

## SARI

Sulawesi Tenggara merupakan provinsi dengan potensi marmer terbesar di Indonesia dengan sumber daya terukur sebesar 358.8 juta ton dan sumber daya hipotetik sebesar 1.3 miliar ton. Salah satu daerah potensi marmer di Sulawesi Tenggara adalah Mata Wawatu dan Sanggula. Namun belum ada penelitian rinci yang khusus meneliti tentang kondisi geologi dan karakteristik marmer yang ada di daerah Mata Wawatu dan Sanggula, Kecamatan Moramo Utara, Kabupaten Konawe Selatan. Penelitian ini bertujuan untuk mengetahui kondisi geologi, karakteristik marmer, dan rekomendasi pemanfaatannya. Geomorfologi daerah penelitian terdiri dari Satuan Dataran Aluvial, Satuan Perbukitan Filit Berlereng Sedang – Terjal Terdenudasi, Satuan Perbukitan Filit Bergelombang, dan Satuan Perbukitan Marmer Berlereng Terjal Terstruktur. Litologi penyusun daerah penelitian tersusun atas 3 satuan yaitu Satuan Marmer, Satuan Filit, dan Satuan Konglomerat. Struktur geologi yang ditemukan di daerah penelitian berupa kekar dan sesar dengan orientasi NE – SW dan arah tegasan utama relatif utara – selatan. Karakteristik marmer di daerah penelitian yaitu berwarna abu – abu dan lapukannya berwarna coklat kemerah – merahan, dengan struktur non foliasi, dengan tekstur lensa atau *augen texture*. Secara petrografi, marmer tidak memiliki foliasi, dengan tekstur berdasarkan ukuran kristal yaitu  $\leq 0.1 - 1$  mm, tekstur berdasarkan bentuk individu kristal yaitu subidioblastik dan xenoblastik, tekstur berdasarkan ketahanan terhadap metamorfisme yaitu kristaloblastik, tekstur berdasarkan bentuk mineral yaitu nematoblastik dan granuloblastik, dan tekstur khusus yang dijumpai yaitu *saccaroidal* dan *mortar texture*. Komposisi marmer tersusun atas mineral kalsit, dolomit, kuarsa, talk, hematit, dan mineral opak. Nilai sifat keteknikan marmer bervariasi, di mana nilai kuat tekan sebesar  $235.718 \text{ kg/cm}^2 - 389.338 \text{ kg/cm}^2$ , nilai ketahanan aus sebesar  $0.0414 \text{ mm/menit} - 0.0498 \text{ mm/menit}$ , dan nilai serapan air sebesar  $0.275 \% - 0.763 \%$ . Kandungan oksida utama marmer didominasi oleh CaO dengan kelimpahan  $50.44 \% - 55.90 \%$ . Secara keteknikan, marmer di daerah penelitian dapat digunakan sebagai batu hias / batu tempel. Secara geokimia, marmer bagian timur laut daerah penelitian dapat dimanfaatkan dalam industri kertas, pewarna tekstil, penyaringan gula, dan produksi semen sedangkan marmer bagian barat daya tidak dapat dimanfaatkan.

**Kata kunci:** Sulawesi Tenggara, Geologi, Karakteristik Marmer, Rekomendasi Pemanfaatan Marmer

## ABSTRACT

*Southeast Sulawesi is the province with the largest marble potential in Indonesia that has measured resources of 358.8 million tons and hypothetical resources of 1.3 billion tons. One of the marble potential areas in Southeast Sulawesi is Mata Wawatu and Sanggula but there is no detailed research that specifically examines the geological conditions and marble characteristics that exist in the area of Mata Wawatu dan Sanggula, North Moramo Regency, Konawe Selatan District. This study aims to determine the geological conditions, marble characteristics, and recommendation of marble utilization. Geomorphology of the study area consists of Alluvial Plain Unit, Denudational Hills of Phyllite with Middle – Steep Slope Unit, Wavy Hills of Phyllite, and Structural Hill of Marble with Steep Slope. The lithology of research area consists of 3 units, namely Marble Unit, Phyllite Unit, and Conglomerate Unit. The Geological Structures found in the research area are joint and strike-slip fault with the NE – SW orientation and the main force direction is relatively N – S. The marble characteristics in the study area are gray and reddish brown if weathered, non foliation, and has a lens texture or augen texture. In petrographic analysis, marble does not have foliation, with texture based on crystal size is  $\leq 0.1 - 1$  mm, texture based on crystal individual form is subidioblastic and xenoblastic, texture based on metamorphism resistance is crystalloblastic, texture based on mineral form is nematoblastic and granuloblastic, and special texture is saccaroidal and mortar texture. The marble is composed of calcite, dolomite, quartz, talc, hematite, and opaque minerals. The value of the marble engineering properties varies, where the compressive strength value is  $235,718 \text{ kg/cm}^2 - 389,338 \text{ kg/cm}^2$ , wear resistance value is  $0.0414 \text{ mm/min} - 0.0498 \text{ mm/min}$ , and the water absorption value is  $0.275\% - 0.763\%$ . The main oxide content of marble is dominated by CaO with an abundance of  $50.44\% - 55.90\%$ . Based on engineering properties, marble in the research area can be used as an ornamental stone. Geochemically, marble in the northeastern part of research area can be utilized in the paper industry, textile dye, sugar screening, and cement production while marble in the southwestern part of research area can not be utilized.*

**Keywords:** South East Sulawesi, Geology, Marble Characteristics, Recommendation of Marble Utilization.