

DAFTAR PUSTAKA

- ABAQUS, Dassault Systems Simulia, ABAQUS, Providence, RI, 2019.
- Alami, F. 2010. Perkuatan Lentur Balok Beton Bertulang dengan Glass Fiber Reinforced Polymer (GFRP). Seminar dan Pameran Haki. <https://www.researchgate.net/publication/349004392>
- Alami, F & Widyawati, R. 2012. Studi eksperimental perkuatan geser balok beton bertulang dengan GFRP (*Glass fiber reinforced polymer*). *Jurnal Rekayasa* 14 : : 1-18. <https://journal.eng.unila.ac.id/index.php/jrsdd/article/viewFile/1100/pdf>
- Alnatit, N. M. E. 2011. Computational study on shear strengthening of RC continuous beams using CFRP sheet. Master Thesis, University Tun Hussein Onn Malaysia (UTHM).
- Aprisandi, D., Hariyanto, B., & Titi Siti Masturoh, T.S. 2021. Perencanaan biaya dan waktu terhadap perkuatan struktur bangunan bertingkat dengan FRP (*fiber reinforced polymer*). *JOSCE: Journal of Sustainable Civil Engineering*. 3(02): 1-12. DOI: <https://doi.org/10.47080/josce.v3i02.1413>
- ASTM C.33 – 03. 2002. *Standard Spesification for Concrete Aggregates*. Annual Books of ASTM Standards. USA.
- ASTM International. 2002. Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials ASTM D3039 /D3039M.
- Asvitha Valli S, Ravi Kumar M S. 2023. Review on the mechanism and mitigation of cracks in concrete. *Applications in Engineering Science*. Volume 16, 100154, ISSN 2666-4968, <https://doi.org/10.1016/j.apples.2023.100154>
- Arezoumandi, M. 2015. Effect of Recycled Concrete Aggregate Replacement Level on Shear Strength of Reinforced Concrete Beams. <https://www.researchgate.net/publication/282424738>
- Askar, M., Al-Kamaki, Y., Ferhadi, R., & Majeed, H. 2023. Cracks in Concrete Structures Causes And Treatments: A Review. *The Journal of The University of Duhok*, 26(2): 148-165
- Ayumni, Y. L. E. 2021. *Pengaruh Penggunaan Carbon Fiber Reinforce Polymer (CFRP) Sebagai Bahan Pengganti Baja Tulangan Terhadap Perilaku Keruntuhan Balok Beton Bertulang*. Skripsi. UII
- Dassault Systemes. 2014. *Abaqus User's Manual*. RI USA: Dassault Systemes Dassault System Corp.
- Deng, Z., Zhong, X., Liu, B., & Wen, K. 2022. Study on flexural behavior of coral concrete beams reinforced with CFRP bars. *Structures*, 39(2021), 378–386.



