## DAFTAR PUSTAKA

Abbasi, A. M., Motamedzade, M., Aliabadi, M., Golmohammadi, R., & Tapak, L. (2020). Combined effects of noise and air temperature on human neurophysiological responses in a simulated indoor environment. *Applied Ergonomics*, *88*, 103189. https://doi.org/10.1016/J.APERGO.2020.103189

Abdel-Hakim, A., El-Basheer, T. M., Abd El-Aziz, A. M., & Afifi, M. (2021a). Acoustic, ultrasonic, mechanical properties and biodegradability of sawdust/ recycled expanded polystyrene eco-friendly composites. *Polymer Testing*, *99*(March), 107215. https://doi.org/10.1016/j.polymertesting.2021.107215

Abdel-Hakim, A., El-Basheer, T. M., Abd El-Aziz, A. M., & Afifi, M. (2021b). Acoustic, ultrasonic, mechanical properties and biodegradability of sawdust/ recycled expanded polystyrene eco-friendly composites. *Polymer Testing*, *99*(April). https://doi.org/10.1016/j.polymertesting.2021.107215

Abu-Jdayil, B. (2019). Unsaturated polyester microcomposites. In *Unsaturated Polyester Resins: Fundamentals, Design, Fabrication, and Applications*. Elsevier Inc. https://doi.org/10.1016/B978-0-12-816129-6.00003-X

Akash, R., Muraliraja, R., Suthan, R., & Shaisundaram, V. S. (2020). Synthesis and testing of aluminium composite using industrial waste as reinforcement. *Materials Today: Proceedings*, *37*(Part 2), 634–637. https://doi.org/10.1016/j.matpr.2020.05.627

Anidha, S., Latha, N., & Muthukkumar, M. (2019). Reinforcement of Aramid fiber with bagasse epoxy bio-degradable composite: Investigations on mechanical properties and surface morphology. *Journal of Materials Research and Technology*, *8*(3), 3198–3212. https://doi.org/10.1016/j.jmrt.2019.05.008

Arenas, J. P., & Crocker, M. J. (2010). Recent Trends in Porous Sound-Absorbing Materials. *Sound & VIibration*, 30–33. http://www.sandv.com/downloads/1007croc.pdf

Arroyo, F. N., Christoforo, A. L., Salvini, V. R., Pelissari, P. I. B. G. B., Pandolfelli, V. C., Luz, A. P., & Cardoso, C. A. (2020). Development of plaster foam for thermal and acoustic applications. *Construction and Building Materials*, *262*, 120800. https://doi.org/10.1016/j.conbuildmat.2020.120800

Barkhad, M. S., Abu-Jdayil, B., Iqbal, M. Z., & Mourad, A. H. I. (2020). Thermal insulation using biodegradable poly(lactic acid)/date pit composites. *Construction and Building Materials*, *261*, 120533. https://doi.org/10.1016/j.conbuildmat.2020.120533

Bartos, A., Anggono, J., Farkas, Á. E., Kun, D., Soetaredjo, F. E., Móczó, J., Antoni, Purwaningsih, H., & Pukánszky, B. (2020). Alkali treatment of lignocellulosic fibers extracted from sugarcane bagasse: Composition, structure, properties. In *Polymer Testing* (Vol. 88). Elsevier Ltd. https://doi.org/10.1016/j.polymertesting.2020.106549

Boquera, L., Olacia, E., Fabiani, C., Pisello, A. L., D'Alessandro, A., Ubertini, F., & Cabeza, L. F. (2021). Thermo-acoustic and mechanical characterization of novel bio-based plasters: The valorisation of lignin as by-product from biomass extraction for green building applications. *Construction and Building Materials*, *278*, 122373. https://doi.org/https://doi.org/10.1016/j.conbuildmat.2021.122373

BPS. (2023). *STATISTIK TEBU INDONESIA*. *13*.

Buratti, C., Belloni, E., Lascaro, E., Merli, F., & Ricciardi, P. (2018). Rice husk panels for building applications: Thermal, acoustic and environmental characterization and comparison with other innovative recycled waste materials. *Construction and Building Materials*, *171*, 338–349. https://doi.org/https://doi.org/10.1016/j.conbuildmat.2018.03.089

Chawla. (1987). *Composite Materials Science And Engineering*. Springer.

Chiu, S., Noble, D., & Valmont, E. (2015). Acoustics in architectural fabric structures: The case of ETFE pillows. In *Fabric Structures in Architecture*. Elsevier Ltd. https://doi.org/10.1016/B978-1-78242-233-4.00009-7

Das, O., Babu, K., Shanmugam, V., Sykam, K., Tebyetekerwa, M., Neisiany, R. E., Försth, M., Sas, G., Gonzalez-Libreros, J., Capezza, A. J., Hedenqvist, M. S., Berto, F., & Ramakrishna, S. (2022). Natural and industrial wastes for sustainable and renewable polymer composites. *Renewable and Sustainable Energy Reviews*, *158*, 112054. https://doi.org/10.1016/J.RSER.2021.112054

Durakovic, B. (2017). Design of experiments application, concepts, examples: State of the art. *Periodicals of Engineering and Natural Sciences*, *5*, 421–439. https://doi.org/10.21533/pen.v5i3.145

Ehsan Samaei, S., Berardi, U., Taban, E., Soltani, P., & Mohammad Mousavi, S. (2021). Natural fibro-granular composite as a novel sustainable sound-absorbing material. *Applied Acoustics*, *181*, 108157. https://doi.org/10.1016/j.apacoust.2021.108157

Elkhessaimi, Y., Tessier-Doyen, N., & Smith, A. (2017). Effects of microstructure on acoustical insulation of gypsum boards. *Journal of Building Engineering*, *14*(August), 24–31. https://doi.org/10.1016/j.jobe.2017.09.011

Evans, S. K., Wesley, O. N., Nathan, O., & Moloto, M. J. (2019). Chemically purified cellulose and its nanocrystals from sugarcane baggase: isolation and characterization. *Heliyon*, *5*(10), e02635. https://doi.org/10.1016/j.heliyon.2019.e02635

Ghaffar, S. H. (2017). Straw fibre-based construction materials. In *Advanced High Strength Natural Fibre Composites in Construction*. Elsevier Ltd. https://doi.org/10.1016/B978-0-08-100411-1.00011-X

