DAFTAR PUSTAKA

Akhyar *et al*. (2022) "Evaluation of Welding Distortion and Hardness in the A36 Steel Plate Joints Using Different Cooling Media," *Sustainability*, 14(3), p. 1405. https://doi.org/10.3390/su14031405.

American Welding Society (ed.) (2022) *Structural welding code - steel: AWS D1.1/D1.1M:2020: an American national standard*. 24th edition, second printing. Miami, FL: AWS, American Welding Society.

Anhar, M. (2019) "Pendinginan Pengelasan dengan Metode SMAW pada Kekerasan Baja Karbon ST37 dengan Media Serbuk Semen Abu-Abu pada Beban Rockwell 100 kgf," *ROTASI*, 21(3), p. 140. https://doi.org/10.14710/rotasi.21.3.140-146.

Ariyanto, N.P. *et al.* (2022) "Pengujian Kekerasan dan Struktur Mikro Sambungan Low-Carbon Steel dan Austenitic Stainless Steel," *Jurnal Teknologi dan Riset Terapan (JATRA)*, 4(1), pp. 40–44. https://doi.org/10.30871/jatra.v4i1.4111.

Callister, W.D. and Rethwisch, D.G. (2014) *Materials science and engineering: an introduction*. 9. ed. Hoboken, NJ: Wiley.

Callister, W.D. and Rethwisch, D.G. (2018) *Materials science and engineering: an introduction*. 10th edition. Hoboken, NJ: John Wiley & Sons, Inc.

Cary, H.B. and Helzer, S.C. (2005) *Modern welding technology*. 6. ed. Upper Saddle River, NJ: Pearson/Prentice Hall.

Cumming, G., Fidler, F. and Vaux, D.L. (2007) "Error bars in experimental biology," *The Journal of Cell Biology*, 177(1), pp. 7–11. https://doi.org/10.1083/jcb.200611141.

Darmawan, A.S. *et al.* (2024) "Effect of Shielded Metal Arc Welding on Microstructure, Hardness, and Tensile Strength of Nodular Cast Iron," in. *6th International Conference on Advanced Materials Science*, Surakarta, Indonesia, pp. 21–26. https://doi.org/10.4028/p-2gxSXr.

Gonzalez, R.C. and Woods, R.E. (2018) *Digital image processing*. Fourth, global edition. New York, New York: Pearson Education.

Jeffus, L.F. (2017) *Welding: principles and applications*. Eighth edition. Australia ; Boston, MA: Cengage Learning.

Kou, S. (2003) *Welding metallurgy*. 2nd ed. Hoboken, N.J: Wiley-Interscience.

Lancaster, J.F. (1980) *Metallurgy of Welding*. Dordrecht: Springer Netherlands. https://doi.org/10.1007/978-94-010-9506-8.

Liao J., Ikeuchi K. and Matsuda F. (1996) “Weld HAZ Toughness and Its Improvement of Low Alloy Steel SQV-2A for Pressure Vessels. (Report 1). Effect of Cooling Time on the Weld HAZ Toughness and Microstructure.,” *Quarterly Journal Of The Japan Welding Society*, 14(1), pp. 116–121. https://doi.org/10.2207/qjjws.14.116.

Markoli, B. *et al.* (2013) “Assessment of Some Methods for Grain Size Measurement,” *Practical Metallography*, 50(7), pp. 464–479. https://doi.org/10.3139/147.110174.

Martín, S.D. *et al.* (2008) “Effect of heating rate on reaustenitisation of low carbon niobium microalloyed steel,” *Materials Science and Technology*, 24(3), pp. 266–272. https://doi.org/10.1179/174328408X265640.

Masoumi, F. and Shahriari, D. (2009) “Effects of Welding Positions on Mechanical Properties and Microstructure in Weld Metal of High Strength Steel,” *Advanced Materials Research*, 83–86, pp. 1121–1127. https://doi.org/10.4028/www.scientific.net/AMR.83-86.1121.

Messler, R.W. (2004) *Principles of welding: processes, physics, chemistry, and metallurgy*. Weinheim: Wiley-VCH (Physiks Textbook). https://doi.org/10.1002/9783527617487.

Montgomery, D.C. (2017) *Design and analysis of experiments*. Ninth edition. Hoboken, NJ: John Wiley & Sons, Inc.

Nurcholis, I. *et al.* (2022) “Analisis komparasi kekerasan dan struktur mikro lasan dissimilar material pada berbagai posisi pengelasan di industri fabrikasi.”

Otsu, N. (1979) “A Threshold Selection Method from Gray-Level Histograms,” *IEEE Transactions on Systems, Man, and Cybernetics*, 9(1), pp. 62–66. https://doi.org/10.1109/TSMC.1979.4310076.

Phillips, D.H. (2016) *Welding engineering: an introduction*. Chichester, West Sussex: Wiley.

Porter, D.A., Easterling, K.E. and Easterling, K.E. (2009) *Phase Transformations in Metals and Alloys (Revised Reprint)*. 0 ed. CRC Press. https://doi.org/10.1201/9781439883570.

