fines
Settling Ponds

Year of Construction :
2017

Project Location :
South Kalimantan, Indonesia

Material :
TenCate Geotube® GT 500D

Geotube® Circumference :
36.6m

Outstanding Length :
101m per tube



THE CHALLENGE

The mine site in question required solutions to dewater high volumes of slurry from sediment ponds that were at the limits of their capacity. Lack of land space prevented construction of additional pond capacity and operational water demand required sediment free water be circulated back into the process. Solutions proposed had to be capable of dewatering exceptionally high volumes of slurry within a constrained time period and be shown to be cost feasible and operationally functional in a remote site location.



Dewatering tests conducted at site before (left) and after being conditioned with polymer solution (right).



Clear water coming out from dewatering tube.



Laying of Geotube® at the dewatering platform

THE SOLUTION

With extensive experience working in remote mine sites across the world, TenCate dewatering engineers quickly realized the demands of the project and eliminated the option of using standard sized Geotube® units. The only option was to manufacture Geotube® units of at least 100m or longer in length in order to meet both the dewatered solids targets but also fit within a constrained laydown pad size. The design of the units had to be such that the system would accept the volumes required to be pumped in an efficient way and that water discharged from the tubes could be immediately circulated back into the process. Calculations showed that installation of such large tubes would significantly reduce operational costs compared to costs associated with a larger number of smaller Geotube® units.

The Geotube® unit with a circumference of 36.6 m and length of 101 m was chosen for this project with a total of 6 units required to process the 160,000 m³ of slurry pumped at a rate of 550 m³/hour for 24 hours per day generating 20,000 m³ of dry cake.

Manufacturing such large Geotube® units was another challenge met by innovative fabric production and tube assembly techniques no other company can match. The Geotube® units were also required to be packaged and transported to site in a way that facilitated easy handling and deployment on site using unskilled labor. A record-breaking operation in more ways than one, but one that paves the way for delivery of supersized Geotube® units capable of dewatering extremely large volumes of mine and industrial slurries going forward.

CASE STUDY Mine Slurry Dewatering Using Supersize Geotube® Dewatering Units



OPERATIONAL WORKS AT SITE



A dredger was deployed to transfer silt sediment slurry to the dewatering platform. The dredger had a pumping flow rate capacity of 400 to 550m³/hour.



An excavator was used to assist in rolling out the Geotube[®] dewatering unit into position on the dewatering platform.



The Geotube[®] dewatering unit was positioned on the drainage platform according to the layout plan.



The Geotube[®] dewatering unit was filled to the maximum controlled height.

CASE STUDY Mine Slurry Dewatering Using Supersize Geotube® Dewatering Units



PERFORMANCE

This project has the distinction of being the longest Geotube® dewatering project ever undertaken in Asia. The project has resulted in a wealth of knowledge on the economics of extreme large scale Geotube® dewatering that can be applied to other high volume mine and industrial slurry dewatering challenges.

Despite the extreme demands and challenges, the supersized Geotube® dewatering tubes were successfully supplied and installed, and the project was completed within a short period of time. The design of the Geotube® dewatering tubes enabled land space to be well optimized while harnessing the performance of Geotube® technology.



Asia's longest dewatering Geotube® comprising 6 units of Geotube® GT500D, each at a length of 101m and a circumference of 36.6 m

With its ability of achieving high rates of solids retention and effluent discharge, the water discharge quality improved substantially by reducing the total suspended solids (TSS) being discharged back into the ponds. The Geotube® dewatering technology has proven to be a highly effective and efficient solution with significant benefits in cost savings and environmental sustainability, reducing carbon footprint while returning a revenue contribution to the mine operations.

Further information on this and other large scale Geotube® dewatering projects can be obtained by contacting Tencate Geosynthetics Asia.

www.tencategeo.asia

info.asia@tencategeo.com

TenCate develops and produces quality products that increase performance, reduce cost, and deliver measurable results by working with our customers to provide advanced solutions.

Malaysia

TenCate Geosynthetics Asia Sdn Bhd
(264232-U)
14, Jalan Sementa 27/91
Seksyen 27, 40400 Shah Alam,
Selangor, Malaysia
Tel : +60 3 5192 8568
Fax : +60 3 5192 8573

Philippines

TenCate Geosynthetics Asia Sdn Bhd
Philippines Representative Office
Unit 1803 West Avenue Suites
124 West Avenue Barangay Philam
Quezon City, Philippines 1104
Tel : +63 426 8834 / 426 8835
Fax : +63 518 9028

India

Tencate Geosynthetics India Pvt Ltd
Vishwasri GL, Plot No 5, IInd floor,
Vijay Nagar Colony,
Behind Secunderabad Club, Picket,
Secunderabad – 500003 Telangana,
India
Tel : +91 40 2770 1271 / 1273
Fax : +91 40 2770 1276

info.asia@tencategeo.com

www.tencategeo.asia

Thailand

TenCate Geosynthetics (Thailand) Ltd
169/98 Serm Srap Bldg, 3rd Floor,
Ratchadapisek Road Dindaeng,
Bangkok 10400, Thailand
Tel : +662 692 6680
Fax : +662 692 6679

Indonesia

TenCate Geosynthetics Asia Sdn Bhd
Indonesia Trade Representative Office
Graha Simatupang Tower ID 4th Floor,
Jl Letjen TB Simatupang Kav 38
Jakarta 12540, Indonesia
Tel : +62 21782 8963
Fax : +62 21782 8664

Australia

TenCate Geosynthetics Asia Sdn Bhd
Australia and New Zealand Representative Office
14/328 Handford Road,
Taigum, Qld 4018
Australia
Tel : +61 43255 9266

Singapore

TenCate Geosynthetics Singapore Pte Ltd
67B, Tuas South Ave 1,
Singapore 637581
Tel : +65 6266 0188
Fax : +65 6266 0182

Myanmar

TenCate Geosynthetics Asia Sdn Bhd
Myanmar Representative Office
No. L-108 Ground Floor,
Manaw Hari Avenue Baho Road,
Ahlone Township, Yangon, Myanmar.
Tel : +951 1122 4551

TenCate Geotube® are registered trademarks of TenCate Geosynthetics. The information contained herein is to the best of our knowledge accurate, but since the circumstances and conditions in which it may be used are beyond our control, we do not accept any liability for any loss or damage, however arising, which results directly or indirectly from use of such information nor do we offer any warranty or immunity against patent infringement.

© 2020 TenCate Geosynthetics Asia Sdn. Bhd. All Rights Reserved.