Guna, V., Ilangovan, M., Hu, C., Venkatesh, K., & Reddy, N. (2019). Valorization of sugarcane bagasse by developing completely biodegradable composites for industrial applications. *Industrial Crops and Products*, *131*(October 2018), 25–31. https://doi.org/10.1016/j.indcrop.2019.01.011

Haque, A., Mondal, D., Khan, I., Usmani, M. A., Bhat, A. H., & Gazal, U. (2017). Fabrication of composites reinforced with lignocellulosic materials from agricultural biomass. In *Lignocellulosic Fibre and Biomass-Based Composite Materials: Processing, Properties and Applications*. Elsevier Ltd. https://doi.org/10.1016/B978-0-08-100959-8.00010-X

Harini, K., & Chandra Mohan, C. (2020). Isolation and characterization of micro and nanocrystalline cellulose fibers from the walnut shell, corncob and sugarcane bagasse. *International Journal of Biological Macromolecules*, *163*, 1375–1383. https://doi.org/10.1016/j.ijbiomac.2020.07.239

Harris, J. E., Sheean, P. M., Gleason, P. M., Bruemmer, B., & Boushey, C. (2012). Publishing nutrition research: A review of multivariate techniques-part 2: Analysis of variance. In *Journal of the Academy of Nutrition and Dietetics* (Vol. 112, Issue 1, pp. 90–98). Elsevier B.V. https://doi.org/10.1016/j.jada.2011.09.037

Haryono, A. P., Ubaidillah, & Diharjo, K. (2018). The noise absorption performance of sugarcane-bagasse-polyvinyl acetate glue based absorber. *AIP Conference*

*Proceedings*, *1931*(February 2018). https://doi.org/10.1063/1.5024124

Hidayah, N. Y., Rimantho, D., Sundari, A. S., & Herzanita, A. (2021). Analisis Uji Kemampuan Komposit Berbahan Dasar Limbah Dalam Fungsi Penyerapan Suara. *JMPM (Jurnal Material Dan Proses Manufaktur)*, *5*(1), 18–24. https://doi.org/10.18196/jmpm.v5i1.12140

Hugot, E., & Jenkins, G. H. (1986). *Handbook of Cane Sugar Engineering*. Elsevier. https://books.google.co.id/books?id=hNdxQgAACAAJ

Kandpal, B. C., Johri, N., Kumar, N., & Srivastava, A. (2021). Effect of industrial/ agricultural waste materials as reinforcement on properties of metal matrix composites. *Materials Today: Proceedings*, *46*(xxxx), 10736–10740. https://doi.org/10.1016/j.matpr.2021.01.575

Kesharwani, A., Bedi, R., Kumar Bagha, A., & Bahl, S. (2020). Experimental study to measure the sound transmission loss of natural fibers at tonal excitations. *Materials Today: Proceedings*, *28*, 1554–1559. https://doi.org/https://doi.org/10.1016/j.matpr.2020.04.839

Kumar, A., Claire, S., Khanna, J., Dhadwal, N., Ninama, N., & Kumar Bagha, A. (2019). Experimental study to measure the sound transmission loss and equivalent continuous sound pressure level of composite material for various disturbances. *Materials Today: Proceedings*, *27*(xxxx), 2782–2786. https://doi.org/10.1016/j.matpr.2019.12.199

Laksono, P. W., Rochman, T., Setyanto, H., Pujiyanto, E., & Diharjo, K. (2014). Design and manufacturing Bio composite (Sugarcane Bagasse - Polyvinyl Acetate) panel that characterized thermal conductivity. *Advanced Materials Research*, *893*, 504–507. https://doi.org/10.4028/www.scientific.net/AMR.893.504

Lamb, S., & Kwok, K. C. S. (2016). A longitudinal investigation of work environment stressors on the performance and wellbeing of office workers. *Applied Ergonomics*, *52*, 104–111. https://doi.org/10.1016/J.APERGO.2015.07.010

Liu, Z., Zhan, J., Fard, M., & Davy, J. L. (2017). Acoustic measurement of a 3D printed micro-perforated panel combined with a porous material. *Measurement: Journal of the International Measurement Confederation*, *104*, 233–236. https://doi.org/10.1016/j.measurement.2017.03.032

Makul, N., & Sua-Iam, G. (2016). Characteristics and utilization of sugarcane filter cake waste in the production of lightweight foamed concrete. In *Journal of Cleaner Production* (Vol. 126). Elsevier Ltd. https://doi.org/10.1016/j.jclepro.2016.02.111

Malawade, U. A., & Jadhav, M. G. (2020). Investigation of the Acoustic Performance of Bagasse. *Journal of Materials Research and Technology*, *9*(1), 882–889. https://doi.org/10.1016/j.jmrt.2019.11.028

Mohamed, G. R., Mahmoud, R. K., Fahim, I. S., Shaban, M., Abd El-Salam, H. M., & Mahmoud, H. M. (2021). Bio-composite Thermal Insulation Materials Based on Banana Leaves Fibers and Polystyrene: Physical and Thermal Performance. *Journal of Natural Fibers*, *00*(00), 1–16. https://doi.org/10.1080/15440478.2020.1870628

Olcay, H., & Kocak, E. D. (2021). Rice plant waste reinforced polyurethane composites for use as the acoustic absorption material. *Applied Acoustics*, *173*, 107733. https://doi.org/https://doi.org/10.1016/j.apacoust.2020.107733

Peng, L. (2017). Sound absorption and insulation functional composites. In *Advanced High Strength Natural Fibre Composites in Construction*. Elsevier Ltd.

https://doi.org/10.1016/B978-0-08-100411-1.00013-3

Pierossi, M. A., & Bertolani, F. C. (2018). Sugarcane Trash as Feedstock for Biorefineries. In *Advances in Sugarcane Biorefinery: Technologies, Commercialization, Policy Issues and Paradigm Shift for Bioethanol and By-Products*. Elsevier Inc. https://doi.org/10.1016/B978-0-12-804534-3.00002-1

Pu, H., Ding, X., Chen, H., Dai, R., & Shan, Z. (2021). Functional aerogels with sound absorption and thermal insulation derived from semi-liquefied waste bamboo and gelatin. *Environmental Technology and Innovation*, *24*, 101874. https://doi.org/10.1016/j.eti.2021.101874

Qiu, W., Hamernik, R. P., & Davis, R. I. (2013). The value of a kurtosis metric in estimating the hazard to hearing of complex industrial noise exposures. *The Journal of the Acoustical Society of America*, *133*(5), 2856–2866. https://doi.org/10.1121/1.4799813

