DAFTAR PUSTAKA

Aghayan, I., Khafajeh, R. and Shamsaei, M. (2021) 'Life cycle assessment, mechanical properties, and durability of roller compacted concrete pavement containing recycled waste materials', *International Journal of Pavement Research and Technology*, 14(5), pp. 595–606. Available at: https://doi.org/10.1007/s42947-020-0217-7.

Arabyarmohammadi, H., Sharbatdar, M.K. and Naderpour, H. (2023) 'Experimental Investigation of Mix Proportions Effects on Roller-Compacted Concrete Properties Using Response Surface Methodology', *International Journal of Pavement Research and Technology*, 16(4), pp. 1021–1046. Available at: https://doi.org/10.1007/s42947-022-00177-8.

ASTM C138/C138M 17a (2013) 'Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric)', *ASTM International*, i, pp. 23–26. Available at: https://doi.org/10.1520/C0138.

ASTM C642 - 97 (1997) 'Standard Test Method for Density, Absorption, and Voids in Hardened Concrete', *ASTM International*, (March), pp. 1–3.

ASTM C71 (no date) 'COPYRIGHT Licensed by American Society for Testing and Materials Information Handling Services'.

Cachim, P.B. (2009) 'Mechanical properties of brick aggregate concrete', *Construction and Building Materials*, 23(3), pp. 1292–1297. Available at: https://doi.org/10.1016/j.conbuildmat.2008.07.023.

Choucha, S. *et al.* (2018) 'Correlation between compressive strength and other properties of engineered cementitious composites with high-volume natural pozzolana', *Asian Journal of Civil Engineering*, 19(5), pp. 639–646. Available at: https://doi.org/10.1007/s42107-018-0050-3.

Debieb, F. and Kenai, S. (2008) 'The use of coarse and fine crushed bricks as aggregate in concrete', *Construction and Building Materials*, 22(5), pp. 886–893. Available at: https://doi.org/10.1016/j.conbuildmat.2006.12.013.

Fang, H., Smith, J.D. and Peaslee, K.D. (1999) 'Study of spent refractory waste recycling from metal manufacturers in Missouri', *Resources, Conservation and Recycling*, 25(2), pp. 111–124. Available at: https://doi.org/10.1016/S0921-3449(98)00059-7.

Fomenko, S. *et al.* (2022) 'Production of Refractory Bricks through Combustion Synthesis from Metallurgical Wastes and the Thermo-Physical Properties of the Products', *Sustainability (Switzerland)*, 14(18). Available at: https://doi.org/10.3390/su141811439.

Ghosh, S. and Samanta, A.K. (2023) 'Utilization of recycled refractory brick as fine aggregate on various properties of sustainable concrete', *Materials Today: Proceedings* [Preprint], (xxxx). Available at: https://doi.org/10.1016/j.matpr.2023.03.712.

González, J.S. *et al.* (2017) 'Influence of recycled brick aggregates on properties of structural concrete for manufacturing precast prestressed beams', *Construction and Building Materials*, 149, pp. 507–514. Available at: https://doi.org/10.1016/j.conbuildmat.2017.05.147.

Goyal, R.K. *et al.* (2021) 'Optimum utilization of ceramic tile waste for enhancing concrete properties', *Materials Today: Proceedings*, 49, pp. 1769–1775. Available at: https://doi.org/10.1016/j.matpr.2021.08.011.

Hachemi, S., Khattab, M. and Benzetta, H. (2022) 'The effects of recycled brick and water/cement ratios on the physical and mechanical performance of recycled aggregates concrete', *Innovative Infrastructure Solutions*, 7(4). Available at: https://doi.org/10.1007/s41062-022-00868-y.

Hasan, A., Kibria, M.G. and Mahmud Hasan, F.M. (2019) 'Effects of incorporating recycled brick and stone aggregate as replacement of natural stone aggregate in concrete', *International Journal of Engineering and Technology Innovation*, 9(1), pp. 38–48.

Hchemi, S., Khattab, M. and Benzetta, H. (2022) 'The effects of recycled brick and water/cement ratios on the physical and mechanical performance of recycled aggregates concrete', *Innovative Infrastructure Solutions*, 7(4), pp. 1–14. Available at: https://doi.org/10.1007/s41062-022-00868-y.

