

DAFTAR PUSTAKA

- AASHTO (2012) 'R 46-08, Standard Practice for Designing Stone Matrix Asphalt', AASHTO. Washington DC: AASHTO. Available at: <http://www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingMaterials/TobaccoProductsScientificAdvisoryCommittee/UCM247549.pdf>.
- AASHTO (2012) 'AASHTO M325-08, Standard Specification for Stone Matrix Asphalt (SMA)'.
- Aboutalebi Esfahani, M. and Mirian, V. (2021) 'Evaluation of glass fibres, ethylene vinyl acetate and their combination on stone mastic asphalt', *Australian Journal of Civil Engineering*, 19(2), pp. 134–147.
- Ahmed, A. M., Carvajal-Munoz, J. S., & Airey, G. (2022). Fracture Characterization of Stone Mastic Asphalt (SMA) with Hydrated Lime Through the Semi-circular Bending Test Approach. In *Proceedings of the RILEM International Symposium on Bituminous Materials: ISBM Lyon 2020 1* (pp. 935-941). Springer International Publishing.
- Alifuddin, A. (2021). Pengaruh Variasi Slag Nikel Sebagai Bahan Tambah Agregat Halus pada Campuran Lapisan Aspal Beton. *Jurnal Teknik Sipil MACCA*, 6(2), 101-107.
- Aliha, M. R. M., Ziari, H., Mojaradi, B., & Sarbijan, M. J. (2020). Modes I and II stress intensity factors of semi-circular bend specimen computed for two-phase aggregate/mastic asphalt mixtures. *Theoretical and Applied Fracture Mechanics*, 106, 102437.
- Alirusi, R., St Maryam, H., & Massara, A. (2023). Studi Experimental Campuran Stone Matrix Asphalt (SMA) Dengan Penambahan Zat Aditif Polyurethane Terhadap Ketahanan Deformasi Dan Modulus Elastis. *Innovative: Journal Of Social Science Research*, 3(3), 5001-5015.
- Ameli, A., Pakshir, A. H., Babagoli, R., Norouzi, N., Nasr, D., & Davoudinezhad, S. (2020). Experimental investigation of the influence of Nano TiO₂ on rheological properties of binders and performance of stone matrix asphalt mixtures containing steel slag aggregate. *Construction and Building Materials*, 265, 120750.
- Asliah, A., Suaedi, S., Hammado, N., & Manrulu, R. H. (2020). DENTIFIKASI DAN KARAKTERSASI KANDUNGAN UNSUR DAN STRUKTUR KRISTAL SLAG NICKEL. *Applied Physics of Cokroaminoto Palopo*, 1(1), 6-11.. *Applied Physics of Cokroaminoto Palopo*, 1(1), 6-11.
- Asmawan, D. (2021). *ANALISIS PEMANFAATAN LIMBAH TIMAH (Tin Slag) SEBAGAI BAHAN CAMPURAN ASPAL AC-WC PADA PERKERASAN JALAN* (Doctoral dissertation, Universitas Islam Lamongan).
- Al Saadi, I. *et al.* (2023) 'The use of natural fibers in stone mastic asphalt mixtures: a review of the literature', *ARCHIVES OF CIVIL ENGINEERING*, LXIX(3), pp. 347–370. doi: 10.24425/ace.2023.146085.
- Alshehri, H. A. *et al.* (2023) 'Recycled polyethylene waste as binder stabilizer for SMA mix in gulf environment', *Case Studies in Construction Materials*, 18, p. e02177. doi: <https://doi.org/10.1016/j.cscm.2023.e02177>.

- Ameli, A., Babagoli, R., Norouzi, N., *et al.* (2020) 'Laboratory evaluation of the effect of coal waste ash (CWA) and rice husk ash (RHA) on performance of asphalt mastics and Stone matrix asphalt (SMA) mixture', *Construction and Building Materials*, 236, p. 117557.
- Ameli, A., Babagoli, R., Khabooshani, M., *et al.* (2020) 'Permanent deformation performance of binders and stone mastic asphalt mixtures modified by SBS/montmorillonite nanocomposite', *Construction and Building Materials*, 239, p. 117700. doi: 10.1016/j.conbuildmat.2019.117700.