Ramlee, N. A., Jawaid, M., Ismail, A. S., Zainudin, E. S., & Yamani, S. A. K. (2021). Evaluation of Thermal and Acoustic Properties of Oil Palm Empty Fruit Bunch/Sugarcane Bagasse Fibres Based Hybrid Composites for Wall Buildings Thermal Insulation. *Fibers and Polymers*, *22*(9), 2563–2571. https://doi.org/10.1007/s12221-021-0224-6

Ryu, J., Song, H., & Kim, Y. (2018). Effect of the suspended ceiling with low-frequency resonant panel absorber on heavyweight floor impact sound in the building. *Building and Environment*, *139*(April), 1–7. https://doi.org/10.1016/j.buildenv.2018.05.004

Sailesh, R., Yuvaraj, L., Pitchaimani, J., Doddamani, M., & Mailan Chinnapandi, L. B. (2021). Acoustic behaviour of 3D printed bio-degradable micro-perforated panels with varying perforation cross-sections. *Applied Acoustics*, *174*(xxxx), 107769. https://doi.org/10.1016/j.apacoust.2020.107769

Sakthivel, S., Senthil Kumar, S., Solomon, E., Getahun, G., Admassu, Y., Bogale, M., Gedilu, M., Aduna, A., & Abedom, F. (2021a). Sound absorbing and insulating properties of natural fiber hybrid composites using sugarcane bagasse and bamboo charcoal. *Journal of Engineered Fibers and Fabrics*, *16*. https://doi.org/10.1177/15589250211044818

Sakthivel, S., Senthil Kumar, S., Solomon, E., Getahun, G., Admassu, Y., Bogale, M., Gedilu, M., Aduna, A., & Abedom, F. (2021b). Sound absorbing and insulating properties of natural fiber hybrid composites using sugarcane bagasse and bamboo charcoal. *Journal of Engineered Fibers and Fabrics*, *16*. https://doi.org/10.1177/15589250211044818

Sambandamoorthy, S., Narayanan, V., Chinnapandi, L. B. M., & Aziz, A. (2021). Impact of fiber length and surface modification on the acoustic behaviour of jute fiber. *Applied Acoustics*, *173*, 107677. https://doi.org/10.1016/j.apacoust.2020.107677

Santoni, A., Bonfiglio, P., Fausti, P., Marescotti, C., Mazzanti, V., Mollica, F., & Pompoli, F. (2019). Improving the sound absorption performance of sustainable thermal insulation materials: Natural hemp fibres. *Applied Acoustics*, *150*, 279–289. https://doi.org/https://doi.org/10.1016/j.apacoust.2019.02.022

Sekar, V., Yong, S., Noum, E., Putra, A., Sivanesan, S., Daniel, D., & Vui, C. (2022). Fabrication of light-weighted acoustic absorbers made of natural fi ber composites via additive manufacturing. *International Journal of Lightweight Materials and Manufacture*, *5*(4), 520–527. https://doi.org/10.1016/j.ijlmm.2022.06.007

Shahzad, A. (2017). Mechanical properties of lignocellulosic fiber composites. In *Lignocellulosic Fibre and Biomass-Based Composite Materials: Processing, Properties and Applications*. Elsevier Ltd. https://doi.org/10.1016/B978-0-08-100959-8.00011-1

Shanks, R. A. (2015). Isolation and application of cellulosic fibres in composites. *Biofiber Reinforcements in Composite Materials*, 553–570. https://doi.org/10.1533/9781782421276.5.553

Silva, C. C. B. da, Terashima, F. J. H., Barbieri, N., & Lima, K. F. de. (2019). Sound absorption coefficient assessment of sisal, coconut husk and sugar cane fibers for low frequencies based on three different methods. *Applied Acoustics*, *156*, 92–100. https://doi.org/10.1016/j.apacoust.2019.07.001

Singh, S. P., Jawaid, M., Chandrasekar, M., Senthilkumar, K., Yadav, B., Saba, N., & Siengchin, S. (2021). Sugarcane wastes into commercial products: Processing methods, production optimization and challenges. *Journal of Cleaner Production*, *328*, 129453. https://doi.org/10.1016/J.JCLEPRO.2021.129453

Swinburn, T. K., Hammer, M. S., & Neitzel, R. L. (2015). Valuing Quiet: An Economic Assessment of U.S. Environmental Noise as a Cardiovascular Health Hazard. *American Journal of Preventive Medicine*, *49*(3), 345–353. https://doi.org/10.1016/j.amepre.2015.02.016

Taban, E., Khavanin, A., Ohadi, A., Putra, A., Jafari, A. J., Faridan, M., & Soleimanian, A. (2019). Study on the acoustic characteristics of natural date palm fibres: Experimental and theoretical approaches. *Building and Environment*, *161*(April), 106274. https://doi.org/10.1016/j.buildenv.2019.106274

Taban, E., Valipour, F., Abdi, D. D., & Amininasab, S. (2021). Mathematical and experimental investigation of sound absorption behavior of sustainable kenaf fiber at low frequency. *International Journal of Environmental Science and Technology*, *18*(9), 2765–2780. https://doi.org/10.1007/s13762-020-03024-0

Tan, W. H., Lim, E. A., Chuah, H. G., Cheng, E. M., & Lam, C. K. (2016). Sound transmission loss of natural fiber panel. *International Journal of Mechanical and Mechatronics Engineering*, *16*(6), 33–42.