Radaj, D. and Radaj, D. (2003) *Welding residual stresses and distortion: calculation and measurement*. Rev. ed. Düsseldorf: DVS-Verl (English edition, 2).

Ramadhan, F., Zulfika, D.N. and Hakim, L. (2023) “Analisis Pengelasan Smaw Baja S45c Terhadap Skd11 Dengan Variasi Posisi Terhadap Nilai Kekerasan,” *Seminar Nasional Fakultas Teknik*, 2(1), pp. 370–375. https://doi.org/10.36815/semastek.v2i1.199.

Sayed, A.M. and Alanazi, H. (2022) “Performance of steel metal prepared using different welding cooling methods,” *Case Studies in Construction Materials*, 16, p. e00953. https://doi.org/10.1016/j.cscm.2022.e00953.

Schneider, C.A., Rasband, W.S. and Eliceiri, K.W. (2012) “NIH Image to ImageJ: 25 years of image analysis,” *Nature Methods*, 9(7), pp. 671–675. https://doi.org/10.1038/nmeth.2089.

Sebayang, A. *et al.* (2024) “Tensile Strength of S45C Steel Material for SMAW Welding with Various Cooling Media,” *International Journal of Research in Vocational Studies (IJRVOCAS)*, 3(4), pp. 01–06. https://doi.org/10.53893/ijrvocas.v3i4.1.

Tarigan, E. *et al.* (2023) “Analysis of Tensile Strength on ST.37 Material with SMAW Welding Variations of SAE 10 Oil and Water Cooling,” *International Journal of Research in Vocational Studies (IJRVOCAS)*, 2(4), pp. 20–24. https://doi.org/10.53893/ijrvocas.v2i4.158.

Taylor, J.R. (1997) *An introduction to error analysis: the study of uncertainties in physical measurements*. 2nd ed. Sausalito, Calif: University Science Books.

Totten, G.E. and MacKenzie, D.S. (eds.) (2003) *Handbook of aluminum*. New York ; Basel: M. Dekker.

Vietanti, F. *et al.* (2021) “Analysis of Welding Position and Current on Mechanical Properties of A36 Steel using Shield Metal Arc Welding,” *Journal of Physics: Conference Series*, 2117(1), p. 012001. https://doi.org/10.1088/1742-6596/2117/1/012001.

Wahyu Aji Peratama *et al.* (2024) “Analisis Variasi Pendingin Dan Metode Pengelasan Terhadap Kekerasan Pada Material Baja Paduan Karbon Rendah Menggunakan Las Smaw,” *Jurnal MOTION (Manufaktur, Otomasi, Otomotif, dan Energi Terbarukan)*, 2(02), pp. 34–40. https://doi.org/10.33752/motion.v2i02.6340.

Wang, X. *et al.* (2024) “Effects of Cooling Media on Microstructure and Mechanical Properties in Friction Stir Welded SA516 Gr.70 Cryogenic Steel Joints,” *Materials*, 17(18), p. 4661. https://doi.org/10.3390/ma17184661.

Wibowo, H., Ilman, M.N. and Tri Iswanto, P. (2016) “Analisa Heat Input Pengelasan terhadap Distorsi, Struktur Mikro dan Kekuatan Mekanis Baja A36,” *Jurnal Rekayasa Mesin*, 7(1), pp. 5–12. https://doi.org/10.21776/ub.jrm.2016.007.01.2.

Wicaksono, I. *et al.* (2021) “Pengaruh Media Pendingin Terhadap Karakteristik Mekanik Dan Struktur Mikro Pada Pelat Baja Karbon Rendah,” *Urania : Jurnal Ilmiah Daur Bahan Bakar Nuklir*, 27(1), p. 21. https://doi.org/10.17146/urania.2021.27.1.6187.

Wiratmaja, I.G., Nugraha, I.N.P. and Mahayoga, I.K.A. (2025) "Analisis Pengaruh Variasi Pendinginan Terhadap Nilai Kekerasan dan Struktur Mikro Baja ST 42 Hasil Pengelasan SMAW," *Nusantara of Engineering (NOE)*, 8(01), pp. 250–257. https://doi.org/10.29407/noe.v8i01.23190.

Xiangyun, T., Guoquan, L. and Kuangdi, X. (2023) "Iron–Carbon Phase Diagram," in K. Xu (ed.) *The ECPH Encyclopedia of Mining and Metallurgy*. Singapore: Springer Nature Singapore, pp. 1–7. https://doi.org/10.1007/978-981-19-0740-1_436-1.

Zhao, Y., Wang, C. and Dong, C. (2018) "Microstructural Characteristics and Mechanical Properties of Water Cooling Bobbin-Tool Friction Stir Welded 6063-T6 Aluminum Alloy," *MATEC Web of Conferences*. Edited by C.W. Lim and X. Zhu, 206, p. 03002. https://doi.org/10.1051/matecconf/201820603002.

Zheng, S. *et al*. (2011) "Influence of different cooling rates on the microstructure of the HAZ and welding CCT diagram of CLAM steel," *Fusion Engineering and Design*, 86(9–11), pp. 2616–2619. https://doi.org/10.1016/j.fusengdes.2011.02.072.