- Babalghaith, A. M., Koting, S., Sulong, N. H. R., *et al.* (2020) 'Effect of palm oil clinker (POC) aggregate on the mechanical properties of stone mastic asphalt (SMA) mixtures', *Sustainability*, 12(7), p. 2716.
- Badan Pusat Statistik (2022) *Panjang Jalan Menurut Tingkat Kewenangan (km), 2019-2021*, Badan Pusat Statistik. Available at: <https://www.bps.go.id/indicator/17/50/1/panjang-jalan-menurut-tingkat-kewenangan.html>.
- Bai, X., & Wang, L. (2023). Study on mesoscopic model of low-temperature cracking of steel slag asphalt mixture based on random aggregate. *Construction and Building Materials*, 364, 129974.
- Bethary, R. T. (2020) 'Development Of Asphalt Mix Stiffness Modulus Model Using Slag Materials and Reclaimed Asphalt Pavement', *International Journal of GEOMATE*, 19(73). doi: 10.21660/2020.73.77077.
- Bethary, R. T. and Intari, D. E. (2022a) 'Penggunaan Limbah Slag Nikel Untuk Material Jalan Ramah Lingkungan', *Fondasi: Jurnal Teknik Sipil*, 11(1), p. 34. doi: 10.36055/fondasi.v0i0.14473.
- Bethary, R. T., Intari, D. E., & Asyiah, S. (2022, February). Performance of Polymer Modified Asphalt Mixture Using Gypsum Filler. In *Proceedings of the Second International Conference of Construction, Infrastructure, and Materials: ICCIM 2021, 26 July 2021, Jakarta, Indonesia* (pp. 399-409). Singapore: Springer Nature Singapore.
- Blazejowski, K. (2010). *Stone Matrix Asphalt: Theory and Practice* (1st ed.). CRC Press. <https://doi.org/10.1201/b10285>
- Blazejowski, K. (2016) *Stone Matrix Asphalt, Theory and Practice*, *Stone Matrix Asphalt*. Boca Raton: CRC Press. doi: 10.1201/b10285.
- Chen, G., & Luo, J. (2023). Prediction of Skid Resistance of Steel Slag Asphalt Mixture Based on Grey Residual GM (1, 1)-Markov Model. *Journal of Materials in Civil Engineering*, 36(1), 04023518.
- Cui, P., Ma, T., Wu, S., Xu, G., & Wang, F. (2023). Texture characteristic and its enhancement mechanism in stone mastic asphalt incorporating steel slag. *Construction and Building Materials*, 369, 130440.
- Devulapalli, L., Kothandaraman, S. and Sarang, G. (2020) 'Effect of rejuvenating agents on stone matrix asphalt mixtures incorporating RAP', *Construction and Building Materials*, 254, p. 119298. doi: <https://doi.org/10.1016/j.conbuildmat.2020.119298>.

- Devulapalli, L., Sarang, G. and Kothandaraman, S. (2022) 'Characteristics of aggregate gradation, drain down and stabilizing agents in stone matrix asphalt mixtures: A state of art review', *Journal of Traffic and Transportation Engineering (English Edition)*, 9(2), pp. 167–179. doi: 10.1016/j.jtte.2021.10.007.
- Dondi, G., Mazzotta, F., Lantieri, C., Cuppi, F., Vignali, V., & Sangiovanni, C. (2021). Use of steel slag as an alternative to aggregate and filler in road pavements. *Materials*, 14(2), 345.
- Erikasari, Y. (2020). PENGARUH PERUBAHAN VISKOSITAS ASPAL AKIBAT PENAMBAHAN VIATOP66 TERHADAP NILAI TEGANGAN TARIK (TENSILE STRENGTH) CAMPURAN HRS-WC MENGGUNAKAN UJI SEMI CIRCULAR BENDING (SCB). *Jurnal Sains dan Teknologi Tadulako*, 6(1), 48-62.
- Ferreira da Costa, L. *et al.* (2020) 'Use of Banana Fibers in SMA Mixtures', *Journal of Materials in Civil Engineering*, 32(1), pp. 1–10. doi: 10.1061/(asce)mt.1943-5533.0002994.
