

Current speed of the Sumatra tsunami in the residential area of Banda Aceh and Sigli cities, Sumatra Island, Indonesia

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We estimated current velocity of run-up sea water of the 2004 Sumatra Tsunami in the residential area of Banda Aceh and Sigli cities by measuring the height of the water marks on walls of inundated buildings. We set seven standard level points A to G on the Iskandar Muda Street which connects the central part of Banda Aceh and Ulee Lheue Port, and measured the height of water marks of houses and buildings along the street.

The water mark on the wall of the second floor of the mosque at Ulee Lheue port shows the inundation height of the tsunami was 12.2 meters above the sea level. We estimated the current velocity was 7.0 meters/sec by measuring the difference of the water mark height on the front and the rear walls.

We obtained current velocity of 7.7 meters/sec by the water mark height difference on the inside and the outside walls at a house near the Point G, which is located about 1 kilometer from the coastline. We also obtained current speeds of 4.9, 7.7, and 1.0 at the buildings near the points E, C and a point between B and A.

At Sigli city, about 80 kilometers east of Banda Aceh, water current velocity was estimated at 3.2 to 3.8 meters/sec.