EVALUATION OF THE SUITABILITY OF WATER AS A CONCRETE MIXTURE ACCORDING TO THE PROVISIONS FOR IMPLEMENTING CONCRETE WORK FOR ROADS AND BRIDGES (PD – T – 07 – 2005 – B) IN THE BUKIT BATU

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ABSTRACT

Water is a fundamental component of concrete mixtures that directly impacts the hydration process and concrete quality, requiring strict technical compliance to prevent compressive strength reduction. This study identifies water types in Bukit Batu District, measures mortar compressive strength, and evaluates their suitability for concrete mixtures based on Pd–T–07–2005–B standards.Using an experimental method, water samples were collected from four sources: dug wells, drilled wells, ditches, and rivers across Pangkalan Jambi, Dompas, and Sungai Pakning. Mortar specimens with identical mix proportions were tested at 3, 7, and 28 days, then compared against distilled water mortar per SNI 03–6825–2002.Results show compressive strength increases with curing age, varying by water source and location. Water from dug wells, drilled wells, and ditches in Pangkalan Jambi and Dompas is suitable for concrete mixing, achieving at least 90% of the control mortar's strength. Conversely, water in Sungai Pakning, particularly river water, fails to meet eligibility requirements.These findings demonstrate that water suitability depends heavily on source and geographical origin. Therefore, laboratory testing is mandatory prior to using local water sources for concrete mixing in road and bridge construction projects.

Keywords: *mixing water, mortar compressive strength, water feasibility, Pd–T–07–2005–B, Bukit Batu District*