- Djamiluddin, R., Irmawati, R., & Didipu, L, N. 2014. Pengaruh Lapisan Hybrid Serat Karbon dan Serat Gelas Terhadap Kapasitas Lentur Balok Beton Bertulang. *Jurnal Teknik Sipil*. Universitas Hasanuddin. Makassar.
- Demir, A., Caglar, N., & Ozturk, H., 2019. Parameters affecting diagonal cracking behavior of reinforced concrete deep beams. *Engineering Structures* 184, 217–231. <https://doi.org/10.1016/j.engstruct.2019.01.090>
- Djamiluddin, R., Akkas, A. M., & Eko, A. 2013. Application Of GFRP Sheet For Strengthening of Yielded Reinforced Concrete Beams. Makassar: Universitas Hasanuddin.
- Dovzhenko, O.O., Pohribnyi, V.V., & Zyma, O.E. 2020. To the Shear Strength of Concrete. International science and technology conference "FarEastCon-2019". *IOP Conf. Series: Materials Science and Engineering* 753 : 052021. IOP Publishing. doi:10.1088/1757-899X/753/5/052021
- Du, B., Chen, L., Zhou, H., Guo, Y., Zhang, J., Peng, S., Liu, H., Li, W., & Fang, D. 2017. Fabrication and Flatwise Compression Property of Glass Fiber Reinforced Polypropylene Corrugated Sandwich Panel. *International Journal of Applied Mechanics*. 9 : 1750110. <https://api.semanticscholar.org/CorpusID:126008582>
- Fallah, S., & Nematzadeh, M. 2017. Mechanical properties and durability of highstrength concrete containing macro-polymeric and polypropylene fibers with nano-silica and silica fume, *Construction and Building Material*. 132: 170–187.
- Handayani, T & Irawadi, Y. 2018. Analisis Lendutan Balok Beton Secara Eksperimental dan Metode Elemen Hingga Sesuai SNI 2847 : 2013. *Majalah ilmiah Pengkajian Industri M.I.P.I.* 12(3):127-134. P-ISSN 1410-3680 / E-ISSN 2541-1233.
- Hibbitt K, Karlsson B, & Sorensen P.1988. ABAQUS: User's Manual: Hibbitt, Karlsson & Sorensen.
- Hillerborg, A., Modéer, M., & Petersson, P. E. 1976. Analysis of crack formation and crack growth in concrete by means of fracture mechanics and finite elements. *Journal of Cement and Concrete Research*.
- Hutaajulu, L.S.N. 2023. Analisis Tegangan Lentur pada Balok Beton Bertulang Dengan Beban Terpusat. *IJCEE* 9(2):38-43. ISSN 2598-2931
- Isneini, M., Alami, F., Surahman, R. 2020. Studi numerik pada balok beton bertulang dengan perkuatan hybrid menggunakan glass fiber reinforced polymer (GFRP) dan wiremesh. <https://www.researchgate.net/publication/348710123> Studi Numerik pada Balok Beton Bertulang dengan Perkuatan Hybrid Menggunakan GFRP Glass Fiber Reinforced Polymer dan Wiremesh
- Kheir, J., Klausen, A., Hammer, T.A., De Meyst, L., Hilloulin, B., Van Tittelboom, K., Loukili, A., & De Belie, N., 2021. Early age autogenous shrinkage cracking risk of an ultra-high

- performance concrete (UHPC) wall: Modelling and experimental results. *Engineering Fracture Mechanics* 257, 108024. <https://doi.org/10.1016/j.engfracmech.2021.108024>.
- Luastika, G, Lingga, A., & Lestyowati, Y., 2019. Perkuatan lentur balok beton bertulang dengan glass fiber reinforced polymer. <https://jurnal.untan.ac.id/index.php/JMHMS/article/view/35569>
- MacCormac, J. 2001. *Desain Beton Bertulang* Edisi Kelima Jilid 1 dan 2. Jakarta : Erlangga.
- Malik, P & Mishra, S. ABAQUS – An Introduction to Finite Element Software. <https://ijcrt.org/papers/IJCRT2110391.pdf>
- Marouskova, A. 2016. Inelastic material models for numerical analysis of unreinforced compressed masonry columns. *Key Engineering Material*. 677 : 197–202.
- Mindess, S., Francis Y., & Darwin, D. 2003. *Concrete* 2nd Edition, New Jersey: Prentice Hall. 644p. ISBN 0130646326, 9780130646323
- Morampudi, P., Namala, K.K., Gajjela, Y.K., Barath, M., & Prudhvi, G. 2021. Review on glass fiber reinforced polymer composites, *Materials Today: Proceedings*, 43(1): 314-319, ISSN 2214-7853, <https://doi.org/10.1016/j.matpr.2020.11.669>.
- Muhammad, M.A. & Ahmed, F.R.. 2023. Evaluation of deflection and flexural performance of reinforced concrete beams with glass fiber reinforced polymer bars. *Case Studies in Construction Materials*, 18, e01855, ISSN 2214-5095, <https://doi.org/10.1016/j.cscm.2023.e01855>. (<https://www.sciencedirect.com/science/article/pii/S2214509523000347>)
- Muslikh., Iman, M., & Setiawan, A. F. 2021. *Pemodelan Elemen Hingga Struktur Menggunakan Abaqus*. Yogyakarta: Beta Offset.
- Nugroho, B.P. 2013. Tinjauan kuat tekan dan kuat lentur balok tanpa tulangan beton ringan menggunakan batu apung sebagai agregat kasar dengan bahan tambah kapur dan aluminium pasta. Naskah artikel. Universitas Muhammadiyah Surakarta.
- Nuryani. 2005. *Pengaruh Rasio Tulangan Pada Berbagai Mutu Beton Terhadap Penguatan Tarik Baja Tulangan Beton Bertulang (Tension Stiffening Effect)*. Universitas Diponegoro.
- Nematzadeh, M., Karimi, A., & Fallah-Valukolae, S. 2020. Compressive performance of steel fiber-reinforced rubberized concrete core detached from heated CFST. *Construction and Building Material*. 239 : 117832.
- Nematzadeh, M., Fallah-Valukolae, S.. 2021. Experimental and analytical investigation on structural behavior of two-layer fiber-reinforced concrete beams reinforced with steel and GFRP rebars. *Construction and Building Materials*. 273, 121933, ISSN 0950-0618,

