



CHEMA FOAM

BUILD YOUR DREAM



ABOUT US

Chema foam group companies was founded at 1987, by General Engineer Atef Al-Sawey researches in building materials.



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Academy of Scientific Research & Technology
Product patented certificate 020865 for Chema Block®

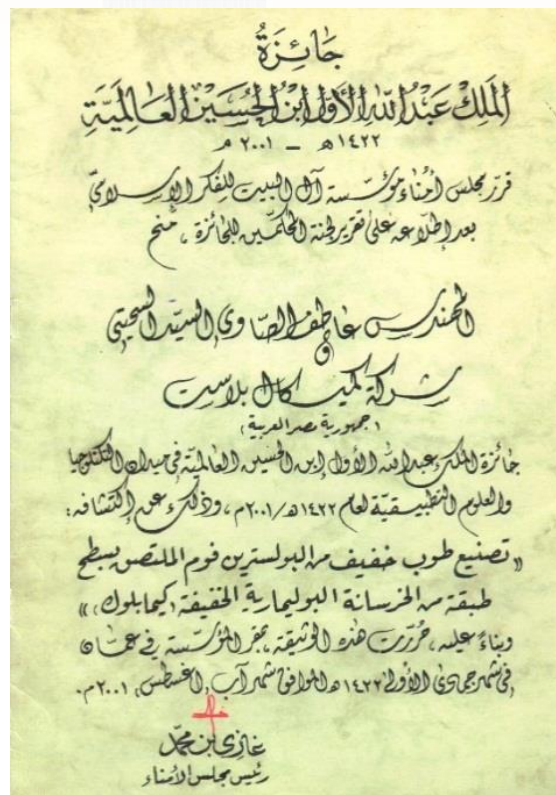


King Abdullah Bin Al Hussein International Award 2001 in technology and applied sciences for Chema Block® innovation

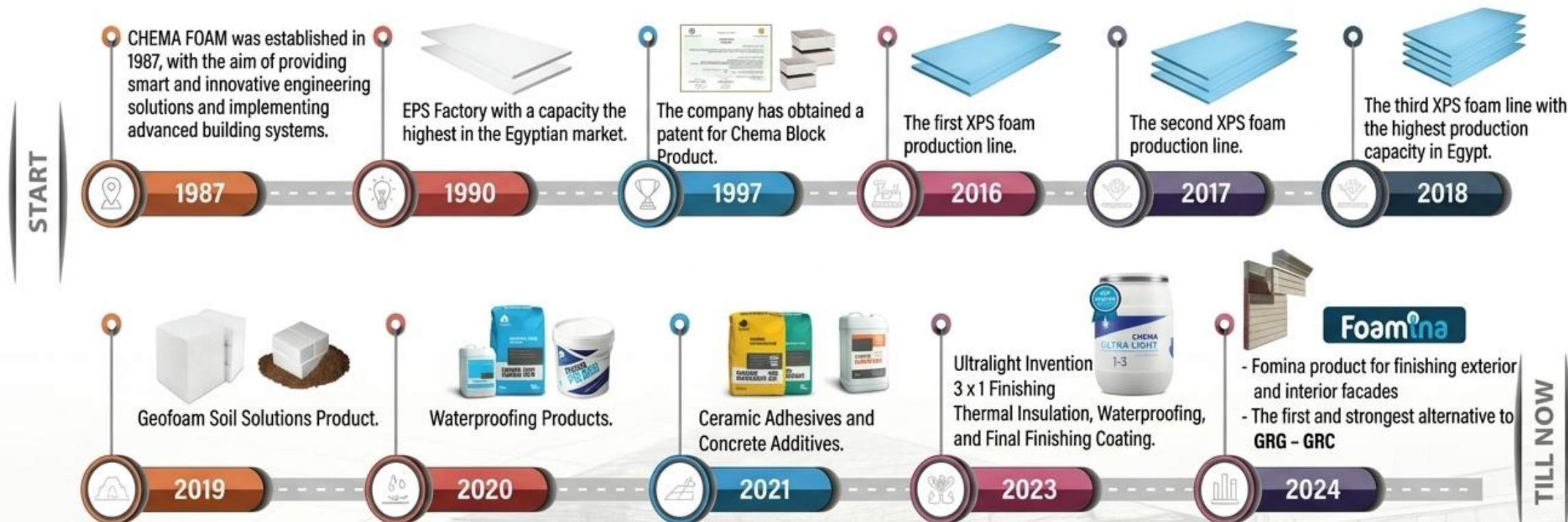


ISO 9001 certificate 2015 for Production of Expansion and Extrude polystyrene foam products

PATENTS & AWARDS



CHEMA FOAM CO. TIME LINE

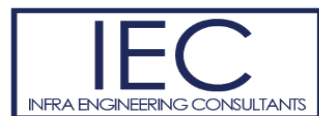
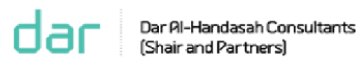


Some of Our Customers

CONTRACTOR



CONSULTANTS & DEVELOPERS



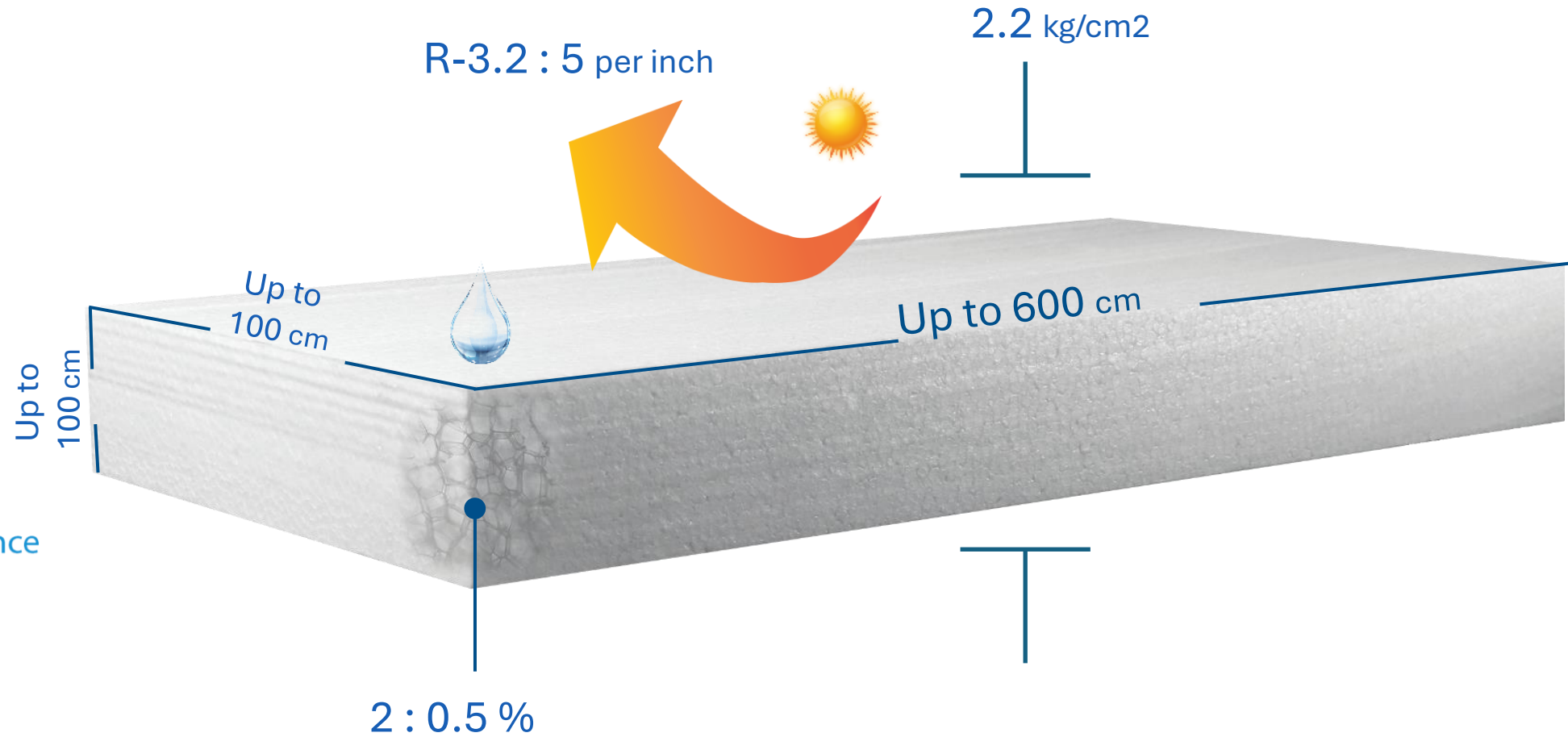
INDUSTRIAL





What
is GEO FOAM ?

