

ACETube[®]

ACETube[®] is the registered trademark of ACE Geosynthetics for all its geotextile tubes. ACETube[®] is generally geotextile tube fabricated with woven geotextile (ACETex[®] PP or PET). Its size can be customized to fit the different project needs of customers. With careful selection of geotextile, proper engineering design, and adequate sewing considerations, ACETube[®] can be an effective solution for recommended applications.

For ACETube[®], ACE Geosynthetics can do as much as the following in production and service:

Material:

ACE selects and extrudes quality yarn for its fabric manufacturing.

Manufacture:

ACE monitors and controls the entire weaving production line from yarns to fabric, to ensure specified is produced for desired purpose.

Fabrication:

ACE carries out customized production, from fabric to designed product(s), with well-trained and experienced staff.

Design & Analysis:

ACE offers professional technical service, with variety of expertise, from the planning stage to work completion. Design and analysis suggestion for both product and project are available.

Construction:

ACE also provides assistance in the installation of its product, to ensure proper installation is done as designed.



APPLICATION (Shore Protection)

Erosion and sedimentation are the two fundamental problems that coastal and river management is fighting with. However, natural disasters and the raise of man-made structures sometimes make the problems worst. The application of ACETube[®] is an easier way to prevent shoreline erosion, protect coastal infrastructure, and enable dredging of river channels to reduce the possibility of flooding.



ACETube[®] can be applied in the following constructions and engineering purposes:

Shoreline Remediation

- Dune Reinforcement
- Groin
- Detached Breakwater
- Submerged Breakwater

Coastal Infrastructure Protection

- Reclamation Works
- Cofferdam Construction
- Pipeline Protection

River / Wetland Remediation

- River Bank Protection
- Wetland Remediation
- River channel Dredging

Harbor Dredging

- Channel Sediment Dredging
- Harbor Basin Sludge Dredging

APPLICATION (Environmental Remediation)

Dredging and dewatering work are one of the main tasks in environmental remediation. However, these tasks can be challenging in both budget and operation. ACETube[®] is to provide an effective way of dewatering treatment to waste/sludge/deposit from industrial, municipal, mining, agricultural, waterway areas and etc. It could reduce the cost and time in dewatering process, and improve the effectiveness of the dewatering treatment (compare with the drying bed method).



ACETube[®] can provide dewatering treatment in the following areas:

Industrial Sludge

To dewater industrial waste and sludge from factories (such as paper mill, sawmill, chemical related and etc.) for disposal.

Sewage Sludge

To substitute for random discharge and exposed waste lagoons, ACETube[®] provides one low impact treatment for the environment.

Agricultural Waste

To collect and treat the soil and waste from livestock and farming.

Mining Waste

To filter ash, tailings, and other solid materials from the mining water.

Sediments in Water

To dredge sediments in river, reservoir, lagoon, lake, and pond and keep these systems in proper function.



Real Case

ACETube[®] is applied in fish port building project as the breakwater structure. The breakwater constructed is about 671 meters. In-situ sand is filled into ACETube[®] to form the perimeter barrier structure of the breakwater. Sand is filled and compacted layer-by-layer inside the enclosure of the perimeter barrier structure as the core of the breakwater. Cost-effectiveness and short construction period are achieved with this innovative application of ACETube[®].

WHY ACETube[®]

Key Features:

- High grade fabric with satisfactory strength
- Excellent resistance to UV, alkaline, and acid
- Outstanding permeability
- Customized design available

Key Benefits:

- Cost-efficient
- High efficiency of construction
- Environmentally-friendly with less carbon emission and odor



Real Case

ACETube[®] system is used in municipal sludge treatment for dewatering and disposal purposes. Sludge with polymeric additive is pumped into ACETube[®] firstly; the size of ACETube[®] is 21 meters in circumference and 30 meters in length. The dewatering and sedimentation process automatically start with gravity. Sludge is consolidated to solid in ACETube[®] and is ready for disposal. More than 600,000 cubic meters of sludge are dewatered in this case. This process is relatively cost-effective for a dewatering treatment.

Below are the comparisons of cost and time in constructing a groin of 2422m length, 11m height, 37m width at the bottom, and 1.4m width at the top, with ACETube[®] and riprap.



Item	Riprap	ACETube [®]
Machine Cost (USD/month)	\$277,000	\$170,000
Overall Construction Cost (USD/month)	\$1,030,000	\$465,000
Construction Efficiency (meters/month)	179m	360m

The figures shown in this table are average rates obtained in the environment of Taiwan. It is only good for reference purpose. Some figures may change in a different environment.

Below are some comparisons between ACETube[®] sludge dewatering treatment and the use of traditional drying bed.



Item	Drying Bed (W=10m, L=17m)	ACETube [®] (C=20m, L=17m)
Capacity (m ³ /unit)	113 m ³	1347m ³
Annual Dewatering Capacity (m ³ /unit)	1469 m ³	8082m ³
Dewatering Cost (USD/ m ³)	\$1.98	\$1.84
Life Cycle Carbon Emission (tons)	2461 tons	1449 tons

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