



GEOFABRICS CASE STUDY



FLOOD EMERGENCY RESPONSE IN SEMARANG, INDONESIA

PRODUCTS USED

MACCAFERRI FLEXMAC® TEMPORARY FLOOD BARRIERS

- Rapid installation with minimal effort due to its lightweight structure and is 40 times faster to construct than sandbags
- Hexagonal double-twisted wire mesh structure provides greater flexibility than rigid solutions with the steel bars providing stability, this enables the units to be stacked if required
- Easy to assemble, the individual units are connected by pins to create a longitudinally safety barrier and conveniently filled onsite using locally available materials such as sand, soil and gravel

PROJECT DESCRIPTION

Located in the northern part of Central Java in Indonesia, the Semarang community have been left devastated in recent years due to flooding caused by high tides. In May 2022, sea levels had dangerously risen to 210cm, potentially triggering further flood events. Tidal records from 2017 to 2021 show the highest tide recorded was 180cm, which the Semarang tide had exceeded.

Due to extreme flood weather, the Ministry of Public Works implemented emergency response by installing new embankments around key infrastructure and coordinating local governments to prepare flood control facilities.

OUR SOLUTION

The Maccaferri team in Indonesia worked closely with the contractor, AKSO Nindya Karya on an embankment design for Semarang's main airport, Ahmad Yani International. FlexMac Temporary Flood Barrier was recommended as a solution to mitigate and control the flow of seawater around the airport.

The embankment was built 5m high on a foundation made with bamboo poles that were 4m deep. FlexMac units were integrated into the 3m high earthen embankment, filled with soil and stacked on top of one another to form two layers of barrier.

FlexMac offers a quick-to-deploy response to flood emergencies. Its lightweight structure enables it to be quickly assembled and joined with pins to form a longitudinal barrier with minimal effort required. The use of FlexMac as a flood protection barrier has been around for decades in Europe and America. It is still relatively a new concept in Indonesia but has proven to be an effective solution against rising waters in Semarang.



3m
high earthen
embankment

2x
stacked barrier
layers



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