Tang, X., Zhang, X., Zhang, H., Zhuang, X., & Yan, X. (2018). Corn husk for noise reduction: Robust acoustic absorption and reduced thickness. *Applied Acoustics*, *134*(April 2017), 60–68. https://doi.org/10.1016/j.apacoust.2018.01.012

Thattai, D., Sudarsan, J. S., Sathyanathan, R., & Ramasamy, V. (2017). Analysis of noise pollution level in a University campus in South India. *IOP Conference Series: Earth and Environmental Science*, *80*(1), 4–11. https://doi.org/10.1088/1755-1315/80/1/012053

Tie, T. S., Mo, K. H., Putra, A., Loo, S. C., Alengaram, U. J., & Ling, T. C. (2020). Sound absorption performance of modified concrete: A review. *Journal of Building Engineering*, *30*, 101219. https://doi.org/10.1016/j.jobe.2020.101219

Toscano Miranda, N., Lopes Motta, I., Maciel Filho, R., & Wolf Maciel, M. R. (2021). Sugarcane bagasse pyrolysis: A review of operating conditions and products properties. *Renewable and Sustainable Energy Reviews*, *149*(July), 111394. https://doi.org/10.1016/j.rser.2021.111394

Wicaksono, A. B., Djafar, Z., & Kusno, A. (2023). Sound Absorption Coefficient Analysis for Composite Made of Agricultural Waste. *Materials Science Forum*, *1091*, 161–170. https://doi.org/10.4028/p-mo2395

Witczak, E., Jasińska, I., Lao, M., Krawczyńska, I., & Kamińska, I. (2021). The influence of structural parameters of acoustic panels textile fronts on their sound absorption properties. *Applied Acoustics*, *178*. https://doi.org/10.1016/j.apacoust.2021.107964

Xu, X., Wang, H., Sun, Y., Han, J., & Huang, R. (2018). Sound absorbing properties of perforated composite panels of recycled rubber, fiberboard sawdust, and high density polyethylene. *Journal of Cleaner Production*, *187*, 215–221. https://doi.org/10.1016/j.jclepro.2018.03.174

Yang, C., Cheng, L., & Hu, Z. (2015). Reducing interior noise in a cylinder using micro-perforated panels. *Applied Acoustics*, *95*, 50–56. https://doi.org/10.1016/j.apacoust.2015.02.003

Yuvaraj, L., Jeyanthi, S., & Yogananda, A. (2020). An acoustical investigation of partial perforation in jute fiber composite panel. *Materials Today: Proceedings*, *37*(Part 2), 665–670. https://doi.org/10.1016/j.matpr.2020.05.632

Yuvaraj, L., Jeyanthi, S., & Yogananda, A. (2021a). An acoustical investigation of partial perforation in jute fiber composite panel. *Materials Today: Proceedings*, *37*, 665–670. https://doi.org/https://doi.org/10.1016/j.matpr.2020.05.632

Yuvaraj, L., Jeyanthi, S., & Yogananda, A. (2021b). An acoustical investigation of partial perforation in jute fiber composite panel. *International Conference on Newer Trends and Innovation in Mechanical Engineering: Materials Science*, *37*, 665–670. https://doi.org/https://doi.org/10.1016/j.matpr.2020.05.632

Zhang, H. (2011). Heat-insulating Materials and Sound-absorbing Materials. *Building Materials in Civil Engineering*, 316–423. https://doi.org/10.1533/9781845699567.316

Zhang, X., Yang, C., Cheng, L., & Zhang, P. (2020). An experimental investigation on the acoustic properties of micro-perforated panels in a grazing flow. *Applied Acoustics*, *159*, 107119. https://doi.org/10.1016/j.apacoust.2019.107119

Zhao, Z., Yan, H., Zheng, R., Khan, M. S., Fu, X., Tao, Z., & Zhang, Z. (2018). Anthocyanins characterization and antioxidant activities of sugarcane (Saccharum officinarum L.) rind extracts. *Industrial Crops and Products*, *113*(June 2017), 38–45. https://doi.org/10.1016/j.indcrop.2018.01.015

## LAMPIRAN

### Lampiran 1. Perhitungan Komposisi Bahan Pada Komposit

Adapun pembuatan komposit mengikuti rumus berikut (Chawla, 1987) dan (Barkhad et al., 2020).

1) Menghitung Volume Cetakan (Vcet)
   Dengan asumsi :
   Volume Cetakan = Volume Komposit Total
   Maka volume komposit (vc) :
   vc (1) $= \Pi \times (\frac{d}{2})^2 \times t$
   $= 3.14 \times (\frac{9,85\ cm}{2})^2 \times 3$ cm
   = 228,7 $cm^3$
2) Menghitung Volume Serat (vs)
   Volume serat (vs) = 60% × Volume Komposit 1
   vs (1) = 60% × 228,7 $cm^3$
   = 137,2 $cm^3$
3) Menghitung Massa Serat (ms)
   Massa Serat (ms) = Massa Jenis Serat (ρs) × Volume Serat (vs)
   ms (1) = 0,237 g/$cm^3$ × 137,2 $cm^3$
   = 32,5 gram
4) Volume Matriks (vm)
   Volume Matriks (vm) = 40% × Volume Komposit 1
   vm (1) = 40%× 228,7 $cm^3$
   = 91,5 $cm^3$
5) Menghitung Massa Matriks (mm)
   Massa Matriks (mm) = Massa Jenis Matriks (ρm) × Volume Matriks (vm)
   mm (1) = 1,215 g/$cm^3$ × 91,5 $cm^3$
   = 111,1 gram
6) Menghitung Volume Katalis (mk)
   Volume Katalis (vk) = 1% × Volume Matriks (vm)
   mk (1) = 1% × 91,5 $cm^3$
   = 0,915 $cm^3$

Adapun volume komposit ke-2 (vc) :

7) Menghitung Volume Cetakan (Vcet)
   Dengan asumsi :
   Volume Cetakan = Volume Komposit Total
   Maka volume komposit (vc) :
   vc (2) $= \Pi \times (\frac{d}{2})^2 \times t$
   $= 3.14 \times (\frac{6\ cm}{2})^2 \times 3$ cm
   = 84,9 $cm^3$
8) Menghitung Volume Serat (vs)

Volume serat (vs) = 60% × Volume Komposit 2
vs (2) = 60% × 84,9 $cm^3$
= 50,9 $cm^3$

9) Menghitung Massa Serat (ms)
Massa Serat (ms) = Massa Jenis Serat (ρs) × Volume Serat (vs)
ms (2) = 0,237 g/$cm^3$ × 50,9 $cm^3$
= 12,1 gram

10) Volume Matriks (vm)
Volume Matriks (vm) = 40% × Volume Komposit 2
vm (2) = 40%× 84,9 $cm^3$
= 33,9 $cm^3$

11) Menghitung Massa Matriks (mm)
Massa Matriks (mm) = Massa Jenis Matriks (ρm) × Volume Matriks (vm)
mm (2) = 1,215 g/$cm^3$ × 33,9 $cm^3$
= 41,2 gram

12) Menghitung Volume Katalis (vk)

13) Volume Katalis (vk) = 1% × Volume Matriks (vm)
vk (2) = 1% × 33,9 $cm^3$
= 0,339 $cm^3$