<https://doi.org/10.1016/j.conbuildmat.2020.121933>.

(<https://www.sciencedirect.com/science/article/pii/S0950061820339374>)

Oh, B.H., Kim, J.C., & Choi, Y.C. 2007. Fracture behavior of concrete members reinforced with structural synthetic fibers, *Eng. Fract. Mech.* 74 (1-2): 243–257.

Otoom, O.F., Lokuge, W., Karunasena, W., Manalo, A.C., Ozbakkaloglu, T. & Thambiratnam, D. 2021. Experimental and numerical evaluation of the compression behaviour of GFRP-wrapped infill materials. *Case Studies in Construction Materials*. 15: e00654. ISSN 2214-5095. <https://doi.org/10.1016/j.cscm.2021.e00654>.

Orouji M., , Najaf, E. 2023. Effect of GFRP rebars and polypropylene fibers on flexural strength in high-performance concrete beams with glass powder and microsilica, *Case Studies in Construction Materials*, 18, e01769, ISSN 2214-5095, <https://doi.org/10.1016/j.cscm.2022.e01769>.
(<https://www.sciencedirect.com/science/article/pii/S2214509522009019>)

Pratama, R. F., Budio, S. P., & Wijaya, M. N. 2016. Analisis Kekakuan Struktur Balok Beton Bertulang Dengan Lubang Hollow Core pada Tengah Balok. 1–11.

PUBI -1928 (1928). Persyaratan Umum Bahan Bangunan Di Indonesia.

Saleh, Z., Goldston, M., Remennikov, A.M., & Neaz-Sheikh, M.N. 2019. Flexural design of GFRP bar reinforced concrete beams: An appraisal of code recommendations. *Journal of Building Engineering*. 25 (100794). ISSN 2352-7102, <https://doi.org/10.1016/j.jobbe.2019.100794>.

Sinaei, H., Shariati, M., Abna, A.H., Aghaei, M. & Shariati, A. 2012. Evaluation of reinforced concrete beam behaviour using finite element analysis by ABAQUS. *Scientific Research and Essays* 7(21): 2002-2009. <http://www.academicjournals.org/SRE>. DOI: 10.5897/SRE11.1393

Sinaei H, Jumaat MZ, & Shariati M. 2011. Numerical investigation on exterior reinforced concrete Beam-Column joint strengthened by composite fiber reinforced polymer (CFRP). *International Journal of the Physical Sciences*. 6(28): 6572-6579. <http://www.academicjournals.org/IJPS>. DOI: 10.5897/IJPS11.1225

Sirimontree, S., Keawsawasvong, S. & Thongchom, C. 2021. Flexural Behavior of Concrete Beam Reinforced with GFRP Bars Compared to Concrete Beam Reinforced with Conventional Steel Reinforcements. *Journal of Applied Science and Engineering*, 24(6): 883-890.