Horckmans, L. *et al.* (2019) 'Recycling of refractory bricks used in basic steelmaking: A review', *Resources, Conservation and Recycling*, 140(September 2018), pp. 297–304. Available at: https://doi.org/10.1016/j.resconrec.2018.09.025.

International Atomic Energy Agency (2002) 'Guidebook on non-destructive testing

of concrete structures', *Industrial Applications and Chemistry Section, IAEA*, 17(17), p. 231. Available at: http://200.10.161.33/cirsoc/pdf/ensayos/tcs-17_web.pdf.

Kavas, T., Karasu, B. and Arslan, O. (2006) 'Utilization of refractory brick wastes in concrete production as aggregates', *2006 TMS Fall Extraction and Processing Division: Sohn International Symposium*, 5(January), pp. 479–483.

Khatab, M., Hachemi, S. and Jouni, M. al (2021) 'The use of recycled aggregate from waste refractory brick for the future of sustainable concrete', *Insectes Sociaux*, 1(1), pp. 255–266.

Khattab, M. and Hachemi, S. (2020) 'Performance of concrete made with recycled coarse aggregate from waste refractory brick', *Algerian Journal of Engineering Architecture and Urbanism*, 4.

Khattab, M. and Hachemi, S. (2021) 'Performance of recycled aggregate concrete made with waste refractory brick', *International Journal of Engineering Research in Africa*, 57(July), pp. 99–113. Available at: https://doi.org/10.4028/www.scientific.net/JERA.57.99.

Khattab, M., Hachemi, S. and Al Ajlouni, M.F. (2021) 'Evaluating the physical and mechanical properties of concrete prepared with recycled refractory brick aggregates after elevated temperatures' exposure', *Construction and Building Materials*, 311. Available at: https://doi.org/10.1016/j.conbuildmat.2021.125351.

Khattab, Mohammed, Hachemi, S. and Al Ajlouni, M.F. (2021) 'Recycled refractory brick as aggregate for eco-friendly concrete production', *Journal of Advanced Sciences and Engineering Technologies*, 4(1), pp. 32–49. Available at: https://doi.org/10.32441/jaset.04.01.04.

Khattab, M., Hachemi, S. and Al-jouni, M.F. (2021) 'The use of recycled aggregate from waste refractory brick for the future of sustainable concrete', *Insectes Sociaux*, 1(1), pp. 255–266.

Li, B. *et al.* (2023) 'Compressive and flexural behavior of alkali-activated slag-based concrete: Effect of recycled aggregate content', *Journal of Building Engineering*, 67(November 2022), p. 105993. Available at:

https://doi.org/10.1016/j.jobe.2023.105993.

Liu, X. *et al.* (2021) 'Effect of brick waste content on mechanical properties of mixed recycled concrete', *Construction and Building Materials*, 292, p. 123320. Available at: https://doi.org/10.1016/j.conbuildmat.2021.123320.

Mezzal, S.K., Al-Azzawi, Z. and Najim, K.B. (2021) 'Effect of discarded steel fibers on impact resistance, flexural toughness and fracture energy of high-strength self-compacting concrete exposed to elevated temperatures', *Fire Safety Journal*, 121(June 2020), p. 103271. Available at: https://doi.org/10.1016/j.firesaf.2020.103271.

Mousavimehr, M. and Nematzadeh, M. (2020) 'Post-heating flexural behavior and durability of hybrid PET–Rubber aggregate concrete', *Construction and Building Materials*, 265, p. 120359. Available at: https://doi.org/10.1016/j.conbuildmat.2020.120359.

Nawi, E.G. (1998) 'Beton Bertulang Suatu Pendekatan Dasar'.

Nepomuceno, M.C.S., Isidoro, R.A.S. and Catarino, J.P.G. (2018) 'Mechanical performance evaluation of concrete made with recycled ceramic coarse aggregates from industrial brick waste', *Construction and Building Materials*, 165, pp. 284–294. Available at: https://doi.org/10.1016/j.conbuildmat.2018.01.052.