**Lampiran 1. Hasil Pengukuran Koefisien Penyerapan Suara (α) Sampel di Berbagai Frekuensi**

| No | Sampel | Frekuensi (Hz) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **200** | **300** | **400** | **500** | **600** | **700** | **800** | **900** | **1000** | **1100** | **1200** | **1300** | **1400** | **1500** | **1600** |
| 1 | $S0_{i}$ | 0.03 | 0.04 | 0.06 | 0.09 | 0.12 | 0.16 | 0.22 | 0.32 | 0.44 | 0.61 | 0.75 | 0.90 | 0.99 | 0.98 | 0.92 |
| 2 | $S0_{ii}$ | 0.05 | 0.07 | 0.09 | 0.13 | 0.16 | 0.22 | 0.30 | 0.40 | 0.52 | 0.67 | 0.80 | 0.92 | 0.98 | 0.99 | 0.96 |
| 3 | $S0_{iii}$ | 0.05 | 0.07 | 0.09 | 0.11 | 0.15 | 0.21 | 0.29 | 0.39 | 0.50 | 0.65 | 0.80 | 0.93 | 0.99 | 0.99 | 0.95 |
| 4 | $S1a_{i}$ | 0.05 | 0.07 | 0.09 | 0.12 | 0.15 | 0.20 | 0.27 | 0.35 | 0.45 | 0.59 | 0.70 | 0.83 | 0.93 | 0.99 | 0.99 |
| 5 | $S1a_{ii}$ | 0.05 | 0.07 | 0.09 | 0.11 | 0.15 | 0.19 | 0.26 | 0.35 | 0.46 | 0.56 | 0.71 | 0.83 | 0.93 | 0.99 | 1.00 |
| 6 | $S1a_{iii}$ | 0.05 | 0.07 | 0.10 | 0.14 | 0.20 | 0.29 | 0.41 | 0.57 | 0.74 | 0.89 | 0.98 | 0.97 | 0.91 | 0.82 | 0.79 |
| 7 | $S1b_{i}$ | 0.04 | 0.06 | 0.09 | 0.11 | 0.15 | 0.19 | 0.26 | 0.35 | 0.45 | 0.58 | 0.71 | 0.84 | 0.94 | 0.99 | 0.99 |
| 8 | $S1b_{ii}$ | 0.04 | 0.07 | 0.09 | 0.13 | 0.17 | 0.25 | 0.35 | 0.49 | 0.64 | 0.81 | 0.94 | 0.98 | 0.94 | 0.86 | 0.82 |
| 9 | $S1b_{iii}$ | 0.05 | 0.07 | 0.09 | 0.12 | 0.16 | 0.22 | 0.29 | 0.39 | 0.51 | 0.65 | 0.79 | 0.91 | 0.98 | 0.99 | 0.97 |
| 10 | $S1c_{i}$ | 0.05 | 0.07 | 0.09 | 0.12 | 0.16 | 0.21 | 0.29 | 0.39 | 0.51 | 0.65 | 0.79 | 0.91 | 0.98 | 1.00 | 0.98 |
| 11 | $S1c_{ii}$ | 0.05 | 0.07 | 0.09 | 0.11 | 0.14 | 0.18 | 0.25 | 0.32 | 0.41 | 0.52 | 0.65 | 0.78 | 0.90 | 0.97 | 0.99 |
| 12 | $S1c_{iii}$ | 0.05 | 0.07 | 0.09 | 0.11 | 0.15 | 0.19 | 0.26 | 0.34 | 0.44 | 0.58 | 0.71 | 0.83 | 0.93 | 0.98 | 0.98 |
| 13 | $S2a_{i}$ | 0.04 | 0.07 | 0.09 | 0.13 | 0.17 | 0.23 | 0.33 | 0.44 | 0.56 | 0.72 | 0.86 | 0.96 | 1.00 | 0.98 | 0.94 |
| 14 | $S2a_{ii}$ | 0.05 | 0.07 | 0.09 | 0.12 | 0.15 | 0.20 | 0.26 | 0.35 | 0.44 | 0.54 | 0.65 | 0.77 | 0.87 | 0.94 | 0.98 |
| 15 | $S2a_{iii}$ | 0.05 | 0.08 | 0.10 | 0.14 | 0.19 | 0.26 | 0.36 | 0.49 | 0.63 | 0.75 | 0.89 | 0.97 | 1.00 | 0.97 | 0.94 |
| 16 | $S2b_{i}$ | 0.05 | 0.08 | 0.12 | 0.18 | 0.26 | 0.38 | 0.54 | 0.72 | 0.88 | 0.98 | 0.98 | 0.92 | 0.83 | 0.76 | 0.76 |
| 17 | $S2b_{ii}$ | 0.04 | 0.07 | 0.09 | 0.12 | 0.15 | 0.21 | 0.28 | 0.37 | 0.48 | 0.62 | 0.75 | 0.87 | 0.96 | 1.00 | 0.99 |
| 18 | $S2b_{iii}$ | 0.05 | 0.07 | 0.09 | 0.12 | 0.17 | 0.23 | 0.31 | 0.42 | 0.55 | 0.70 | 0.83 | 0.94 | 0.99 | 1.00 | 0.97 |
| 19 | $S2c_{i}$ | 0.05 | 0.07 | 0.08 | 0.11 | 0.13 | 0.18 | 0.23 | 0.30 | 0.38 | 0.49 | 0.61 | 0.74 | 0.85 | 0.94 | 0.98 |
| 20 | $S2c_{ii}$ | 0.05 | 0.07 | 0.09 | 0.12 | 0.16 | 0.22 | 0.30 | 0.40 | 0.52 | 0.66 | 0.79 | 0.91 | 0.98 | 0.99 | 0.98 |
| 21 | $S2c_{iii}$ | 0.05 | 0.08 | 0.10 | 0.14 | 0.20 | 0.29 | 0.41 | 0.55 | 0.72 | 0.88 | 0.97 | 0.99 | 0.94 | 0.87 | 0.84 |
| 22 | $S3a_{i}$ | 0.04 | 0.06 | 0.08 | 0.11 | 0.15 | 0.20 | 0.27 | 0.36 | 0.46 | 0.60 | 0.74 | 0.87 | 0.96 | 1.00 | 0.98 |
| 23 | $S3a_{ii}$ | 0.03 | 0.06 | 0.08 | 0.09 | 0.11 | 0.15 | 0.19 | 0.26 | 0.32 | 0.42 | 0.51 | 0.63 | 0.75 | 0.85 | 0.92 |
| 24 | $S3a_{iii}$ | 0.06 | 0.07 | 0.09 | 0.11 | 0.14 | 0.18 | 0.24 | 0.31 | 0.39 | 0.50 | 0.60 | 0.71 | 0.82 | 0.90 | 0.96 |
| 25 | $S3b_{i}$ | 0.04 | 0.07 | 0.09 | 0.12 | 0.16 | 0.21 | 0.29 | 0.39 | 0.50 | 0.63 | 0.76 | 0.88 | 0.96 | 0.99 | 0.99 |
| 26 | $S3b_{ii}$ | 0.02 | 0.06 | 0.08 | 0.09 | 0.11 | 0.15 | 0.19 | 0.25 | 0.31 | 0.39 | 0.47 | 0.57 | 0.66 | 0.76 | 0.85 |
| 27 | $S3b_{iii}$ | 0.04 | 0.06 | 0.08 | 0.10 | 0.12 | 0.17 | 0.23 | 0.30 | 0.39 | 0.52 | 0.65 | 0.78 | 0.90 | 0.97 | 0.99 |
| 28 | $S3c_{i}$ | 0.03 | 0.06 | 0.09 | 0.11 | 0.15 | 0.20 | 0.27 | 0.35 | 0.45 | 0.57 | 0.69 | 0.81 | 0.90 | 0.96 | 0.98 |
| 29 | $S3c_{ii}$ | 0.02 | 0.06 | 0.07 | 0.08 | 0.11 | 0.14 | 0.19 | 0.24 | 0.30 | 0.39 | 0.48 | 0.58 | 0.69 | 0.79 | 0.87 |
| 30 | $S3c_{iii}$ | 0.04 | 0.06 | 0.07 | 0.09 | 0.12 | 0.16 | 0.22 | 0.28 | 0.37 | 0.48 | 0.58 | 0.70 | 0.81 | 0.91 | 0.97 |

