ABSTRAK

Ruas Jalan Bts. Garut/Tasikmalaya-Singaparna STA 85+204-STA 87+104 merupakan jalan provinsi dengan fungsi kolektor kelas II sepanjang 1,9 km. Ruas tersebut mengalami berbagai kerusakan permukaan yang dapat menurunkan kenyamanan berkendara dan mempercepat penurunan kondisi struktural perkerasan. Penelitian ini bertujuan mengevaluasi kondisi fungsional dan struktural perkerasan serta menentukan rekomendasi penanganan yang sesuai. Kondisi fungsional dievaluasi menggunakan metode *Pavement Condition Index* (PCI), sedangkan kondisi struktural dianalisis berdasarkan Pd T-05-2005-B menggunakan data sekunder hasil pengujian lendutan *Benkelman Beam*. Ruas penelitian dibagi menjadi 38 unit sampel dengan panjang masing-masing 50 m. Segmen-segmen tersebut dikelompokkan menjadi seksi penanganan berdasarkan kedekatan lokasi, kecenderungan kondisi PCI yang dominan, dan kesinambungan ruas. Hasil penelitian menunjukkan nilai PCI rata-rata sebesar 42 yang termasuk kategori *fair*. Nilai PCI terendah sebesar 2 (*failed*) terdapat pada Segmen 2 dan 9, sedangkan nilai tertinggi sebesar 100 (*excellent*) terdapat pada Segmen 8 dan 19. Tambalan sebesar 46,26% dan retak kulit buaya sebesar 35,20% merupakan jenis kerusakan dominan. Berdasarkan hasil pengelompokan, terbentuk Seksi 1 dengan PCI rata-rata 22,78 (*very poor*), Seksi 2 sebesar 56,82 (*good*), dan Seksi 3 sebesar 33,83 (*poor*). Evaluasi struktural menghasilkan faktor keseragaman lendutan masing-masing sebesar 13,16%, 13,37%, dan 9,88%, dengan kebutuhan tebal lapis tambah sebesar 7,3 cm, 6,5 cm, dan 5,2 cm. Integrasi hasil menunjukkan bahwa kondisi fungsional yang baik tidak selalu mencerminkan kapasitas struktural yang memadai. Oleh karena itu, seluruh seksi memerlukan lapis tambah dengan ketebalan berbeda, disertai perbaikan atau rekonstruksi lokal sebelum pelaksanaan lapis tambah.

Kata kunci: *Benkelman Beam*, *Pavement Condition Index, overlay*, kondisi fungsional, kondisi struktural

ABSTRACT

The Bts. Garut/Tasikmalaya-Singaparna road section (STA 85+204-STA 87+104) is a 1.9-km provincial collector road classified as Class II. The road exhibits various surface distresses, including alligator cracking, patching, and raveling, which reduce riding comfort and may accelerate structural deterioration. This study evaluates the functional and structural condition of the pavement and formulates appropriate treatment recommendations. Functional condition was assessed using the Pavement Condition Index (PCI), while structural condition was evaluated according to Pd T-05-2005-B using secondary Benkelman Beam deflection data. The road was divided into 38 sample units, each 50 m long. These segments were grouped into treatment sections based on spatial proximity, the dominant PCI-based condition, and roadway continuity. The results showed an average PCI of 42, indicating fair condition. The lowest PCI was 2 (failed), recorded in Segments 2 and 9, while the highest was 100 (excellent), recorded in Segments 8 and 19. Patching (46.26%) and alligator cracking (35.20%) were the dominant distress types. Three treatment sections were formed: Section 1 (Segments 1-9) with an average PCI of 22.78 (very poor), Section 2 (Segments 10-26) with an average PCI of 56.82 (good), and Section 3 (Segments 27-38) with an average PCI of 33.83 (poor). Structural evaluation yielded deflection uniformity factors of 13.16%, 13.37%, and 9.88%, with required overlay thicknesses of 7.3 cm, 6.5 cm, and 5.2 cm, respectively. The integrated results demonstrate that functional recommendations based on PCI do not always correspond to structural requirements. Therefore, all three sections require overlays of varying thicknesses, accompanied by localized repairs or reconstruction before overlay placement.

Keywords: *Benkelman Beam, Pavement Condition Index, overlay, functional condition, structural condition*