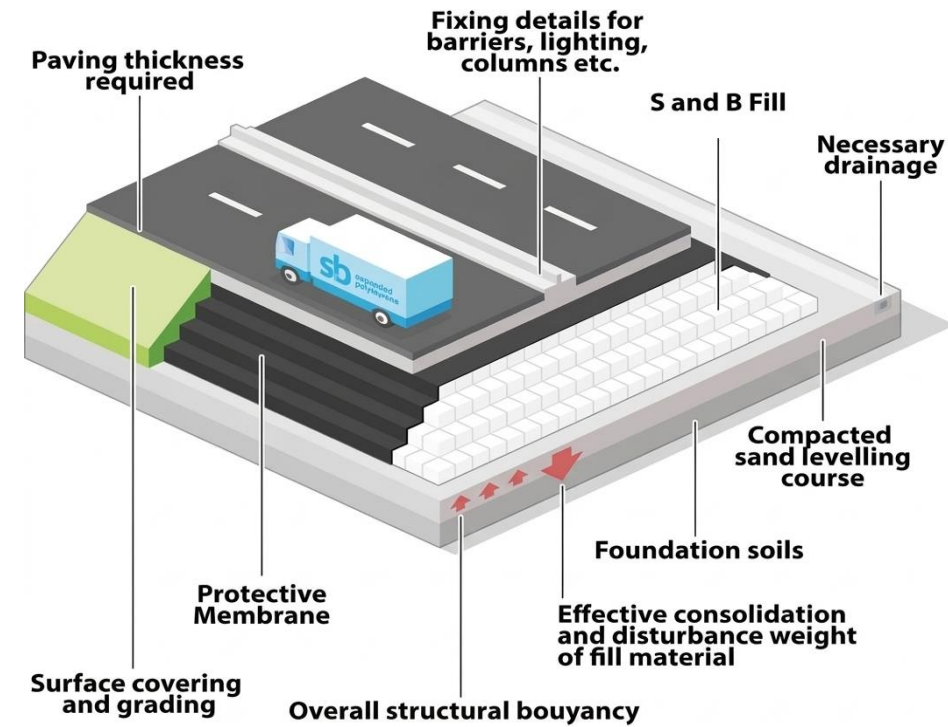
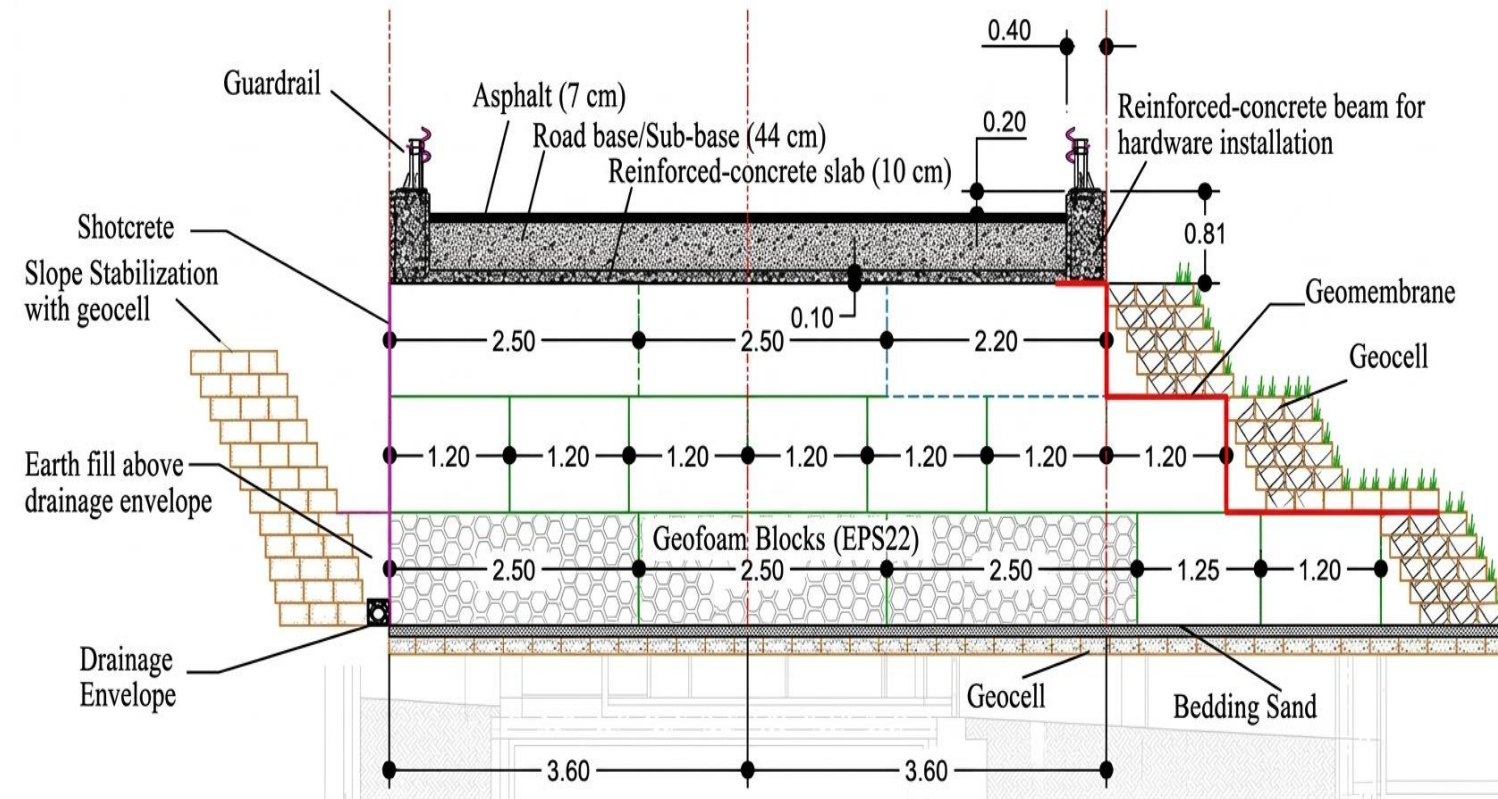
GEO FOAM



⊥ Compression resistance

↪ Thermal insulation

● Water absorption



GEO FOAM

Why GEO FOAM ?