**Lampiran 2. Hasil Pengukuran Transmisi Suara (dB) Sampel di Berbagai Frekuensi**

| No. | Sampel | Transmisi suara (dB) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **200** | **300** | **400** | **500** | **600** | **700** | **800** | **900** | **1000** | **1100** | **1200** | **1300** | **1400** | **1500** | **1600** |
| 0 | Tanpa Sampel | **77.4** | **77.1** | **83.0** | **102.0** | **89.0** | **88.0** | **89.8** | **96.5** | **108.9** | **98.7** | **97.7** | **99.2** | **107.4** | **105.7** | **99.0** |
| 1 | $S0_{I}$ | 67.1 | 76.1 | 79.2 | 78.5 | 77.8 | 77.6 | 80.5 | 87.2 | 102.9 | 97.5 | 97.3 | 92.5 | 86.7 | 84.9 | 84.5 |
| 2 | $S0_{II}$ | 68.0 | 75.6 | 79.3 | 78.6 | 77.8 | 77.8 | 80.7 | 87.0 | 102.3 | 97.2 | 97.5 | 93.4 | 87.4 | 85.2 | 84.8 |
| 3 | $S0_{III}$ | 68.0 | 75.5 | 80.1 | 79.0 | 78.2 | 78.1 | 80.8 | 88.0 | 102.1 | 98.1 | 97.6 | 94.1 | 88.7 | 85.2 | 85.7 |
| 4 | $S1A_{I}$ | 64.5 | 66.2 | 68.6 | 76.9 | 75.4 | 76.5 | 79.3 | 86.2 | 101.8 | 97.3 | 94.8 | 88.1 | 83.9 | 83.0 | 82.7 |
| 5 | $S1A_{II}$ | 67.8 | 68.2 | 75.2 | 76.4 | 75.3 | 76.0 | 78.6 | 85.1 | 102.0 | 94.8 | 94.6 | 88.7 | 84.1 | 82.6 | 82.5 |
| 6 | $S1A_{III}$ | 68.2 | 66.8 | 75.6 | 76.6 | 69.9 | 75.7 | 78.4 | 85.2 | 99.6 | 97.3 | 93.5 | 86.9 | 82.8 | 81.9 | 81.6 |
| 7 | $S1B_{I}$ | 64.4 | 68.2 | 76.1 | 77.6 | 76.2 | 76.8 | 79.4 | 86.2 | 102.7 | 95.8 | 95.7 | 90.5 | 86.7 | 84.0 | 83.9 |
| 8 | $S1B_{II}$ | 68.3 | 69.1 | 77.0 | 78.1 | 77.3 | 77.7 | 80.4 | 87.1 | 102.4 | 97.6 | 97.1 | 91.6 | 86.4 | 84.5 | 84.2 |
| 9 | $S1B_{III}$ | 67.1 | 68.6 | 76.4 | 78.0 | 76.9 | 77.5 | 80.4 | 87.3 | 102.8 | 97.2 | 96.8 | 91.1 | 86.2 | 84.8 | 84.5 |
| 10 | $S1C_{I}$ | 67.9 | 68.6 | 75.5 | 76.5 | 76.0 | 76.5 | 79.2 | 85.9 | 90.3 | 97.1 | 96.5 | 89.8 | 84.9 | 83.4 | 83.3 |
| 11 | $S1C_{II}$ | 67.3 | 68.0 | 75.7 | 77.2 | 76.2 | 76.9 | 79.8 | 86.4 | 101.8 | 97.7 | 96.2 | 89.8 | 85.2 | 83.8 | 83.6 |
| 12 | $S1C_{III}$ | 67.6 | 68.3 | 76.4 | 77.6 | 76.7 | 77.3 | 80.0 | 86.8 | 102.2 | 98.1 | 97.3 | 90.9 | 86.0 | 84.5 | 84.2 |
| 13 | $S2A_{I}$ | 65.8 | 67.1 | 69.8 | 76.8 | 76.0 | 76.6 | 79.1 | 85.9 | 99.5 | 98.0 | 96.9 | 89.6 | 85.0 | 83.5 | 83.4 |