SNI 03-1968-1990. 1990. Metode Pengujian Tenang Analisis Saringan Agregat Halus dan Kasar, Badan Standarisasi Nasional.

SNI 03-4431-1997. (1997). Metode Pengujian Kuat Lentur Normal Dengan Dua Titik Pembebanan. Badan Standarisasi Nasional.



- SNI 2487-2019. (2019). Persyaratan Beton Struktural Untuk Bangunan Gedung dan Penjelasan, Badan Standarisasi Nasional.
- SNI 4431-2011. (2011). Cara Uji Kuat Lentur Beton Normal dengan Dua Titik Pembebanan, Badan Standarisasi Nasional.
- SNI T-15-1990-03. (1991). Tata Cara Rencana Pembuatan Campuran Beton Normal, Badan Standarisasi Nasional.
- SNI 2847-2013. (2013). Persyaratan beton struktural untuk bangunan gedung.
- SNI 03 - 2847-2002. (2002). Tata Cara Perhitungan Struktur Beton Untuk Bangunan Gedung.
- Somaiah, A., Prasad, B., & Nath, N. A. 2021. Comprehensive review: Characterization of glass fiber reinforced polymer composites with fillers from a Thermo-mechanical perspective. <https://www.sciencedirect.com/science/article/abs/pii/S2214785322023598>
- Somaiah, A., Anjaneya Prasad B. & Kishore Nath N. 2022. A comprehensive review: Characterization of glass fiber reinforced polymer composites with fillers from a Thermo-mechanical perspective *Materials Today: Proceedings*. 62(6): 3226-3232.
- Struct, X, 2023. Structural Engineering Resources. Diunduh pada 30 Maret 2023.
- Suchorab Z., Franus, M., & 2 and Barnat-Hunek, D. 2020. Properties of Fibrous Concrete Made with Plastic Optical Fibers from E-Waste. *Materials* 2020, 13(10), 2414; <https://doi.org/10.3390/ma13102414>
- Tjokrodimuljo, K. 2007. *Teknologi Beton*. Biro Penerbit Jurusan Teknik Sipil, Fakultas Teknik, Universitas Gajah Mada. Yogyakarta.
- Wang W., Sheikh M.N., Hadi, M.N. S., Gao, D., & Chen, G. 2017. Behaviour of concrete-encased concrete-filled FRP tube (CCFT) columns under axial compression. *Engineering Structures*, 147 256-268.
- Wu, C., Su, Y., Zhang, P., Zhu, H., Gao, D., & Sheikh, S. 2022. Experimental Study of GFRP Reinforced Concrete Beams With U-Shaped CFRP Grid-Reinforced ECC Stay-in-Place Formwork. <https://www.frontiersin.org/articles/10.3389/fmats.2022.872232/full>
- Yan, F., Lin, Z., & Yang, M. 2016. Bond mechanism and bond strength of GFRP bars to concrete: A review. <https://www.sciencedirect.com/science/article/abs/pii/S1359836816305200>
- Zarringol, M., & Zaringol, M. 2016. A Comparative Study on the Efficiency of CFRP and GFRP in the Improvement of Compressive Strength, Acoustic Impedance and Bracing of Filled and Hollow Concrete Columns in Different Layers and Ages. <https://www.researchgate.net/publication/308727692>



Wang Y, Cheng L, Cui X, Guo W. 2019. Crystallization Behavior and Properties of Glass Fiber Reinforced Polypropylene Composites. *Polymers* (Basel). 17;11(7):1198. doi: 10.3390/polym11071198. PMID: 31319580; PMCID: PMC6680460.

Yang, J.M., Min, K.H., Shin, H.O., Yoon, Y.S. 2014. Effect of steel and synthetic f

Zhang, S., Han, B., Huibing Xie, H., Mingzhe An, M., & Lyu, S. 2021. Brittleness of Concrete under Different Curing Conditions. *Materials* (Basel). 14(24): 7865. doi: 10.3390/ma14247865.