GEO Foam Advantages

Soil bearing capacity is 100 kPa

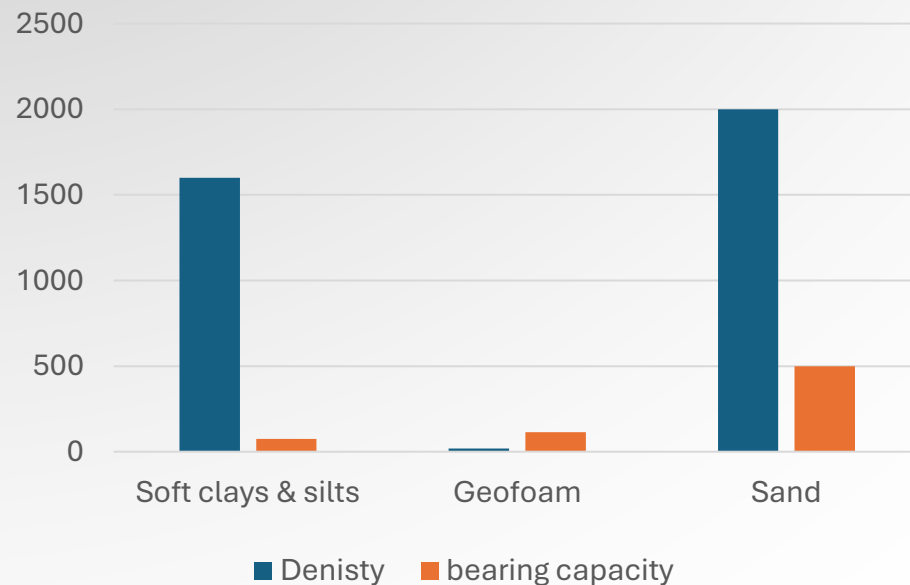
Use a standard fill 3 meters high

Weight of 1 m³ of soil ≈ 18–20 kN/m³

Load on soil = ~60 kPa

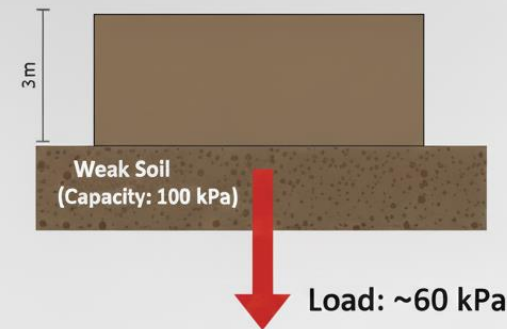
Weight of 1 m³ of Geofoam ≈ 0.3 kN/m³

Load on soil = ~1 kPa only



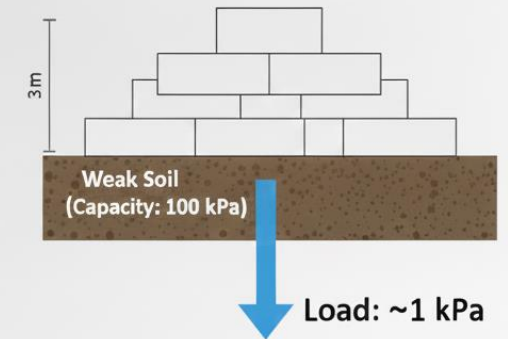
Geofoam Reduces The Load On Weak soil

1. Standard Soil Fill



Weight 1m³ Soil ≈ 20 kN/m³
High Stress, Risk of Settlement

2. Geofoam Fill



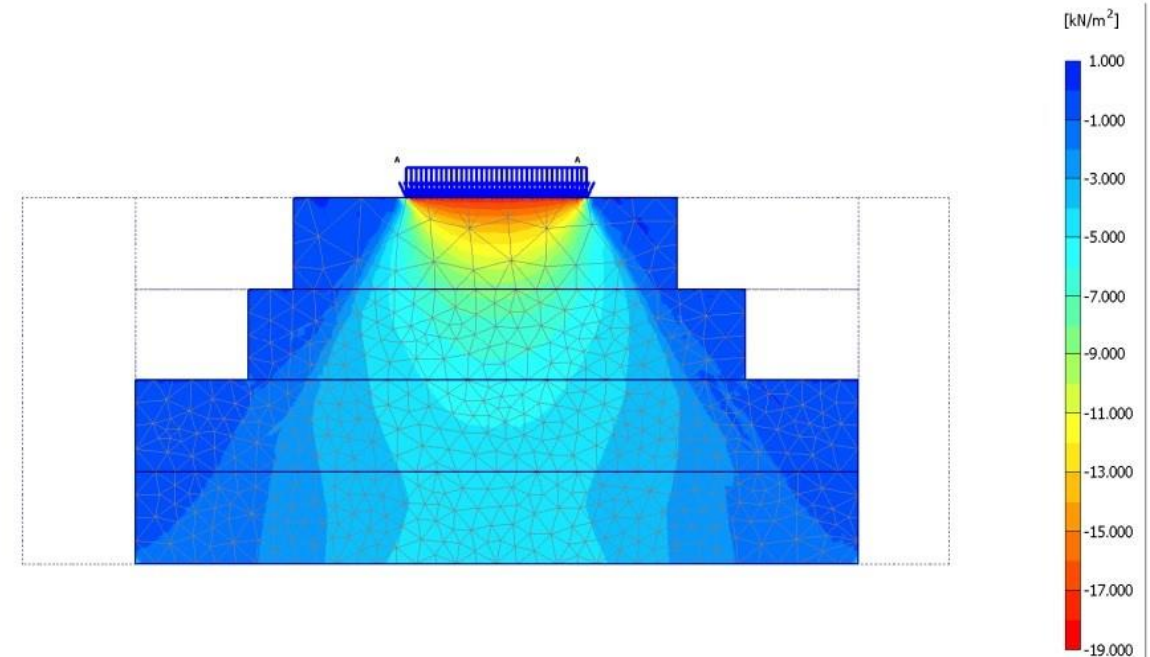
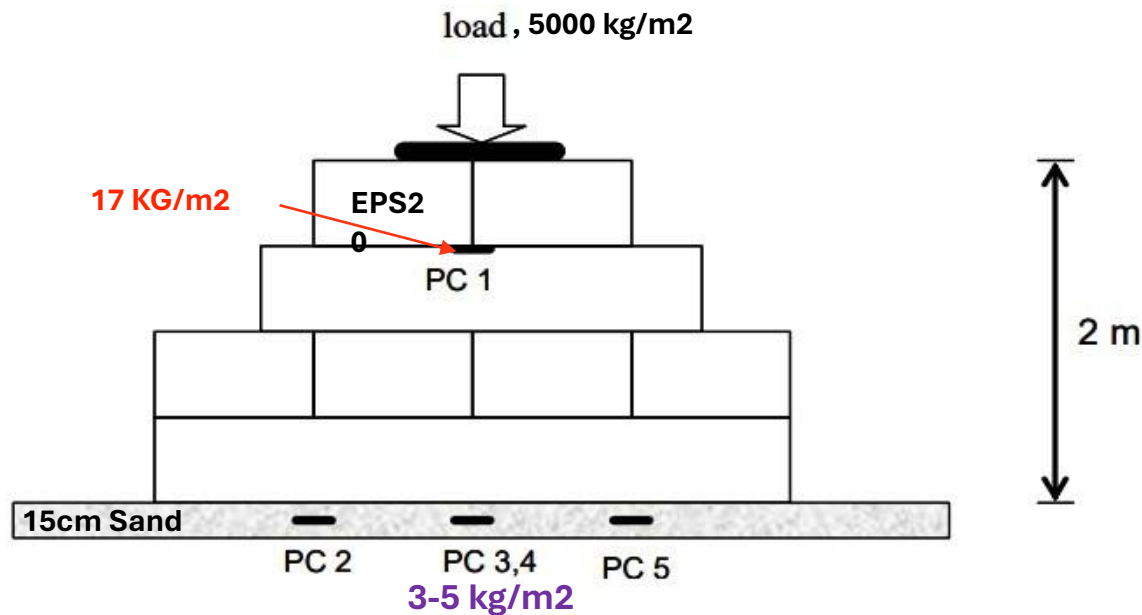
Weight 1m³ Geofoam ≈ 0.3 kN/m³
Low Stress, Minimal Settlement

Key Point: Geofoam replaces heavy soil to REDUCE the load from ~Pa to 1 kPa. It LIGHTIENS the fill, it NOT strengthen to the soil.

GEO Foam Advantages

Uniform stress

Unlike other lightweight fills, the material's **homogenous** composition provides uniform load transfer and eliminates differential settlement.

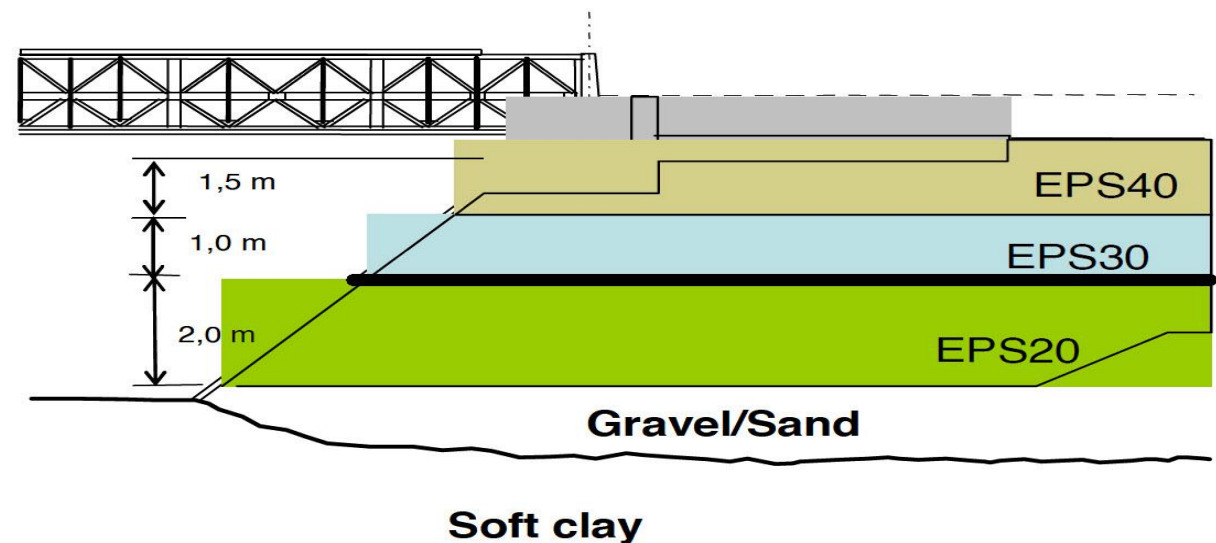


GEO Foam Advantages

Settlement

- Geofoam
- **6.2 cm after 12 years** of using.

- Traditional backfill
- **20 cm per year** of using.



GEO Foam Advantages

Reduction of Axial Loads

Geofoam significantly reduces axial loads on weaker sub-soils while consistently reducing or eliminating lateral loads on abutments and foundations.



GEO Foam Advantages

Very low maintenance.

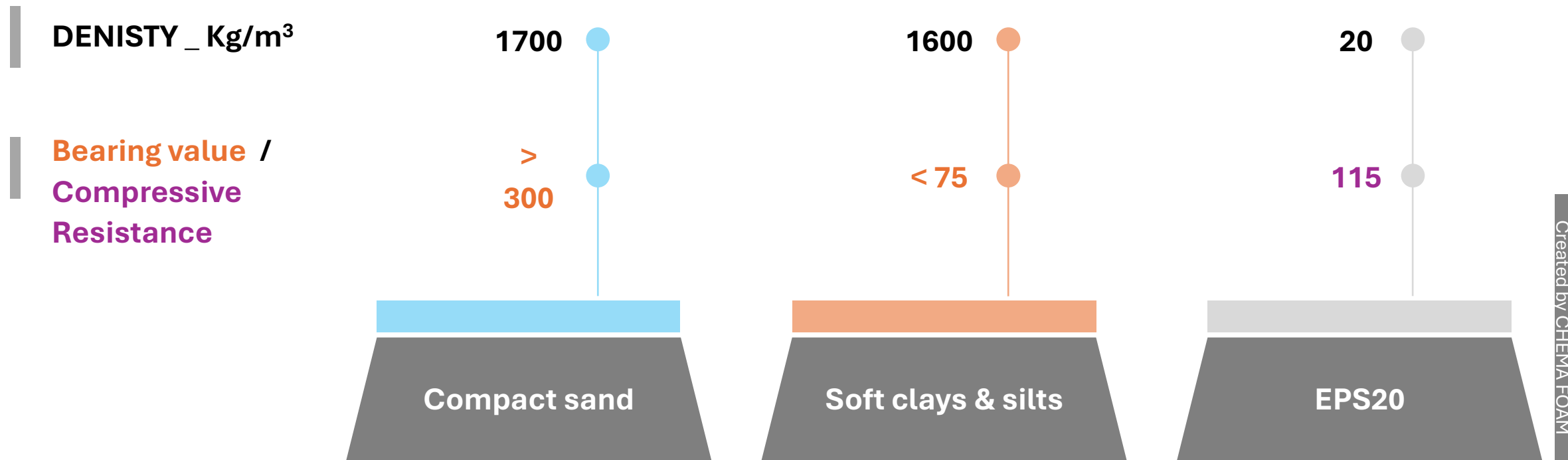
Excavation of a **24 Years
old EPS block** at flom
bridge



