

## COASTAL PROTECTION IN TANAH LOT, BALI TANAH LOT, BALI, INDONESIA

### Seawalls and Shoreline Structures

#### Problem

The owner of a resort located on a beach near Tanah Lot (Bali, Indonesia) asked Maccaferri to provide an environmentally friendly solution to limit the erosion processes ongoing at his property. The main wave direction in that area is perpendicular to the shoreline. This was causing an offshore transport resulting in a progressive sandy beach erosion during the rainy season. The plan of the client was to protect an area extending toward the seaside for approximately 30m. Following the resort development plan, the mentioned area will be used for the construction of a swimming pool. It is worth to note that the owner of a nearby property has built, to face the same beach erosion issue, a concrete crib wall which collapsed after one year due to a severe toe scour.

#### Solution

A 100m long gabion sea wall was installed in front of the property to protect it against wave action during the rainy season.

Countermeasures to face the risk of toe scour and structure collapse were taken. 1m high gabions as foundation and 30cm thick and 3m long Reno Mattresses as toe scour apron were installed to minimize the risk of structure failure due to scouring processes.

In fact, even in case of severe toe scouring due to wave action, the flexible structure of Reno mattresses will accommodate the foundation deformations.

All the double twisted wire mesh products used were Galfan (Zinc-Aluminum alloy) and PVC coated in order to meet the client requirements in terms of structure durability. A nonwoven geotextile (MacTex MXL) with a filtration function was placed between gabions and backfilling material.

The construction of the gabion wall was finished in September 2015, before the beginning of the rainy season. 1 year after the end of the works, the structure perfectly worked against beach erosion during the rainy season.

**Client:** PRIVATE RESORT

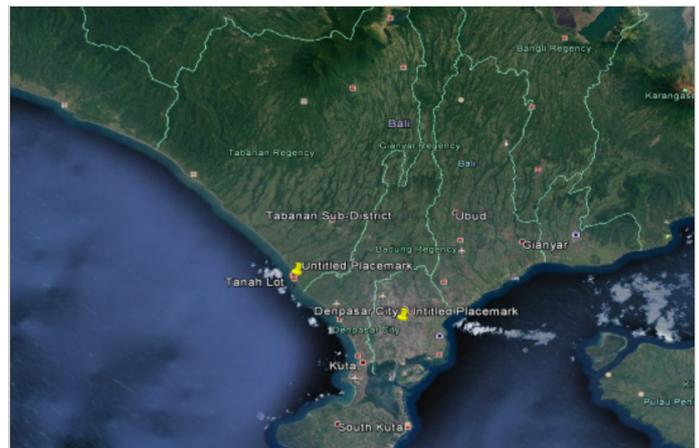
**Designer / Consultant:** N/A

**Contractor:** N/A

**Products used (Qty.)**

- Gabion N/A

**Date of construction:** 07/2015 - 09/2015



Site Location



Gabion Installation



Finished Foundation Structure