

PENGARUH PENAMBAHAN *GRAVEL* TERHADAP NILAI CBR MATERIAL *CRUSHED LIMESTONE*

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ABSTRAK

Suatu jalan raya di konstruksi di atas tanah dasar (*subgrade*). Kondisi tanah dasar secara tidak langsung akan berpengaruh terhadap umur rencana dari suatu konstruksi jalan. Untuk kondisi tanah dasar yang tidak baik maka diperlukan adanya material pengganti. Hal ini dilakukan untuk meningkatkan umur rencana dari konstruksi jalan tersebut. Salah satu material yang dapat digunakan sebagai material pengganti tanah dasar adalah *limestone* (batu gamping).

Tujuan penelitian ini adalah mengevaluasi pengaruh penambahan material *crushed limestone* berukuran butir *gravel* terhadap nilai CBR material *crushed limestone* bergradasi *well graded*. Penelitian dilakukan dengan menggunakan material *crushed limestone* Gunung Putri, Jawa Barat bergradasi *well graded* dengan ukuran butir maksimum $d_{max} = 9,5\text{mm}$. Pengujian material *crushed limestone* bergradasi *well graded* diuji dengan metode *design CBR for one water content only*. Pengujian material *crushed limestone well graded* dilakukan hanya dalam kondisi kadar air *initial* (w) dan kondisi *unsoaked* (tidak terendam). Uji CBR laboratorium berdasarkan standar ASTM D 1883.

Hasil Pengujian CBR laboratorium material *crushed limestone* dengan $d_{max} = 9,5\text{mm}$, dengan penambahan material *crushed limestone* berukuran butir *gravel* akan menaikkan nilai CBR. Penambahan *crushed limestone* berukuran butir *gravel* sebesar 38,4% untuk material *crushed limestone* akan menghasilkan nilai CBR yang efektif karena menaikkan nilai CBR dari 27,54% menjadi 47,18% (kenaikkan sebesar 73,84%). Berdasarkan kurva O.J. Porter., penambahan *crushed limestone* berukuran *gravel* terhadap material uji akan merubah klasifikasi material dari semula adalah *fair to good subgrade* menjadi *very good subgrade*.

Kata Kunci: *Crushed Limestone; CBR; Gravel; Subgrade.*

GRAVEL EFFECT ON CBR VALUE OF CRUSHED LIMESTONE MATERIAL

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ABSTRACT

The pavement of road are builded on subgrade. Condition of subgrade are involved in designing age pavement of road. For subgrade which is in poor condition needed to changing the material to improve the age of pavement road. One of material for changing subgrade is limestone.

The purpose of this study is to determine the effect of adding crushed limestone which have scale of size gravel to the value of CBR on crushed limestone well graded material. The research was conducted by using crushed limestone well graded material from Gunung Putri, West Java with maximum grain size $d_{max} = 9,5\text{mm}$. Crushed limestone well graded test was conducted with design CBR for one water content only method. The test of crushed limestone well graded material was performed only under initial (w) moisture and unsoaked conditions. Laboratory CBR test based on ASTM D 1883 standard.

The result of CBR laboratory test for crushed limestone material, $d_{max} = 9,5\text{mm}$ will increase the CBR value. The addition of the CBR value continue to increase with effective condition of CBR at 38,4% gravel with the CBR value from 27,54% to 47,18% (increasing 73,84%). In O.J., Porter with addition crushed limestone material (gravel) to specimen will change the classification of material from fair to good subgrade to very good subgrade.

Key Words: *Crushed Limestone; CBR; Gravel; Subgrade.*

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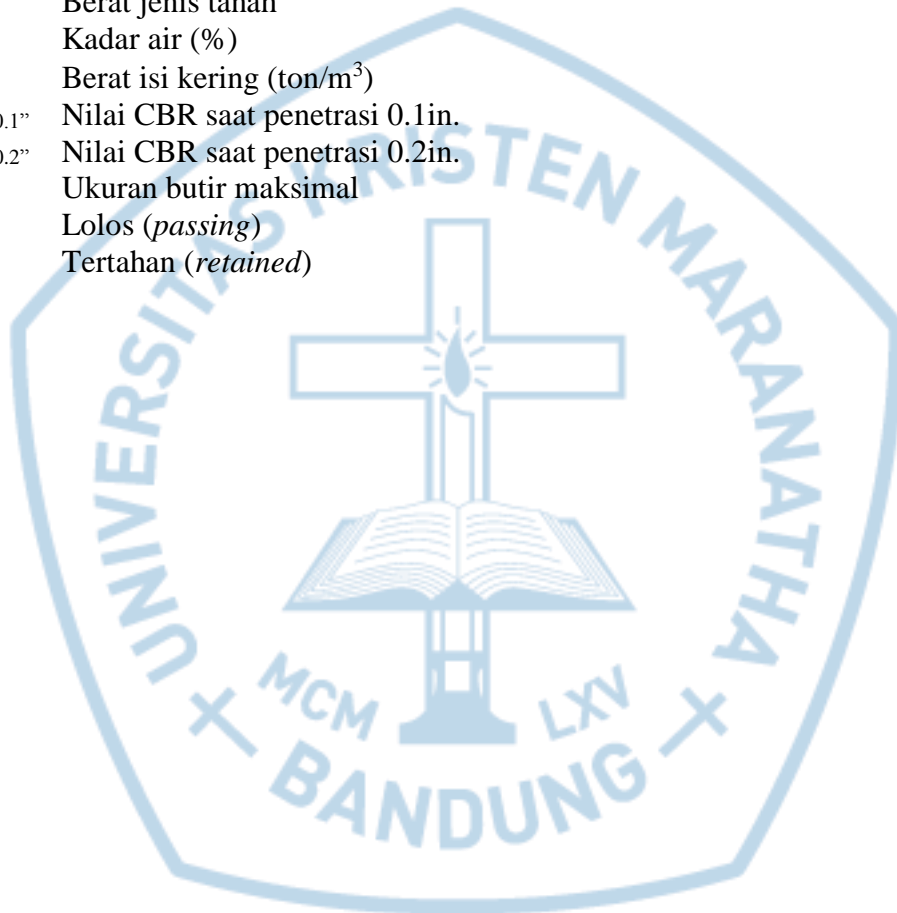


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C_u	Koefisien keseragaman (<i>coefficient of uniformity</i>)
C_c	Koefisien gradasi (<i>coefficient of gradation</i>)
D_{60}	Diameter yang bersesuaian dengan 60% lolos ayakan yang ditentukan dari kurva distribusi ukuran butiran
D_{30}	Diameter yang bersesuaian dengan 30% lolos ayakan
D_{10}	Diameter dalam kurva distribusi ukuran butiran yang bersesuaian dengan 10% yang lebih halus (lolos ayakan) di definisikan sebagai ukuran efektif
G_s	Berat jenis tanah
W	Kadar air (%)
γ_{dry}	Berat isi kering (ton/m^3)
$CBR_{0.1}$	Nilai CBR saat penetrasi 0.1in.
$CBR_{0.2}$	Nilai CBR saat penetrasi 0.2in.
d_{max}	Ukuran butir maksimal
P	Lolos (<i>passing</i>)
R	Tertahan (<i>retained</i>)



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