GEO Foam Advantages

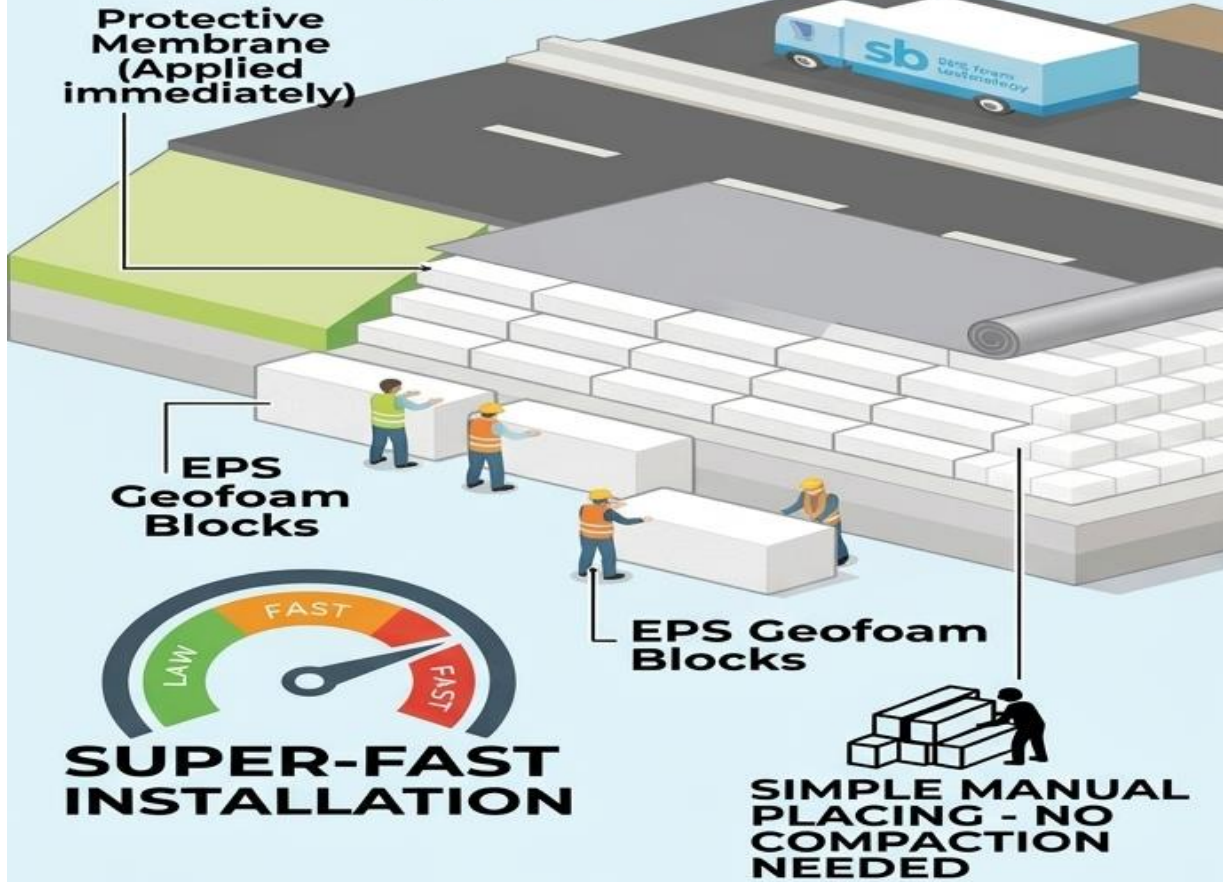
Extremely light, EPS has a density that is less than 1% of typical soil fills.

Extremely strong, Compressive resistance values range from 58 to 220 KPA, at a 1% strain.



GEO Foam Advantages

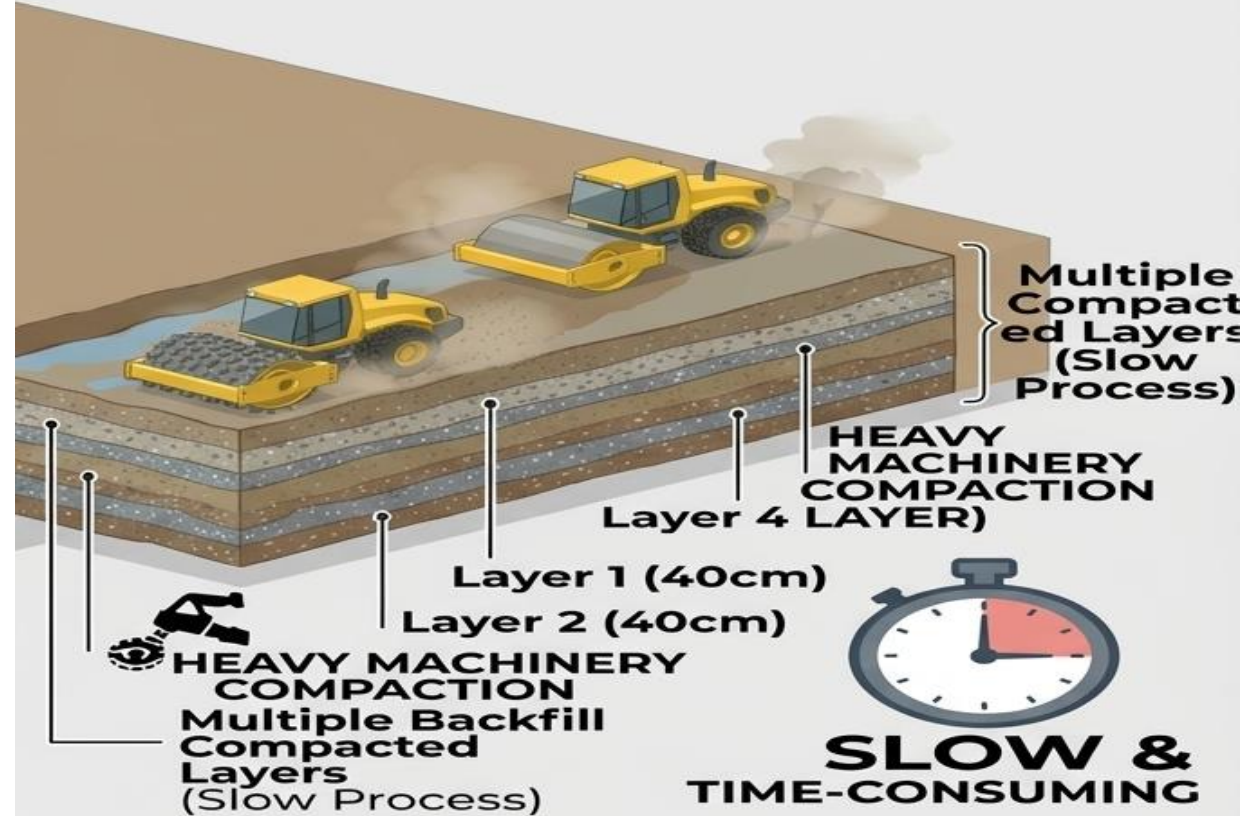
EPS Foam Block Installation (Geofoam)



تنفيذ بلوكات فوم EPS -
سرعة فائقة ولا يحتاج للدمك

EPS Foam Block Installation (Geofoam)

Traditional Backfill Soil Installation

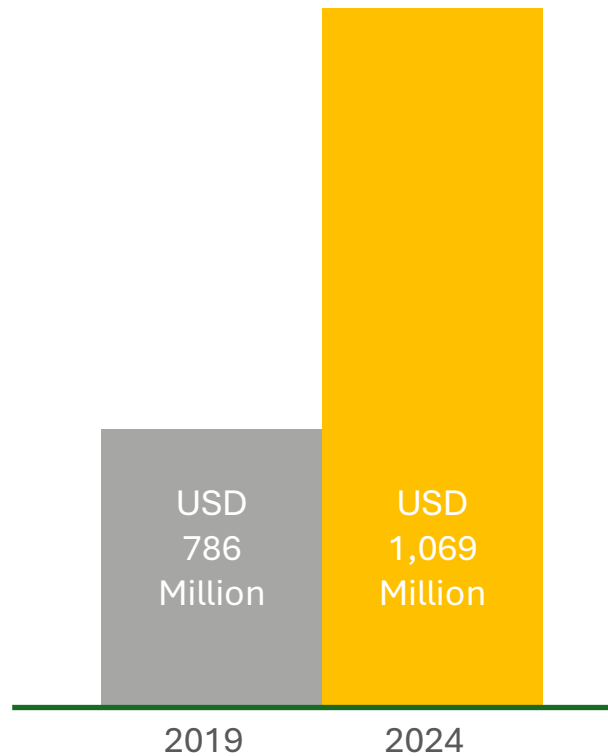


تربة إحلال عادية -
بطيئة وتحتاج لدمك كل طبقة

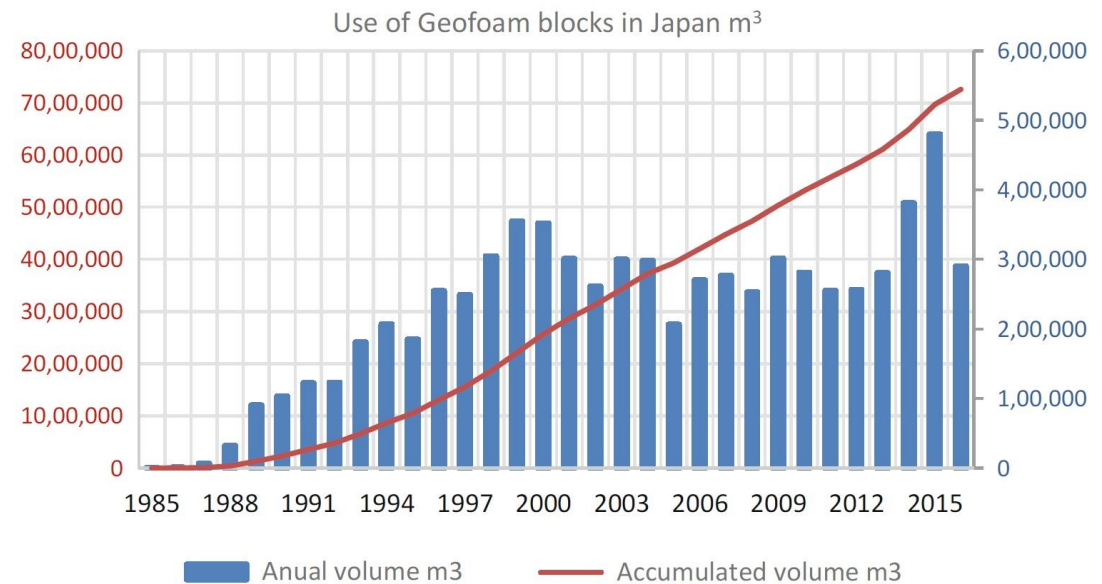
Traditional Backfill Soil Installation

GEO FOAM

Geofoam has been used in worldwide for more than 30 years.



