

Geologi dan Kualitas Batulempung sebagai Bahan Baku Semen pada Tambang
Lempung Daerah Tipar Kidul dan Sekitarnya, Kecamatan Ajibarang, Kabupaten
Banyumas Jawa Tengah

Izdihar Sahda Abidin
H1C019008

SARI

Pengkajian kualitas dan kelayakan bahan baku semen perlu dilakukan guna mengetahui kelayakan bahan baku untuk digunakan dalam pembuatan semen. Pengkajian dilakukan pada Daerah Tipar Kidul dan sekitarnya, Kecamatan Ajibarang, Kabupaten Banyumas, Jawa Tengah. Aspek yang diperhatikan dalam melakukan pengkajian ini ialah kondisi geologi, senyawa kimia, dan mineral pengisi batulempung. Metode yang digunakan ialah pemetaan kondisi geologi, analisis geokimia batulempung menggunakan metode XRF serta analisis jenis mineral berdasarkan morfologi mineral pengisi batulempung dengan metode SEM. Standar kelayakan batulempung ditentukan menggunakan klasifikasi kualitas PT. Sinar Tambang Arthalestari. Dari hasil analisis XRF umumnya didapatkan kadar SiO_2 berkisar 26,83%-57,75%, Al_2O_3 berkisar 11,18%-20,23%, dan Fe_2O_3 berkisar 3,21%-8,76%. Alumina indeks digunakan untuk mengetahui batulempung yang baik dan ideal untuk bahan baku semen. Kadar alumina indeks ditentukan berdasarkan standar yang berlaku pada PT. Sinar Tambang Arthalestari. Dilihat dari kadar alumina indeks terdapat dua (2) sampel yang masuk dalam kondisi ideal untuk bahan baku semen dengan kadar 3.17%-3.22%. Hasil analisis morfologi mineral batulempung menggunakan metode SEM menunjukkan bahwa pada daerah penelitian batulempung terdapat mineral illit, kalsit, kuarsa, dan smektit. Berdasarkan data didapatkan hampir 75% wilayah studi batulempung merupakan area yang layak untuk diambil sebagai bahan baku semen berdasarkan klasifikasi PT. Sinar Tambang Arthalestari.

Katakunci : Geologi, batulempung, kimia, mineral, semen

Geology and Quality of Claystone as Cement Raw Material in Clay Quarry in Tipar Kidul and Surrounding Area, Ajibarang District, Banyumas District, Central Java

Izdihar Sahda Abidin
H1C019008

ABSTRACT

An assessment of the quality and suitability of cement raw materials needs to be carried out to determine the suitability of raw materials for use in making cement. The study was carried out in the Tipar Kidul and surrounding areas, Ajibarang District, Banyumas Regency, Central Java. The aspects to be considered in carrying out this study are the geological conditions, chemical compounds and mineral filling of the claystone. The methods used are mapping geological conditions, geochemical analysis of claystone using the XRF method and analysis of mineral types based on the morphology of the claystone filler mineral using the SEM method. Claystone suitability standards are determined using The PT. Sinar Tambang Arthalestari quality classification. From the results of XRF analysis, it is generally found that SiO_2 levels range from 26,83%-57,75%, Al_2O_3 ranges from 11,18%-20,23%, and Fe_2O_3 ranges from 3,21%-8,76%. The alumina index is used to determine which claystone is good and ideal for cement raw materials. The index alumina content is determined based on the standards applicable to PT. Sinar Tambang Arthalestari. Judging from the alumina index content, there are two (2) samples that are included in the ideal for cement raw materials with levels of 3,17% -3,22%. The results of morphological analysis of the claystone minerals using the SEM method show that in the claystone research area there are illite, calcite, quartz, and smectite minerals. Based on the data, it was found that almost 75% of the claystone study area is an area that is suitable to be taken as raw material for cement based on the PT. Sinar Tambang Arthalestari quality classification.

Keywords: *Geology, claystone, chemistry, minerals, cement*