- Hamed, G. H., Sakanlou, F., Omari, B., & Azarhoosh, A. (2021). Laboratory investigation of the effect of ceramic fiber on stone matrix asphalt rutting performance. *Journal of Materials in Civil Engineering*, 33(1), 04020431.
- Indonesia. (2009). Undang-Undang Republik Indonesia Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup. Lembaran Negara Republik Indonesia Tahun 2009 Nomor 140, Tambahan Lembaran Negara Republik Indonesia Nomor 5059.
- Indonesia. (2020). Undang-Undang Republik Indonesia Nomor 11 Tahun 2020 tentang Cipta Kerja. Lembaran Negara Republik Indonesia Tahun 2020 Nomor 245, Tambahan Lembaran Negara Republik Indonesia Nomor 6573.
- Indonesia. (2021). Peraturan Pemerintah Republik Indonesia Nomor 22 Tahun 2021 tentang Penyelenggaraan Perlindungan dan Pengelolaan Lingkungan Hidup. Lembaran Negara Republik Indonesia Tahun 2021 Nomor 32, Tambahan Lembaran Negara Republik Indonesia Nomor 6634.
- Kementerian Lingkungan Hidup dan Kehutanan Republik Indonesia. (2021). Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia Nomor 19 Tahun 2021 tentang Tata Cara Pengelolaan Limbah Nonbahan Berbahaya dan Beracun. Berita Negara Republik Indonesia Tahun 2021 Nomor 1214.
- Jasni, N. E. *et al.* (2020) 'Mechanical performance of stone mastic asphalt incorporating steel fiber', in *IOP conference series: materials science and engineering*. IOP Publishing, p. 12026.
- Jusmidah *et al.* (2021) 'Value Of Indirect Tensile Strength And Deformation On Ac-Bc Asphalt Mixture Using Nickel Slag As A Fine Aggregate', pp. 149–155. Available at: www.ijstr.org.
- Kar, D., Giri, J. P., Panda, M., & Chattaraj, U. (2021). Investigations on stone matrix asphalt mixes containing recycled concrete aggregate treated with nanosilica. *Journal of Materials in Civil Engineering*, 33(9), 04021228.

- Kurnia, A. Y. *et al.* (2020) 'Characteristics Comparison of Refinery Asphalt, Rubberized Asphalt, and Buton Asphalt in Stone Matrix Asphalt Pavement with Marshall and Cantabro Method', in *Journal of Physics: Conference Series*. IOP Publishing, p. 12125.
- Li, C., Xie, X., Wang, L., Liu, Y., Liu, Z., & Li, J. (2023). Analysis of Low-Temperature Rheological and Mechanical Properties of Steel Slag Asphalt Mixture Based on Direct Tensile Test. *Journal of Materials in Civil Engineering*, 35(3), 04022463.
- Luan, Y., Zhang, W., Zhao, Y., Pan, Z., Niu, Z., Zeng, K., ... & Mohammad, L. N. (2022). Mechanical property evaluation for steel slag in asphalt mixture with different skeleton structures using modified Marshall mix design methodology. *Journal of Materials in Civil Engineering*, 34(1), 04021382.
- Li, J. *et al.* (2019) 'Life cycle assessment and life cycle cost analysis of recycled solid waste materials in highway pavement: A review', *Journal of Cleaner Production*, 233, pp. 1182–1206.
- Li, J. and Tang, F. (2023) 'Effects of two metal nanoparticles on performance properties of asphalt binder and stone matrix asphalt mixtures containing waste high density polyethelene', *Construction and Building Materials*, 401, p. 132787. doi: <https://doi.org/10.1016/j.conbuildmat.2023.132787>.
- Liu, J. *et al.* (2023) 'Towards the sustainable utilization of steel slag in asphalt pavements: A case study of moisture resistance and life cycle assessment', *Case Studies in Construction Materials*, 18, p. e01722.
- Liu, W. *et al.* (2020) 'The interfacial adhesion performance and mechanism of a modified asphalt–steel slag aggregate', *Materials*, 13(5), p. 1180.