Worldwide



Japan

Recommendations

Fire Hazards:

Fireproof is added to the raw material



Weak resistance of petroleum products:
Use of HDPE linoleum



Susceptible to insect and reptile damage:
Anti-insect agents are added



Vibration resistance:
Using Metal GeoFoam Gripper



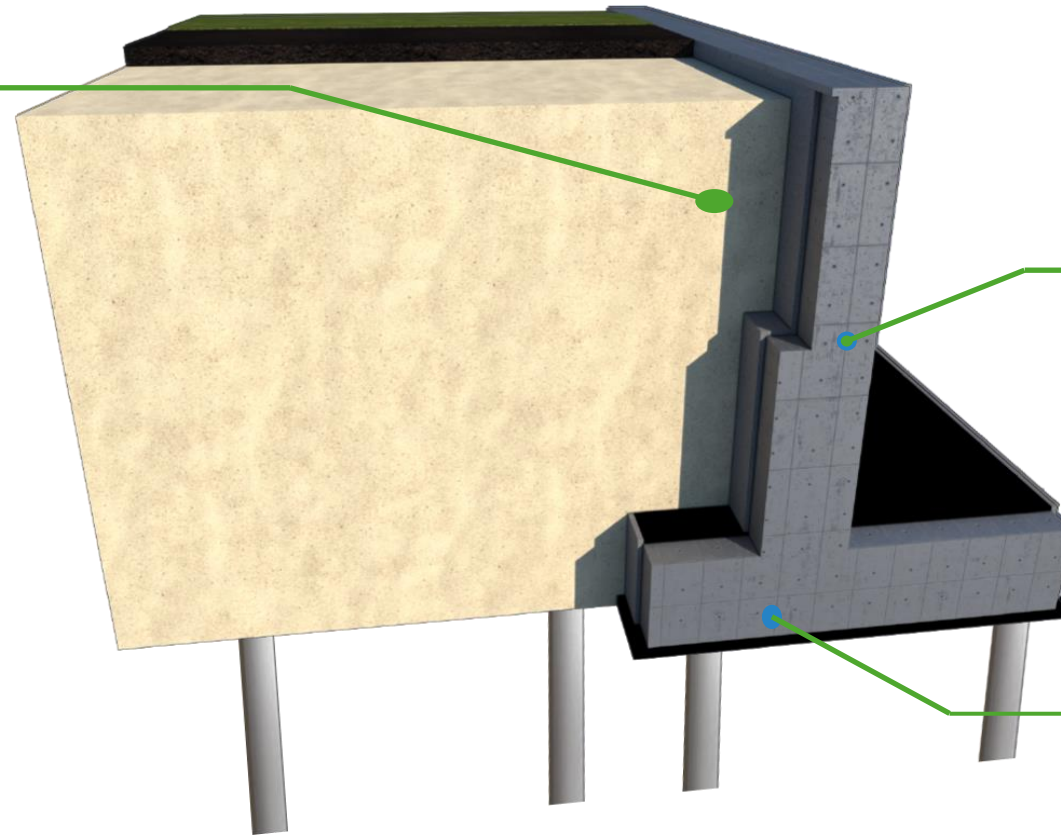
Halfa Plant:

It does not contain any organic compounds that
help plant growth



Retaining & buried wall backfill

Increased stress due to soil
behind the walls



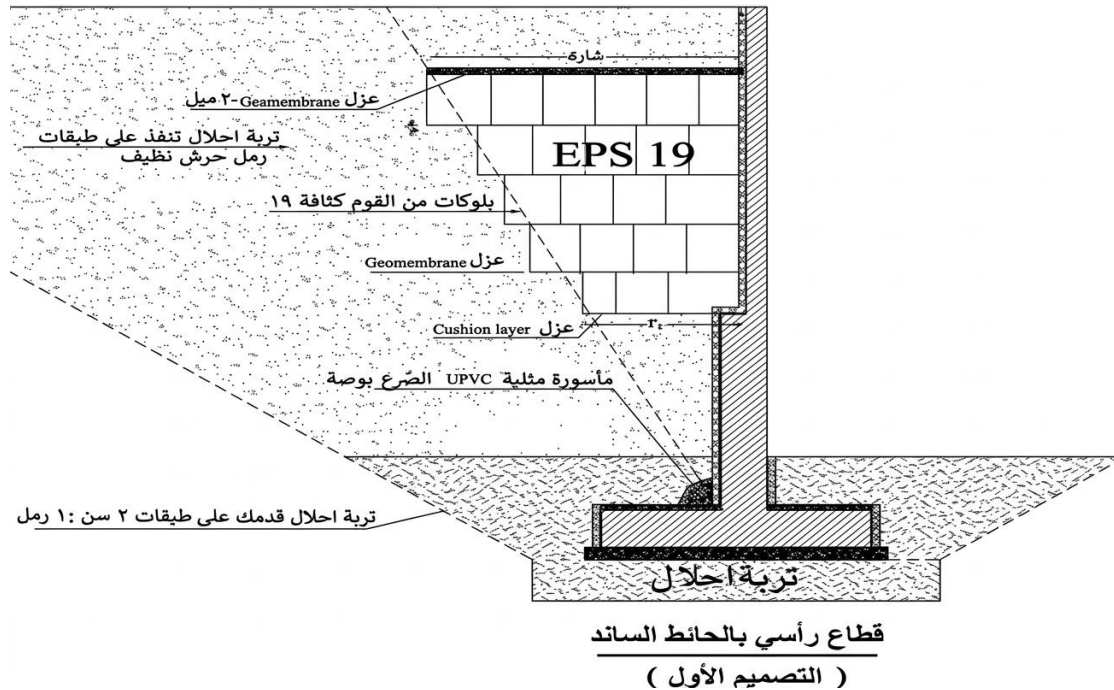
Increasing the
quantity of concrete

Increased loads and the need for
soil reinforcement

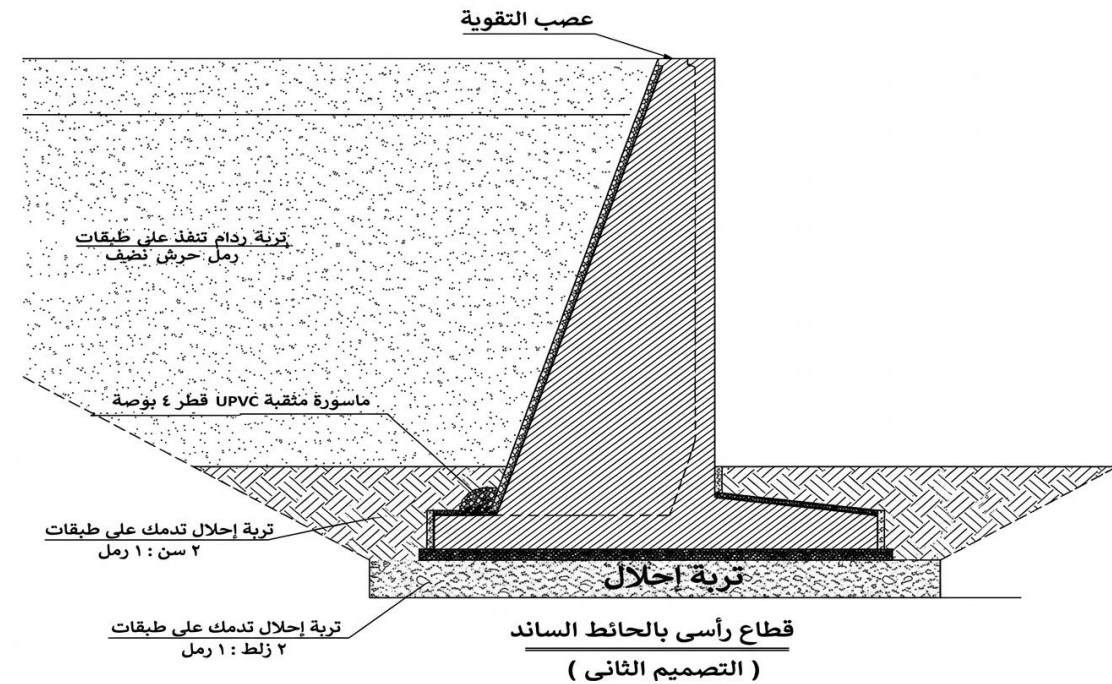
Retaining wall

Design

➡ Height 11 m



The first alternative
Geofoam

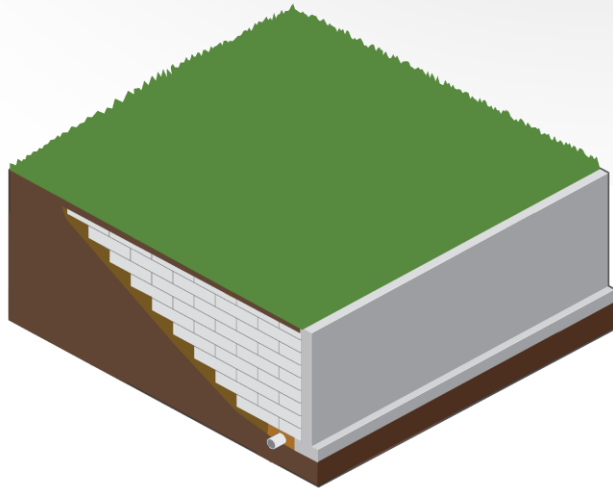


The second alternative
Backfill soil



Applications

Retaining & buried wall backfill



West Virginia University student housing

5000 m³ of **EPS19 Geofoam** was used as a lightweight retaining wall backfill project in Morgantown, West Virginia.



Road construction over poor soils



Cullinan Ranch Restoration, Phase III

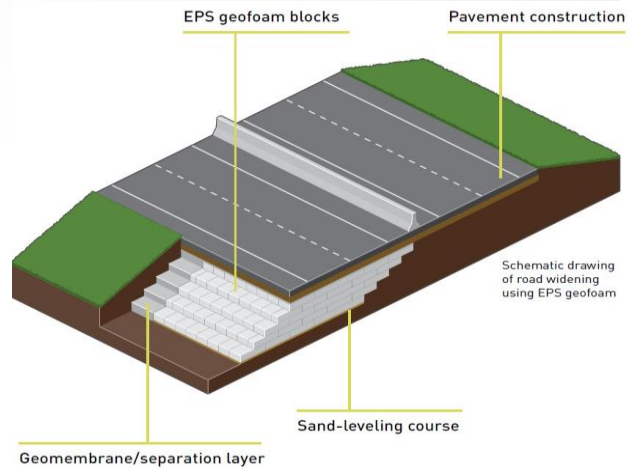
11468 m³ of EPS29 Geof foam was used as a lightweight structural fill on a roadway embankment project in a national wildlife refuge in Vallejo, California.