| 14 | $S2A_{II}$ | 64.7 | 68.0 | 75.6 | 77.8 | 75.8 | 77.0 | 79.5 | 86.6 | 103.0 | 98.2 | 95.8 | 89.2 | 84.7 | 83.6 | 83.4 |
| 15 | $S2A_{III}$ | 64.7 | 68.3 | 76.0 | 76.4 | 76.1 | 77.2 | 79.5 | 86.4 | 100.3 | 98.0 | 94.6 | 87.7 | 83.7 | 82.7 | 82.6 |
| 16 | $S2B_{I}$ | 66.7 | 66.4 | 66.4 | 77.6 | 76.8 | 77.2 | 80.1 | 86.7 | 102.9 | 97.8 | 96.1 | 89.1 | 84.6 | 83.4 | 83.2 |
| 17 | $S2B_{II}$ | 66.8 | 66.1 | 66.5 | 77.8 | 77.0 | 77.9 | 80.2 | 86.9 | 102.6 | 98.3 | 96.7 | 89.9 | 85.0 | 83.7 | 83.3 |
| 18 | $S2B_{III}$ | 67.8 | 67.1 | 66.1 | 77.0 | 76.8 | 76.9 | 79.7 | 86.1 | 99.8 | 98.6 | 96.9 | 89.6 | 84.9 | 83.5 | 83.3 |
| 19 | $S2C_{I}$ | 64.5 | 68.7 | 76.0 | 77.3 | 76.5 | 77.0 | 79.7 | 86.5 | 102.2 | 98.5 | 97.1 | 90.5 | 85.8 | 84.3 | 84.1 |
| 20 | $S2C_{II}$ | 67.1 | 67.6 | 75.4 | 77.2 | 76.2 | 76.8 | 79.6 | 86.5 | 101.9 | 97.9 | 96.5 | 90.0 | 85.1 | 83.8 | 83.6 |
| 21 | $S2C_{III}$ | 65.8 | 67.1 | 69.8 | 76.8 | 76.0 | 76.6 | 79.1 | 85.9 | 99.5 | 98.7 | 96.9 | 89.6 | 85.0 | 83.5 | 83.4 |
| 22 | $S3A_{I}$ | 65.9 | 66.7 | 75.8 | 77.0 | 76.5 | 77.1 | 79.6 | 86.4 | 99.8 | 98.1 | 97.3 | 90.7 | 83.1 | 84.1 | 83.9 |
| 23 | $S3A_{II}$ | 64.3 | 66.2 | 69.9 | 76.7 | 75.9 | 76.7 | 79.3 | 86.1 | 99.7 | 98.4 | 96.2 | 89.5 | 84.8 | 83.4 | 83.3 |
| 24 | $S3A_{III}$ | 64.4 | 67.7 | 75.9 | 77.4 | 76.6 | 77.0 | 79.8 | 86.6 | 101.9 | 98.3 | 97.5 | 90.6 | 85.6 | 84.1 | 83.9 |
| 25 | $S3B_{I}$ | 67.6 | 66.6 | 77.2 | 78.6 | 77.0 | 77.5 | 80.5 | 87.9 | 103.4 | 97.6 | 97.2 | 90.4 | 86.1 | 84.9 | 84.5 |
| 26 | $S3B_{II}$ | 67.7 | 66.3 | 77.5 | 78.6 | 77.3 | 77.6 | 80.5 | 87.8 | 103.2 | 97.4 | 97.3 | 91.6 | 86.6 | 85.2 | 84.8 |
| 27 | $S3B_{III}$ | 67.7 | 64.8 | 76.8 | 78.6 | 76.6 | 77.3 | 80.2 | 87.4 | 103.7 | 97.9 | 96.9 | 89.9 | 85.6 | 84.4 | 84.1 |
| 28 | $S3C_{I}$ | 64.3 | 67.4 | 75.6 | 77.7 | 76.5 | 77.2 | 79.9 | 86.8 | 102.3 | 97.9 | 96.8 | 90.3 | 85.6 | 84.1 | 83.8 |
| 29 | $S3C_{II}$ | 65.9 | 67.8 | 76.5 | 78.3 | 76.6 | 77.2 | 80.3 | 87.5 | 103.1 | 97.5 | 96.2 | 90.0 | 85.8 | 84.7 | 84.3 |
| 30 | $S3C_{III}$ | 67.8 | 66.4 | 76.6 | 78.6 | 76.6 | 77.1 | 80.2 | 87.6 | 97.5 | 96.6 | 96.6 | 89.9 | 85.4 | 84.4 | 84.1 |