- Maharani, A. S. A. and Hilda B., A. (2022) *Tak Hanya Sirkuit Mandalika, Tiga Ruas Jalan Ini Juga Gunakan Aspal Berteknologi SMA*, www.kompas.com. Available at: <https://www.kompas.com/properti/read/2022/03/24/160000821/tak-hanya-sirkuit-mandalika-tiga-ruas-jalan-ini-juga-gunakan-aspal?page=all>.
- Motevalizadeh, S. M., Sedghi, R., & Rooholamini, H. (2020). Fracture properties of asphalt mixtures containing electric arc furnace slag at low and intermediate temperatures. *Construction and Building Materials*, 240, 117965.
- Molenaar, A. A. A., Scarpas, A., Liu, X., & Erkens, S. M. J. G. (2002). Semi-circular bending test; simple but useful?. Association of Asphalt Paving Technologists. *Journal*, 71, 794-815.
- Miranda, H. M. B. *et al.* (2020) 'Influence of laboratory aggregate compaction method on the particle packing of stone mastic asphalt', *Construction and Building Materials*, 259, p. 119699. doi: <https://doi.org/10.1016/j.conbuildmat.2020.119699>.
- Mojabi, S. A., Abdi kordani, A. and Mirbaha, B. (2020) 'Laboratory investigation of stone matrix asphalt modified with SBS polymer and C25 fiber in using the semi-circular bend geometry (SCB) and moisture susceptibility', *Construction and Building Materials*, 261, p. 120511. doi: [10.1016/j.conbuildmat.2020.120511](https://doi.org/10.1016/j.conbuildmat.2020.120511).

- Moura, B. L. R. de et al. (2020) 'Adhesion between steel slag aggregates and bituminous binder based on surface characteristics and mixture moisture resistance', *Construction and Building Materials*, 264, p. 120685. doi: <https://doi.org/10.1016/j.conbuildmat.2020.120685>.
- NAPA, N. A. P. A. (2002) 'SMA Guideline QIS122- Designing and constructing SMA Mixtures'. Maryland, p. 99.
- Norouzi, N., Ameli, A. and Babagoli, R. (2021) 'Investigation of fatigue behaviour of warm modified binders and warm-stone matrix asphalt (WSMA) mixtures through binder and mixture tests', *International Journal of Pavement Engineering*, 22(8), pp. 1042–1051.
- Paul, D., Suresh, M., & Pal, M. (2021). Utilization of fly ash and glass powder as fillers in steel slag asphalt mixtures. *Case Studies in Construction Materials*, 15, e00672.
- Priambodo, B. J. (2021). *PENGARUH SUBSTITUSI STEEL SLAG DENGAN PENAMBAHAN SERAT SELULOSA ALAMI DEDAK PADI PADA CAMPURAN ASPAL STONE MATRIX ASPHALT (SMA)* (Doctoral dissertation, Universitas Atma Jaya Yogyakarta).
- Pekerjaan Umum dan Perumahan Rakyat, K. (2020) 'Spesifikasi Umum 2018 untuk Jalan dan Jembatan Revisi 2'. Kementerian Pekerjaan Umum dan Perumahan Rakyat. Available at: https://simk.bpjrt.pu.go.id/file_uploads/ketentuan/spesifikasi-umum-bina-marga-2018-untuk-pekerjaan-konstruksi-jalan-dan-jembatan-revisi-2-no-161sedb2020_pdf_22-02-2022_06-46-35.pdf.
- Peraturan Pemerintah (PP) Nomor 22 Tahun 2021 tentang Penyelenggaraan Perlindungan dan Pengelolaan Lingkungan Hidup <https://peraturan.bpk.go.id/Details/161852/pp-no-22-tahun-2021>
- Pouranian, M. R., Imaninasab, R. and Shishehbor, M. (2020) 'The effect of temperature and stress level on the rutting performance of modified stone matrix asphalt', *Road Materials and Pavement Design*, 21(5), pp. 1386–1398.