Road widening

Interchange, Gary, Indiana

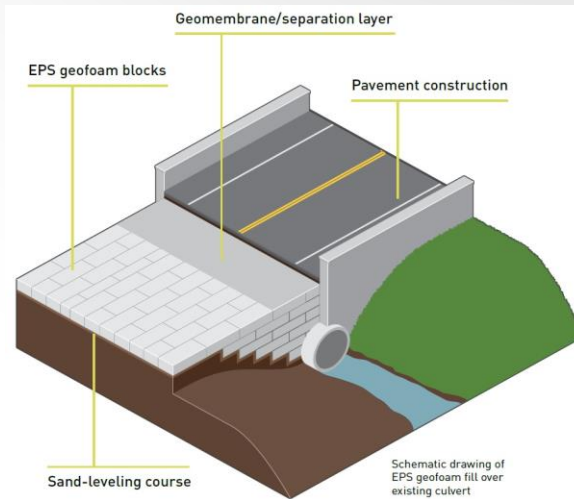
9000 m³ of **EPS22 Geofoam** was used as a lightweight structural fill on a road widening project in Interchange, Gary, Indiana



Culverts

Snohomish Culvert

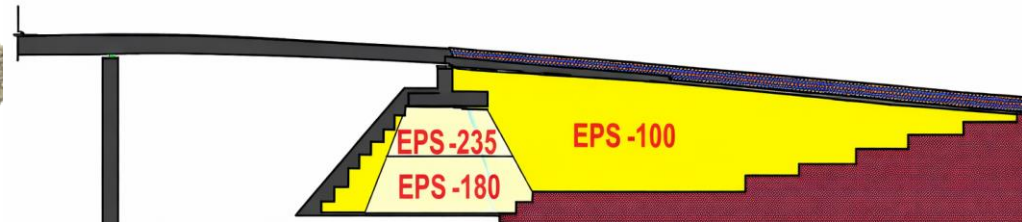
2000 m³ EPS19 Geofoam as culvert protection fill in Marysville, Washington.



Bridge support

The Lokkeberg Bridge

12535 m³ of EPS19 was used as bridge foundation support directly on the EPS without the installation of deep foundations project in Norway.



Landscaping

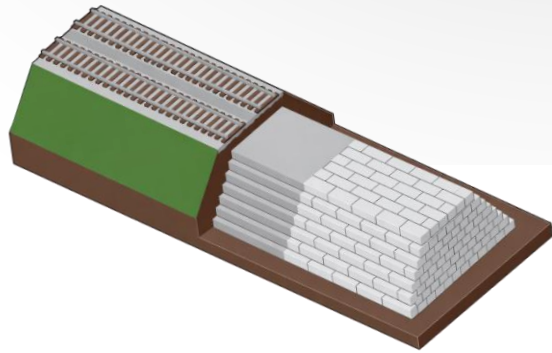


Maggie Daley Park

50000 m³ EPS22 and EPS29 Geofoam was used as a lightweight fill over existing unsuitable weak soils for load reduction and replacement of unsuitable materials project in downtown Chicago.

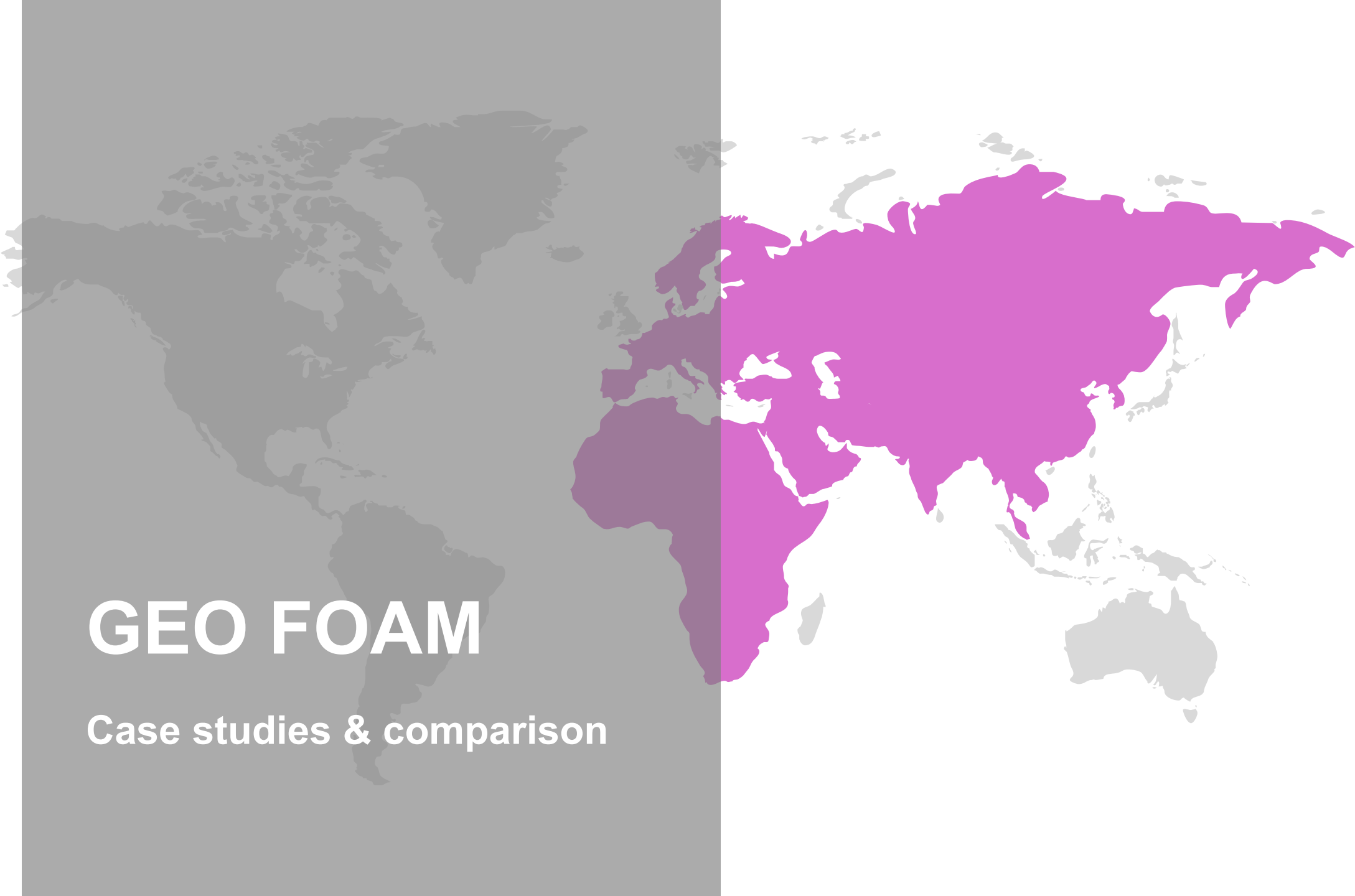


Rail embankment



22001 m³ EPS geofoam can be used to construct railway embankments that do not overload the existing soils. As a fill material, EPS geofoam is strong enough to support railway loads.



