

SARI

Bendungan Pamukkulu yang terletak di bagian hulu Sungai Pappa, berlokasi di Desa Kale Komara, Kecamatan Polombangkeng Utara, Kabupaten Takalar, Provinsi Sulawesi Selatan. Dilaksanakannya pembangunan bendungan ini antara lain untuk memenuhi kebutuhan irigasi lahan 6,150 Ha, penyediaan air baku Kota Takalar 160 L/s, pengendalian banjir, konsevasi sumber daya air, pengembangan pariwisata daerah, serta sektor pengembangan perikanan air tawar. Pada tahun 2014 telah dilaksanakan penyelidikan geologi teknik sebatas area *as* bendungan dan terowongan pengelak. Oleh karena itu, peneliti melakukan penelitian secara lebih detail terkait karakteristik geologi teknik, daya dukung batuan pondasi, dan sudut pemotongan lereng yang aman pada Bendungan Pamukkulu yang terfokus pada sebaran batuan permukaan di area konstruksi bendungan dengan skala 1:10.000. Observasi lapangan dilakukan dengan melakukan pemetaan geologi teknik menggunakan aspek sebaran litologi, tingkat pelapukan, serta klasifikasi *Geological Strength Index* (GSI). serta dilakukan sampel pada batuan dan tanah di lokasi penelitian. Pada uji laboratorium, sampel dilakukan pengamatan petrografi serta dilakukan pengujian untuk mengetahui karakteristik keteknikan batuan serta tanah. Karakteristik geologi teknik daerah penelitian dipengaruhi oleh 4 aspek utama (morfologi, batuan dan tanah, airtanah, dan struktur geologi). Geomorfologi lokasi penelitian terdiri atas 3 satuan yaitu satuan dataran alluvial, satuan perbukitan struktural berlereng miring, dan satuan perbukitan berlereng agak curam. Karakteristik keteknikan batuan di lokasi penelitian terdiri atas 5 satuan geologi teknik yaitu satuan breksi basal lapuk sedang, breksi basal lapuk ringan, lava basal lapuk kuat, lava basal lapuk sedang, dan lava basal lapuk kuat. Karakteristik geologi teknik berdasarkan kualitas massa batuan GSI (*Geological Strength Index*) menunjukkan kualitas massa batuan di daerah penelitian terdiri dari batuan kualitas sangat baik, baik, sedang, dan buruk. Daya dukung batuan pondasi berkisar antara 135 T/m² hingga 600 T/m² dan sudut pemotongan lereng yang aman yaitu $\leq 65^\circ$.

Kata kunci : Bendungan Pamukkulu, *Geological Strength Index* (GSI), tingkat pelapukan karakteristik geologi teknik, daya dukung batuan pondasi, sudut pemotongan lereng yang aman

ABSTRACT

The Pamukkulu Dam is located in the upper stream of the Pappa River, located in Kale Komara Village, North Polombangkeng Sub-District, Takalar District, South Sulawesi Province. The purposes of Pamukkulu Dam construction are as follows; meet the needs of land irrigation for 6.150 hectares, pro of 160 L / s of raw water for Takalar City, flood control, conservation of water resources, regional tourism development, and the freshwater fisheries development sector. In 2014, an engineering geological investigation was carried out in the area of the dam and the circumvention tunnel. Therefore, the researchers conducted a more detailed study related to the technical geological characteristics, bearing capacity of the foundation rock, and safe cut slope at the Pamukkulu Dam which focused on the distribution of surface rock in the dam construction area within a scale of 1: 10,000. Field observations were carried out by conducting engineering geological mapping using aspects of the distribution of lithology, weathering level, and classification of Geological Strength Index (GSI), sampling of rock and soil samples at the study site. The laboratory test, petrographic samples were examined and tested to determine the characteristics of rock and soil characteristics. The geotechnical characteristics of the study area are influenced by 4 main aspects (morphology, rock and soil, groundwater, and geological structure). The geomorphology of the research location consists of 3 units, namely alluvial terrain units, structural hill units with sloping slopes, and hill units with slightly steep slopes. The rock geotechnical characteristics in the research location consisted of 5 geotechnical units, namely medium weathered basalt breccia, lightly weathered basalt breccia, strongly weathered basalt lava, medium weathered basalt lava, and strongly weathered basalt lava. Geotechnical characteristics based on the mass quality of the GSI (Geological Strength Index) show that the rock mass quality in the study area consists of very good, good, medium, and poor quality rocks. The bearing capacity of the foundation rock ranges from 135 T / m² to 600 T / m² and the safe cut slope is $\leq 65^\circ$.

Keyword : Pamukkulu Dam, Geological Strength Index (GSI), weathering level, geotechnical characteristics, allowable bearing capacity, safe cut slope