Orouji, M., Zahrai, S.M. and Najaf, E. (2021) 'Effect of glass powder & polypropylene fibers on compressive and flexural strengths, toughness and ductility of concrete: An environmental approach', *Structures*, 33(July), pp. 4616–4628. Available at: https://doi.org/10.1016/j.istruc.2021.07.048.

Pd T-14-2003 (2003) 'Perencanaan Perkerasan Jalan Beton Semen (Pd T-14-2003)', *Book*, p. 51.

Ramanenka, D. *et al.* (2017) 'Characterization of high-alumina refractory bricks and modelling of hot rotary kiln behaviour', *Engineering Failure Analysis*, 79(April), pp. 852–864. Available at: https://doi.org/10.1016/j.engfailanal.2017.04.038.

Sheen, Y.N. *et al.* (2013) 'Assessment on the engineering properties of ready-mixed concrete using recycled aggregates', *Construction and Building Materials*, 45, pp. 298–305. Available at:

https://doi.org/10.1016/j.conbuildmat.2013.03.072.

SKH.1.5.24 (2023) ‘Perkerasan Beton Semen Untuk Lalu Lintas Rendah’, 2013(021), pp. 1–266.

SNI 1969 (2016) *Metode uji berat jenis dan penyerapan air agregat kasar*. Jakarta: Badan Standarisasi Nasional Republik Indonesia.

SNI 1970 (2008) *Cara uji berat jenis dan penyerapan air agregat halus*. Jakarta: Badan Standarisasi Nasional Republik Indonesia.

SNI 1971 (2011) *Cara uji kadar air total agregat dengan pengeringan*. jA: Badan Standarisasi Nasional Republik Indonesia.

SNI 1972 (2008) ‘Cara Uji Slump Beton’, *Badan Standar Nasional*, pp. 1–5.

SNI 1974 (2011) ‘Cara Uji Kuat Tekan Beton dengan Benda Uji Silinder’, *Badan Standardisasi Nasional Indonesia*, p. 20.

SNI 2417 (2008) *Cara uji keausan agregat dengan mesin abrasi Los Angeles*. Jakarta: Badan Standarisasi Nasional Republik Indonesia.

SNI 2847 (2019) ‘Persyaratan Beton Struktural untuk Bangunan Gedung’, *Sni 2847*, (8), p. 720.

SNI 4431 (2011) ‘Cara uji kuat lentur kuat lentur beton normal dengan dua dengan dua titik pembebanan’. Available at: www.bsn.go.id.

SNI 7064 (2014) ‘Semen Portland Komposit’, *Badan Standardisasi Nasional*, pp. 1–128.

SNI ASTM C136 (2012) ‘Metode uji untuk analisis saringan agregat halus dan agregat kasar’, *Sni Astm C136:2012*, pp. 1–24.

SNI ASTM C597 (2012) *Standar Nasional Indonesia Metode uji kecepatan rambat gelombang melalui beton*. Available at: www.bsn.go.id.

Stjernberg, J. *et al.* (2012) ‘Extended studies of degradation mechanisms in the refractory lining of a rotary kiln for iron ore pellet production’, *Journal of the European Ceramic Society*, 32(8), pp. 1519–1528. Available at: https://doi.org/10.1016/j.jeurceramsoc.2012.01.012.

Stroeven, P. and Stroeven, M. (1999) ‘Assessment of packing characteristics by computer simulation’, *Cement and Concrete Research*, 29(8), pp. 1201–1206. Available at: https://doi.org/10.1016/S0008-8846(99)00020-4.

Sun, Q. *et al.* (2024) ‘Exploring the binding potential of magnesium oxysulfate

cement with multi-source solid wastes', *Construction and Building Materials*, 411, pp. 1–16. Available at: https://doi.org/10.1016/j.conbuildmat.2023.134649.

Wang, Z., Suo, T. and Manes, A. (2021) 'Effect of chemical strengthening residual stress on the flexural performance and fracture behavior of aluminosilicate glass', *Engineering Fracture Mechanics*, 258(November), p. 108104. Available at: https://doi.org/10.1016/j.engfracmech.2021.108104.