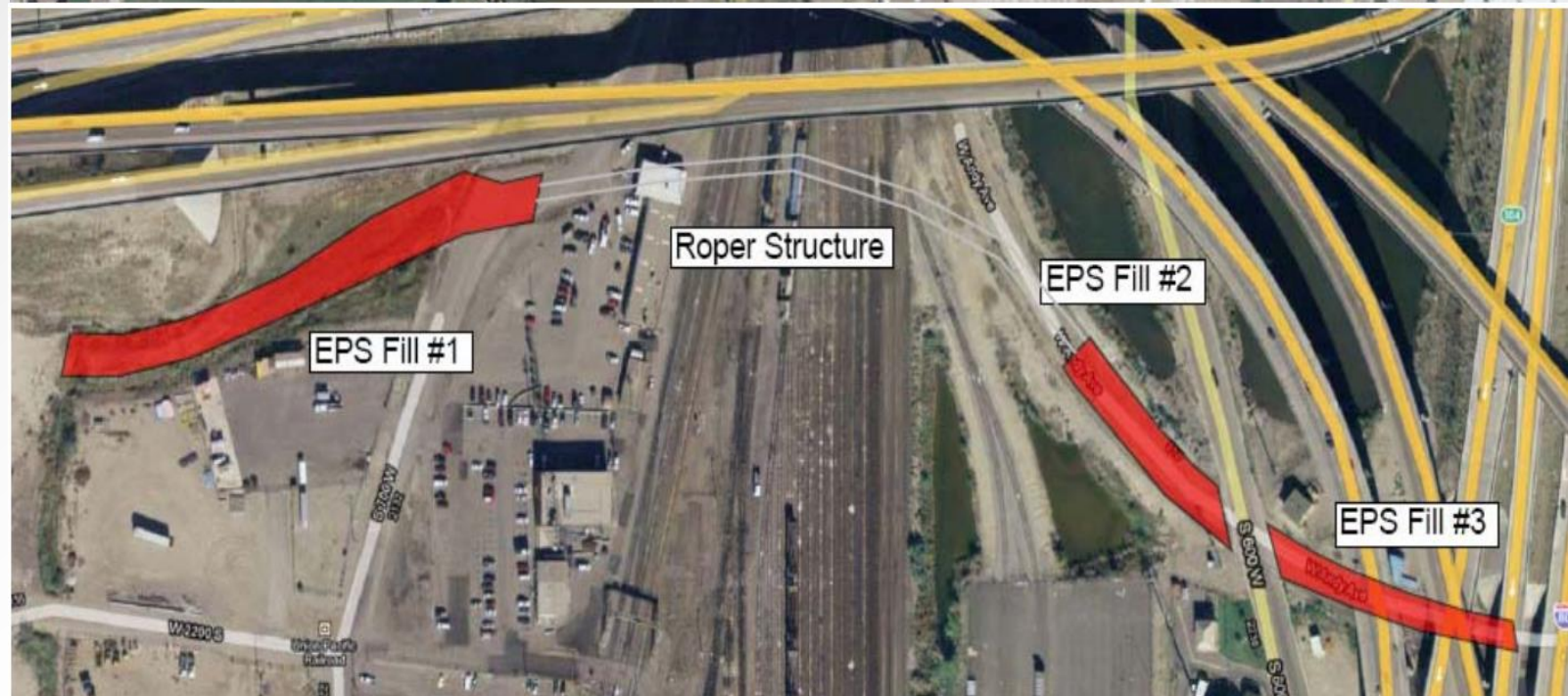
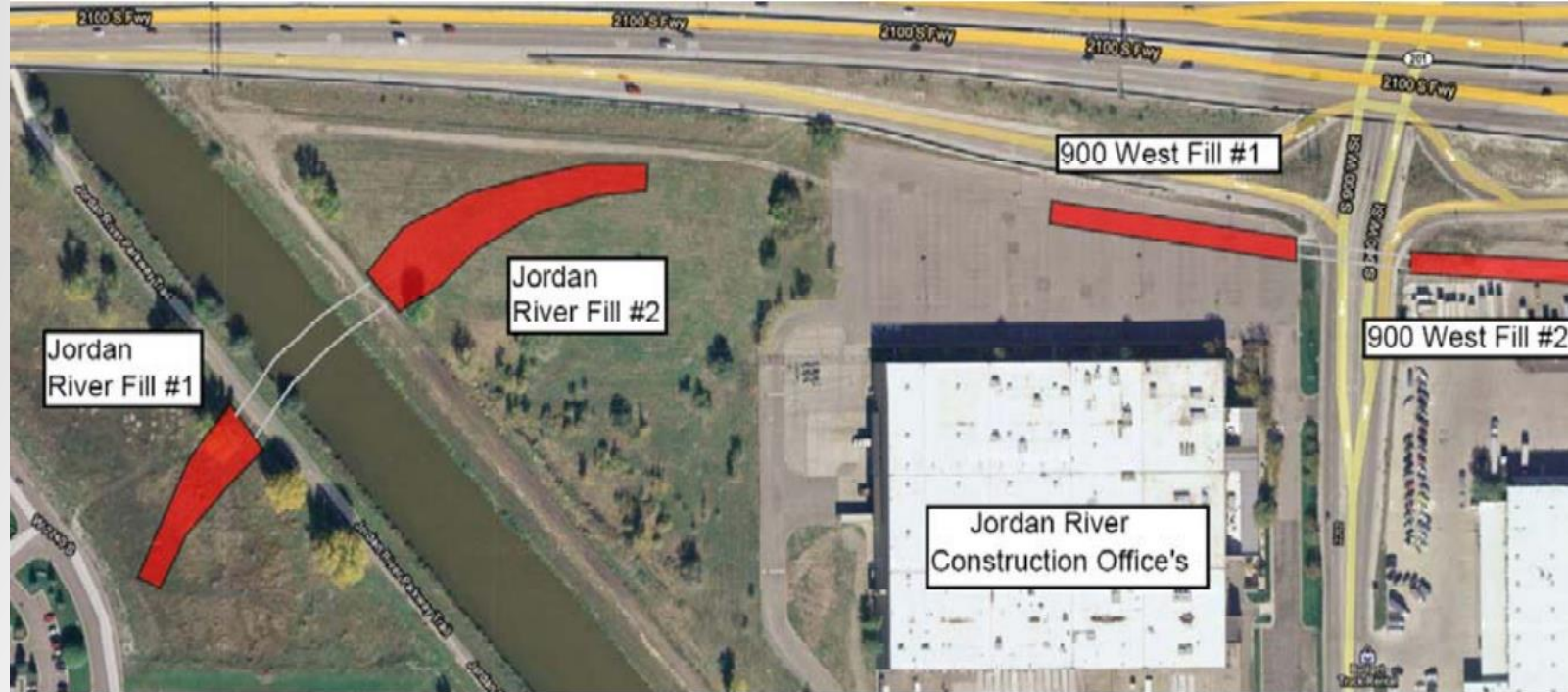
A world map is shown in the background. The landmasses are in a light gray color. A vertical purple line runs through the center of the map, passing through Africa and Asia. The landmasses to the right of this line (Africa, Asia, and Australia) are filled with a solid purple color, while the landmasses to the left (North and South America) remain in the light gray color.

GEO FOAM

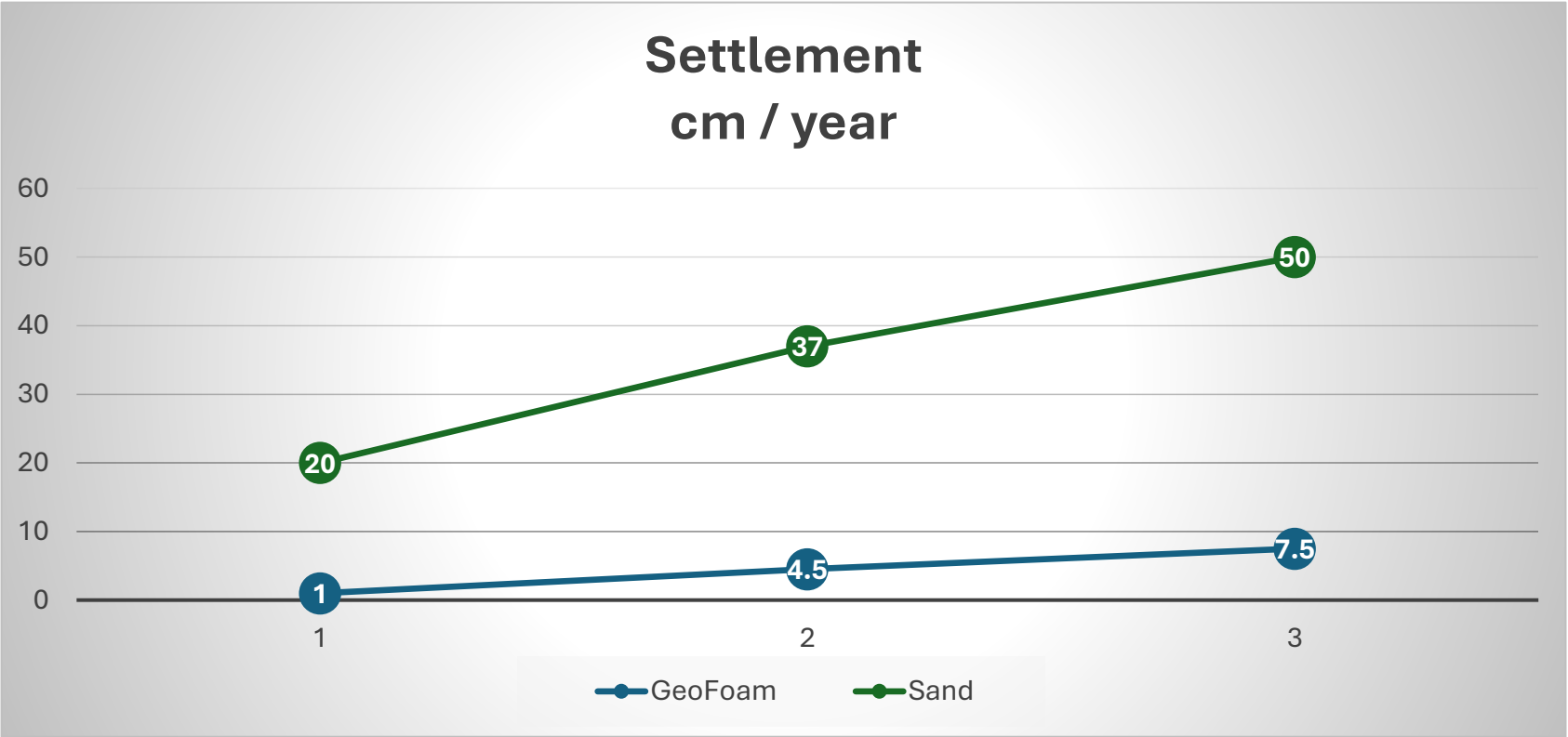
Case studies & comparison

West Valley project

60,000 m³ is the amount of geofoam
The entire length of the line is 8 km



Estimating the settlement during the year (cm)



Unity	Foam	Sand	Statement
Time	6 months	3 Years	Execution Time

Recommendations:

