ACEGrid®

ACEGrid® is the registered trademark of ACE Geosynthetics for all its geogrid products. Generally, ACEGrid® is a flexible geogrid made of high molecular weight and low-creep polymeric yarns, to a wide range of ultimate tensile strength for different applications. It is coated with protective substance(s) to enhance the overall resistance to abrasion, ultraviolet, weathering, acid, alkali, bio-decomposition, and/or other external conditions that may influence the performance. Most flexible ACEGrid® use high-modulus PET (polyethylene terephthalate, commonly known as polyester) yarns as the essential material, which provides excellent tenacity and high strength to satisfy the strength requirement for engineering applications.

Different types of ACEGrid® are engineered to take care of different engineering needs and applications. There are ACEGrid® GG, ACEGrid® GV, ACEGrid® GA, and ACEGrid® FR.

APPLICATION

ACEGrid® can be applied in the following constructions and engineering purposes:

Reinforced Wall and Slope
Reinforced Wall.
Reinforced Slope.

Reinforced Embankment
Reinforced Embankment.
Reinforced Abutment.

Ground stabilization
Airport Runway Reinforcement.
Railway Track Reinforcement.
Pile Foundation.

Pavement Reinforcement
Subgrade Stabilization.
Asphalt Reinforcement.

Tunnel Bracing



Real Case

2011 IFAI OUTSTANDING ACHIEVEMENT
International Achievement Awards

ACEGrid® is adopted in the construction of a complex reinforced structure close to the fault zone, where the road beside the slope collapsed in torrential rain. The scale of landslide is about 80 meters in width and 30 meters in height. Concrete pile and cantilever retaining are built and the toe of slope up to the high water level. And on top of that, wrap-around method with ACEGrid® is used to build a soil reinforced structure up to the top of slope; in-situ soil is wrapped and well compacted. The lasting structure effectively prevents erosion with less construction cost and time.

WHY ACEGrid®

ACEGrid® products have excellent performance in different constructions and environmental conditions.

Key Features:

- Wide range and variety of strength to satisfy needs.
- Low elongation and high tensile modulus.
- Excellent creep performance.
- Highly stable and durable performance against UV light and weather.
- Very low acid, alkali and chemical reactions.

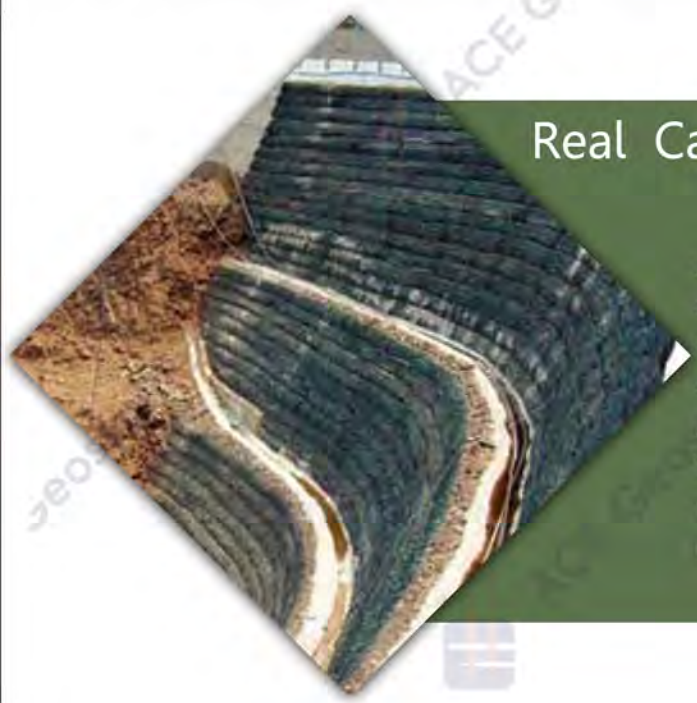
Key Benefits:

- Long term durability to ensure structure service life.
- High mechanical performance for construction.
- Cost and time saving.
- Quick and easy installation.

Unlike traditional reinforced concrete (RC) retaining wall, ACEGrid® reinforced retaining wall (constructed by geogrid wrap-around method) can be covered with vegetation, which enables the structure to merge into the landscape and nature. Moreover, the use of in-situ materials can help with the reduction of carbon emissions and cost associated with the project.

	Traditional RC Retaining wall	ACEGrid® Reinforced Retaining Wall
Structure	Rigid	Flexible
Height	5 m	5 m
Construction Time	15-25 m²/day	40-50 m²/day
Appearance	Concrete	Green Vegetation
Earthquake Resistance	Not Good	Good
Eco-Friendly	No	Yes
Carbon Emission	3050.31 kg-CO_2/m	385.56 kg-CO_2/m
Cost	NT$4,636/m²	NT$3,004/m²

The information shown in this table is extracted from the research "The Life Cycle and Carbon Reduction Study on Concrete, Reinforced Concrete and Soil Reinforced Retaining Wall" done by the National Cheng Kung University Research and Development Foundation. This research was carried out with the environment and conditions in Taiwan. The figures shown can vary from country to country, and are only to give an idea in this case.



Real Case

2008 IFAI Award of Excellence
International Achievement Awards

ACEGrid® is included in the design of a complex soil retaining wall for a slope repair project. A number of storms have caused damage to the subgrade of a section of the hilly road, and the down slope collapses eventually. The solution proposed is to construct a soil reinforced slope with ACEGrid® on concrete slab, supporting by micropiles. The design structure is about 18 meters and takes the shape of the existing curve; in-situ soil is wrapped and well compacted to ensure structural stability. This flexible reinforced structure survives several typhoons after completion.