

## DEBRIS FLOW PROTECTION SOLUTION AT HIGHWAY ROUTE 225 BETWEEN CHAIYAPHUM - PETCHABUN - NAKHON SAWAN, CHAIYAPHUM PROVINCE, THAILAND

### Debris Flow Barriers

#### Problem

The Department of Highways (DOH) - Chaiyaphume Bureau had sanctioned a study to identify areas that poses debris and landslide hazards to road users along the Regional Highway Route 225 located in North-Eastern Thailand. This highway is approximately 256km long and traverses through the provinces of Chaiyaphum - Petchabun - Nakhon Sawan.

A slope along KM109.390 to KM110.210 has been identified as high risk and the debris flow protection solution needs to be in place before the monsoon season approaches to safeguard the lives of road users and ensure uninterrupted highway traffic usage.

#### Solution

Various options were considered, but due to time constraints from the fast approaching monsoon, the option to use open slope debris flow barriers was the chosen solution. The construction of the debris flow barrier is fast and cheaper than other options. The debris flow barrier Maccaferri supplied is capable of resisting debris impact energy of 500 kJ and spans across 160m in length.

The debris flow barrier was put to test on 2011 when Thailand experiences one of the heaviest rainfall monsoon season ever occurred. A portion of the slope above the barrier failed thus causing massive debris flow to occur. The installed Maccaferri debris flow barriers has successfully prevented any debris from flowing into the motorway thus saving the lives of motorist and ensure uninterrupted usage of Highway Route 225.

**Client:** DOH - Chaiyaphume Bureau

**Designer / Consultant:** DOH - Chaiyaphume Bureau

**Contractor:** Kenber Geotechnic (Thailand) Co. Ltd.

**Products used (Qty.)**

|                        |                        |
|------------------------|------------------------|
| - Debris Flow Barriers | 500kJ = 160m<br>Length |
|------------------------|------------------------|

**Date of construction:** 03/2010 - 05/2010



Debris Flow Barrier During Construction



Debris Flow Barrier Construction Completed



Debris Flow Barrier After Impact