The second alternative is to use foam

🕒 **Time:** Completed in **6 months**

🚧 **Road Closure:** Minimal disruption



🔧 **Maintenance:** No maintenance



The first alternative is using backfill soil

🕒 **Time:** Up to **3 years** with staged work

🚧 **Road Closure:** Repeated closures for repairs



🔧 **Maintenance:** Frequent maintenance required





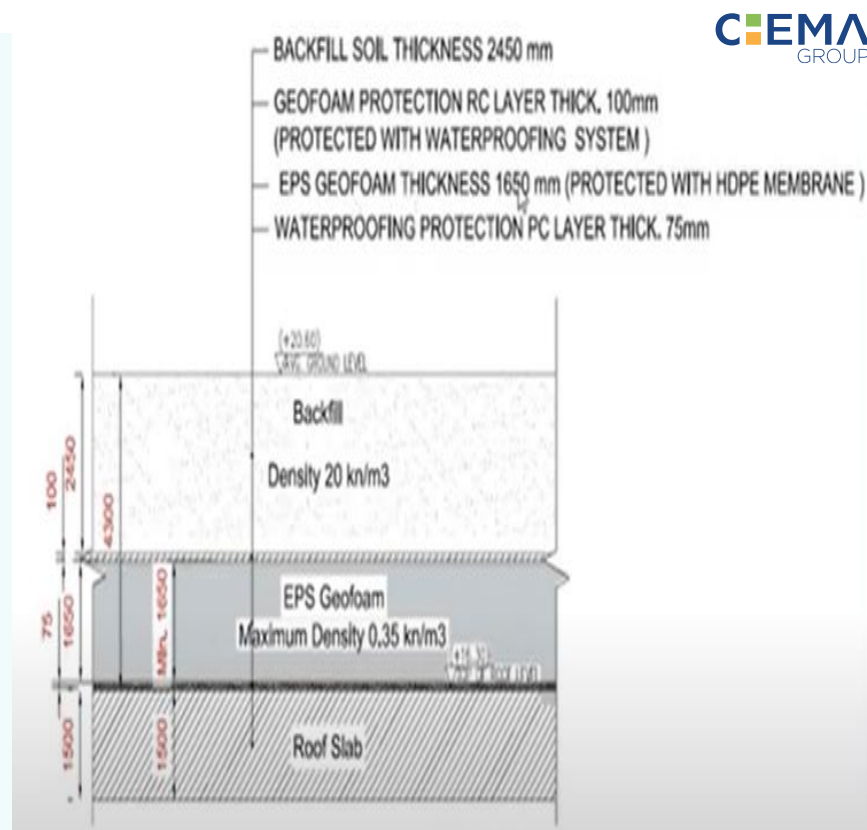
GEOFOAM

Projects References



Metro Line Phase 4 Station 4 (Grand Museum station)

- Location: Giza, Egypt.
- Client: Arab Contractors.
- Foam density: 35 kg/m³.
- Quantity: 1900 m³.
- Year: 2022.



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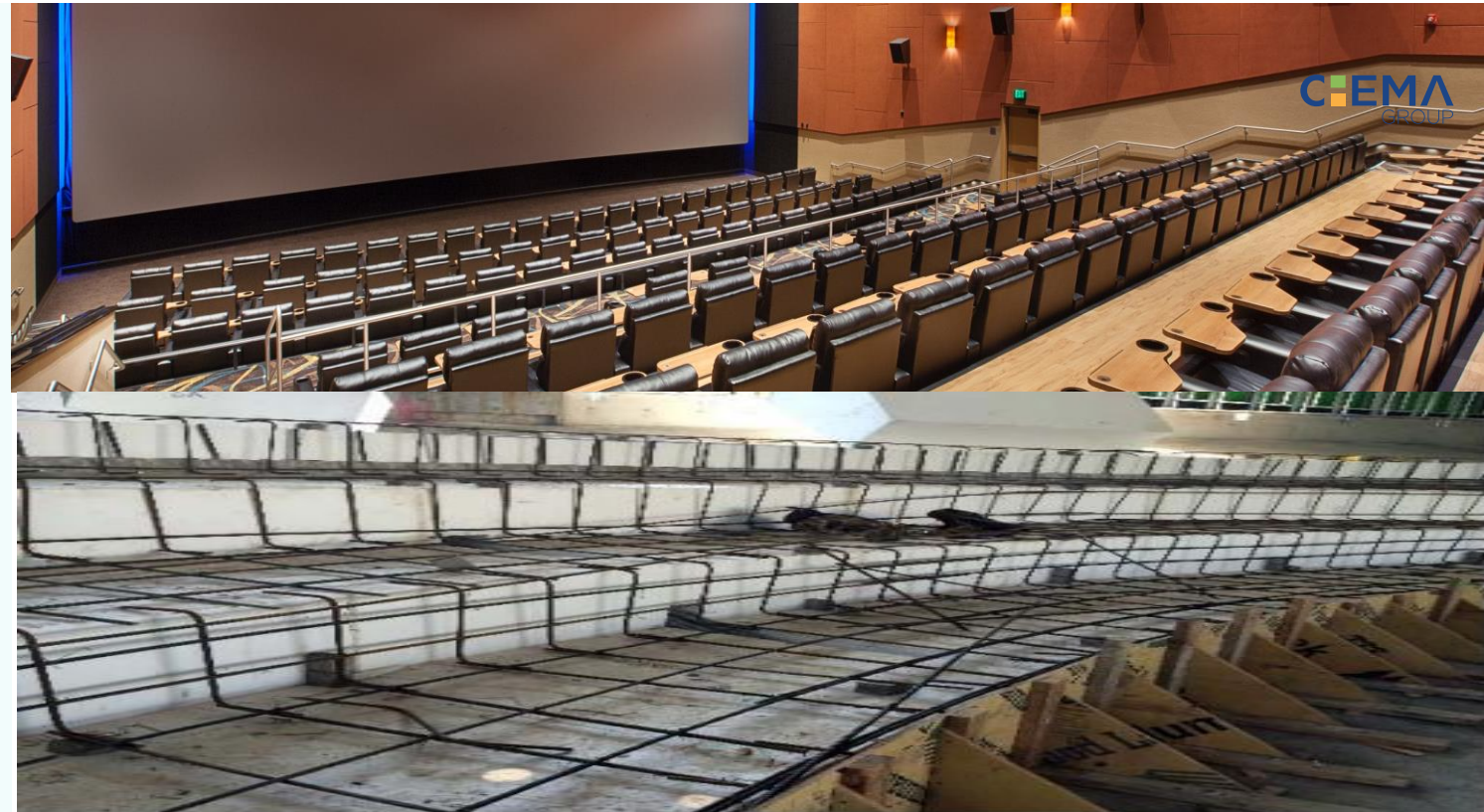




CHEMA FOAM
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NIS THEATER

- Location: New Administrative Capital, Egypt.
 - Client: Advanced Education.
 - Foam density: 20-35 kg/m³.
- Quantity: 300 m³.
Year: 2020.



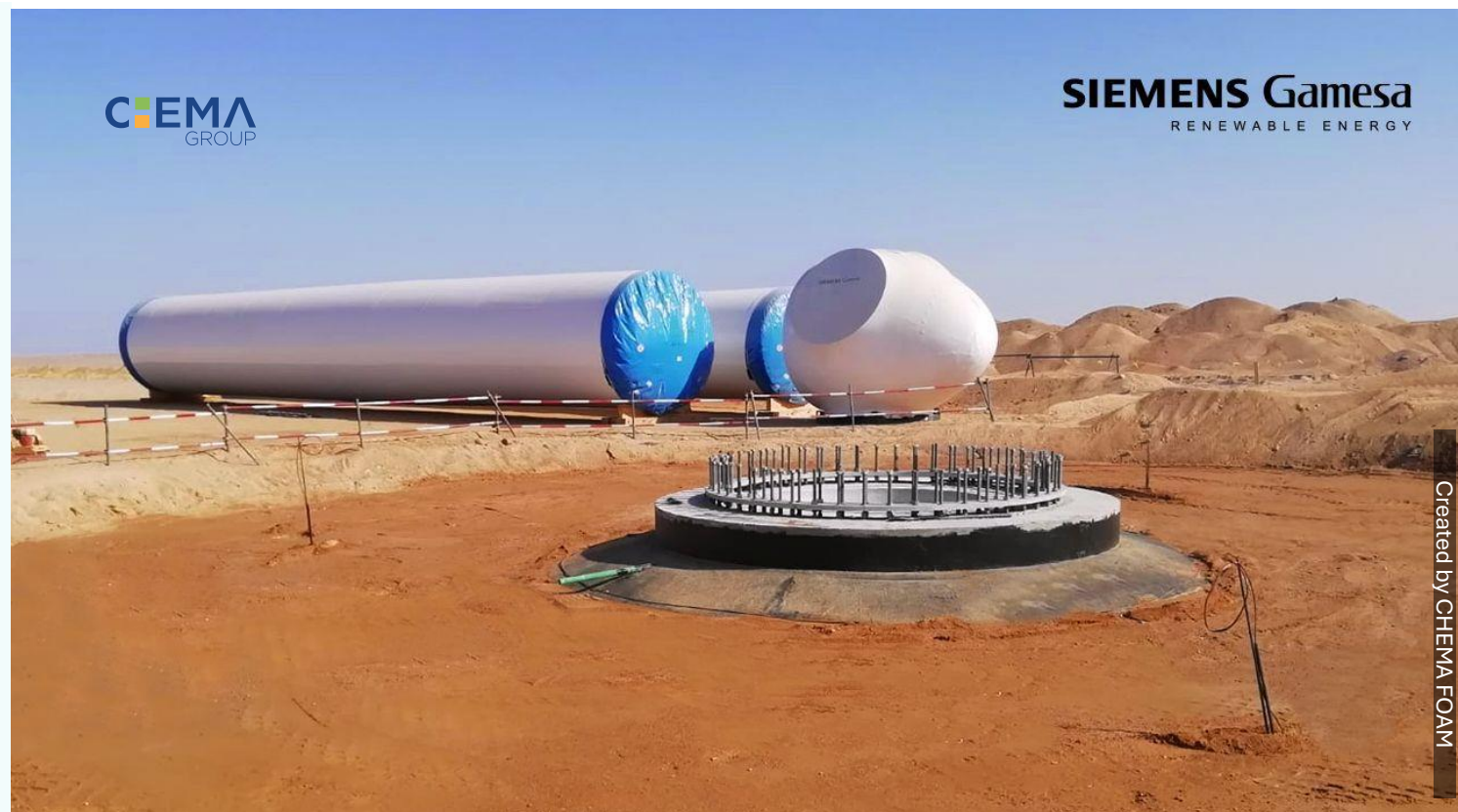
Block 6 Sodic

Location: Giza, Egypt.
Client: Hashemiya.
Foam density: 20 kg/m³.
Quantity: 200 m³.
Year: 2021.



Lekela Wind Farm

Location: Ras Ghareb, Egypt.
Client: Pioneers of Modern Engineering.
Foam density: 35 kg/m³.
Quantity: 700 m³.
2020.





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