Xiao, J., Fan, Y. and Tawana, M.M. (2013) 'Residual compressive and flexural strength of a recycled aggregate concrete following elevated temperatures', *Structural Concrete*, 14(2), pp. 168–175. Available at: https://doi.org/10.1002/suco.201200037.

Yang, L. *et al.* (2024) 'Mesoscopic discrete modeling of compression and fracture behavior of concrete: Effects of aggregate size distribution and interface transition zone', *Cement and Concrete Composites*, 147(December 2023), p. 105411. Available at: https://doi.org/10.1016/j.cemconcomp.2023.105411.

Zeghad, M. *et al.* (2017) 'Reuse of refractory brick wastes (RBW) as a supplementary cementitious material in a concrete', *Periodica Polytechnica Civil Engineering*, 61(1), pp. 75–80. Available at: https://doi.org/10.3311/PPci.8194.

Zhu, Y. *et al.* (2014) 'Measurement and correlation of ductility and compressive strength for engineered cementitious composites (ECC) produced by binary and ternary systems of binder materials: Fly ash, slag, silica fume and cement', *Construction and Building Materials*, 68, pp. 192–198. Available at: https://doi.org/10.1016/j.conbuildmat.2014.06.080.

LAMPIRAN

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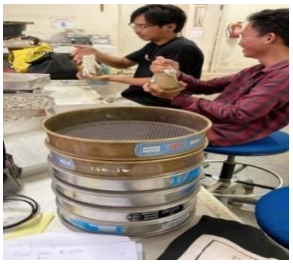
Persiapan material	   
Pengujian karakteristik material	     

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Pengujian karakteristik material	  
Penimbangan material yang akan digunakan (Air, semen, agregat kasar (batu pecah dan limbah batu bata tahan api), agregat halus)	 
Pencampuran material menggunakan *mixer* berkapasitas 75 liter. 1. Pertama, agregat limbah batu bata tahan api, batu pecah, pasir dan semen dimasukkan ke dalam mixer dan dicampur selama 60 detik.	 

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2. Selanjutnya, air ditambahkan secara bertahap ke dalam mixer, dan pencampuran dilanjutkan selama 120 detik. 3. Kemudian, campuran beton diaduk secara manual agar bahan – bahan yang menempel pada bagian bawah dan dinding mixer tercampur rata. 4. Pencampuran menggunakan mixer dilanjutkan selama 60 detik hingga diperoleh kombinasi campuran beton segar yang merata.	  
Pengujian slump beton dengan target nilai desain slump yaitu 20±2 cm	
Memasukkan campuran ke ke dalam cetakan silinder besi berdiameter 100 mm dan tinggi 200 mm, lalu dipadatkan selama 60 detik menggunakan mesin vibrator.	 

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Memasukkan campuran ke dalam cetakan silinder besi berdiameter 100 mm dan tinggi 200 mm, lalu dipadatkan selama 60 detik menggunakan mesin vibrator.	
Proses perawatan (*curing*) benda uji beton semua variasi di *curing* menggunakan air pada suhu 20^{o}C selama 7 dan 28 hari.	
Pengujian Kuat Lentur Beton	

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Pengujian Kuat Tekan Beton	
Pengujian *Ultrasonic pulse velocity* (UPV)	
Pengujian densitas	

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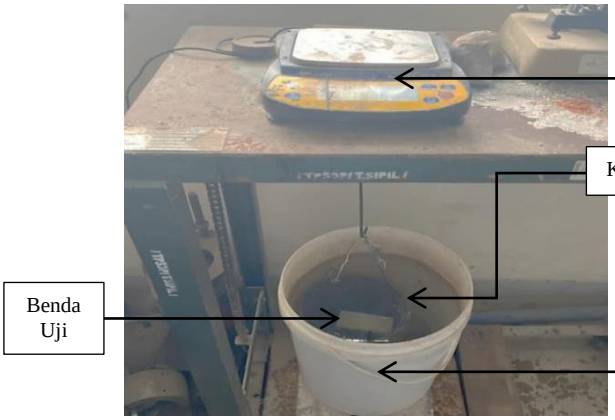
Pengujian Porositas Beton	
Hasil beton yang telah diuji