- Said, L. B. (2021) 'Value Of Indirect Tensile Strength And Deformation On Ac-Bc Asphalt Mixture Using Nickel Slag As A Fine Aggregate', *International Journal of Scientific & Technology Research*, 10(4), pp. 149–155.
- Santanu, P. et al. (2023) 'Mechanical Properties of Open-Graded Asphalt Friction Course Mixtures with Basic Oxygen Furnace Steel Slag as Coarse Aggregates', *Journal of Materials in Civil Engineering*, 35(4), p. 4023036. doi: 10.1061/(ASCE)MT.1943-5533.0004696.
- Shen, A., Wu, H., Yang, X., He, Z., & Meng, J. (2020). Effect of different fibers on pavement performance of asphalt mixture containing steel slag. *Journal of Materials in Civil Engineering*, 32(11), 04020333.
- Shiha, M., El-Badawy, S., & Gabr, A. (2020). Modeling and performance evaluation of asphalt mixtures and aggregate bases containing steel slag. *Construction and Building Materials*, 248, 118710.
- Supit, F. P., & Mangontan, R. (2021). Pemanfaatan Limbah Nikel Sorowako Dalam Campuran Stone Matrix Asphalt Kasar. *Paulus Civil Engineering*

Journal, 3(1), 63-69.

- Serin, S., Emiroğlu, M. and Gönül, V. E. (2021a) 'Investigation of the fracture energy of hot mixtures asphalt incorporating metallic wastes via semi-circular bending test', *Construction and Building Materials*, 300. doi: 10.1016/j.conbuildmat.2021.124006.
- Shiva Kumar, G. and Ravi Shankar, A. U. (2020) 'Evaluation of workability and mechanical properties of stone matrix asphalt mixtures made with and without stabilizing additives', *Transportation Infrastructure Geotechnology*, 7, pp. 191–204.
- Susanto, I., Irawan, R. R. and Hamdani, D. (2020) 'Nickel slag waste utilization for road pavement material as strategy to reduce environmental pollution', in *E3S Web of Conferences*. EDP Sciences, p. 5003.
- Wang, R. *et al.* (2023) 'Potential contribution of steel slag fillers to asphalt mastic in terms of microwave heating efficiency, electromagnetic mechanisms and fatigue durability', *International Journal of Pavement Engineering*, 24(1), p. 2240471. doi: 10.1080/10298436.2023.2240471.
- Wu, B. *et al.* (2021) 'Evaluation of the long-term performances of sma-13 containing different fibers', *Applied Sciences (Switzerland)*, 11(11). doi: 10.3390/app11115145.
- Wu, H., Shen, A., Chen, X., He, Z., Ren, G., & Yao, C. (2022). Effects and reaction mechanism of acid rain on the pavement performance of asphalt mixtures with steel slag aggregates. *Journal of Materials in Civil Engineering*, 34(10), 04022272.
- Yang, C., Wu, S., Cui, P., Amirkhanian, S., Zhao, Z., Wang, F., ... & Xie, J. (2022). Performance characterization and enhancement mechanism of recycled asphalt mixtures involving high RAP content and steel slag. *Journal of Cleaner Production*, 336, 130484.
- Zhang, T., Wu, J., Hong, R., Ye, S., & Jin, A. (2022). Research on low-temperature performance of steel slag/polyester fiber permeable asphalt mixture. *Construction and Building Materials*, 334, 127214.
- Zhao, X., Sheng, Y., Lv, H., Jia, H., Liu, Q., Ji, X., ... & Meng, J. (2022). Laboratory investigation on road performances of asphalt mixtures using steel slag and granite as aggregate. *Construction and Building Materials*, 315, 125655.
- Zhou, X., Zhao, G., Tighe, S., Chen, M., Wu, S., Adhikari, S., & Gao, Y. (2020). Quantitative comparison of surface and interface adhesive properties of fine aggregate asphalt mixtures composed of basalt, steel slag, and andesite. *Construction and Building Materials*, 246, 118507.
- Zhao, Z. *et al.* (2023) 'Road performance, VOCs emission and economic benefit evaluation of asphalt mixture by incorporating steel slag and SBS/CR composite modified asphalt', *Case Studies in Construction Materials*, 18, p. e01929.