**Lampiran 3. Hasil Perhitungan Kehilangan Transmisi Suara (dB) Sampel di Berbagai Frekuensi**

| No. | Sampel | Kehilangan Transmisi Suara (dB) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 |
| 1 | $S0_{I}$ | 10.4 | 1.0 | 3.8 | 23.5 | 11.3 | 10.4 | 9.2 | 9.3 | 6.0 | 1.2 | 0.3 | 6.7 | 20.7 | 20.8 | 14.5 |
| 2 | $S0_{II}$ | 9.4 | 1.5 | 3.6 | 23.4 | 11.2 | 10.2 | 9.0 | 9.5 | 6.7 | 1.5 | 0.2 | 5.7 | 20.1 | 20.5 | 14.2 |
| 3 | $S0_{III}$ | 9.4 | 1.6 | 2.8 | 23.0 | 10.9 | 10.0 | 9.0 | 8.6 | 6.8 | 0.6 | 0.1 | 5.1 | 18.8 | 20.5 | 13.4 |
| 1 | $S1A_{I}$ | 12.9 | 10.9 | 14.4 | 25.1 | 13.6 | 11.5 | 10.5 | 10.3 | 7.1 | 1.4 | 2.8 | 11.1 | 23.6 | 22.7 | 16.3 |
| 2 | $S1A_{II}$ | 9.6 | 8.9 | 7.8 | 25.6 | 13.7 | 12.0 | 11.2 | 11.4 | 6.9 | 3.9 | 3.1 | 10.5 | 23.3 | 23.1 | 16.5 |
| 3 | $S1A_{III}$ | 9.3 | 10.3 | 7.4 | 25.4 | 19.1 | 12.4 | 11.3 | 11.3 | 9.3 | 1.4 | 4.2 | 12.3 | 24.6 | 23.8 | 17.4 |
| 4 | $S1B_{I}$ | 13.1 | 8.9 | 6.9 | 24.4 | 12.9 | 11.3 | 10.3 | 10.4 | 6.2 | 2.9 | 1.9 | 8.7 | 20.7 | 21.7 | 15.1 |
| 5 | $S1B_{II}$ | 9.1 | 8.0 | 6.0 | 23.9 | 11.7 | 10.4 | 9.3 | 9.4 | 6.5 | 1.1 | 0.6 | 7.6 | 21.1 | 21.2 | 14.8 |
| 6 | $S1B_{III}$ | 10.3 | 8.5 | 6.6 | 23.9 | 12.1 | 10.6 | 9.3 | 9.2 | 6.1 | 1.5 | 0.9 | 8.1 | 21.2 | 20.9 | 14.5 |
| 7 | $S1C_{I}$ | 9.5 | 8.5 | 7.4 | 25.4 | 13.0 | 11.6 | 10.6 | 10.7 | 18.6 | 1.6 | 1.1 | 9.4 | 22.6 | 22.3 | 15.7 |
| 8 | $S1C_{II}$ | 10.1 | 9.1 | 7.2 | 24.7 | 12.8 | 11.1 | 10.0 | 10.2 | 7.1 | 1.0 | 1.4 | 9.4 | 22.2 | 21.9 | 15.4 |
| 9 | $S1C_{III}$ | 9.9 | 8.8 | 6.6 | 24.3 | 12.3 | 10.8 | 9.8 | 9.7 | 6.7 | 0.6 | 0.4 | 8.2 | 21.4 | 21.2 | 14.8 |
| 10 | $S2A_{I}$ | 11.6 | 10.0 | 13.2 | 25.2 | 13.0 | 11.5 | 10.6 | 10.6 | 9.4 | 0.7 | 0.8 | 9.5 | 22.4 | 22.1 | 15.6 |
| 11 | $S2A_{II}$ | 12.7 | 9.1 | 7.4 | 24.1 | 13.3 | 11.1 | 10.2 | 10.0 | 5.9 | 0.5 | 1.8 | 10.0 | 22.8 | 22.0 | 15.6 |
| 12 | $S2A_{III}$ | 12.8 | 8.8 | 7.0 | 25.6 | 13.0 | 10.9 | 10.2 | 10.1 | 8.6 | 0.7 | 3.0 | 11.5 | 23.8 | 23.0 | 16.4 |
| 13 | $S2B_{I}$ | 10.7 | 10.7 | 16.5 | 24.4 | 12.2 | 10.8 | 9.7 | 9.8 | 6.0 | 0.9 | 1.6 | 10.1 | 22.9 | 22.3 | 15.9 |
| 14 | $S2B_{II}$ | 10.6 | 11.0 | 16.5 | 24.2 | 12.1 | 10.2 | 9.6 | 9.6 | 6.3 | 0.4 | 0.9 | 9.3 | 22.4 | 22.0 | 15.7 |
| 15 | $S2B_{III}$ | 9.6 | 10.0 | 16.8 | 25.0 | 12.3 | 11.2 | 10.1 | 10.4 | 9.1 | 0.1 | 0.8 | 9.5 | 22.5 | 22.2 | 15.7 |
| 16 | $S2C_{I}$ | 12.9 | 8.4 | 6.9 | 24.7 | 12.6 | 11.0 | 10.1 | 10.0 | 6.8 | 0.2 | 0.5 | 8.7 | 21.7 | 21.3 | 14.9 |
| 17 | $S2C_{II}$ | 10.4 | 9.5 | 7.6 | 24.7 | 12.8 | 11.3 | 10.2 | 10.0 | 7.0 | 0.8 | 1.2 | 9.2 | 22.3 | 21.9 | 15.4 |
| 18 | $S2C_{III}$ | 11.6 | 10.0 | 13.2 | 25.2 | 13.0 | 11.5 | 10.6 | 10.6 | 9.4 | 0.0 | 0.8 | 9.5 | 22.4 | 22.1 | 15.6 |
| 19 | $S3A_{I}$ | 11.5 | 10.4 | 7.1 | 25.0 | 12.6 | 10.9 | 10.2 | 10.1 | 9.1 | 0.6 | 0.4 | 8.5 | 24.4 | 21.5 | 15.1 |
| 20 | $S3A_{II}$ | 13.2 | 10.9 | 13.1 | 25.2 | 13.1 | 11.3 | 10.5 | 10.4 | 9.2 | 0.3 | 1.5 | 9.7 | 22.6 | 22.3 | 15.7 |
| 21 | $S3A_{III}$ | 13.0 | 9.4 | 7.1 | 24.6 | 12.4 | 11.1 | 10.0 | 9.9 | 7.1 | 0.4 | 0.2 | 8.5 | 21.9 | 21.5 | 15.1 |
| 22 | $S3B_{I}$ | 9.8 | 10.5 | 5.8 | 23.3 | 12.0 | 10.6 | 9.3 | 8.7 | 5.5 | 1.1 | 0.5 | 8.8 | 21.3 | 20.8 | 14.5 |
| 23 | $S3B_{II}$ | 9.7 | 10.8 | 5.4 | 23.3 | 11.8 | 10.4 | 9.3 | 8.7 | 5.7 | 1.3 | 0.4 | 7.6 | 20.9 | 20.5 | 14.2 |
| 24 | $S3B_{III}$ | 9.7 | 12.3 | 6.1 | 23.3 | 12.4 | 10.8 | 9.6 | 9.2 | 5.2 | 0.8 | 0.8 | 9.2 | 21.8 | 21.3 | 14.9 |
| 25 | $S3C_{I}$ | 13.1 | 9.7 | 7.3 | 24.3 | 12.5 | 10.8 | 9.9 | 9.7 | 6.6 | 0.8 | 0.8 | 8.8 | 21.9 | 21.6 | 15.2 |
| 26 | $S3C_{II}$ | 11.5 | 9.3 | 6.5 | 23.6 | 12.5 | 10.9 | 9.5 | 9.0 | 5.8 | 1.2 | 1.5 | 9.2 | 21.6 | 21.0 | 14.8 |
| 27 | $S3C_{III}$ | 9.6 | 10.7 | 6.3 | 23.4 | 12.5 | 10.9 | 9.6 | 8.9 | 11.4 | 2.1 | 1.1 | 9.3 | 22.1 | 21.3 | 14.9 |

**Lampiran 5. Data Input Koefisien Penyerapan Suara Untuk Uji ANOVA**

| No | X1 | X2 | Y1 |
|---|---|---|---|
| 1 | -1 | -1 | 0.45 |
| 2 | -1 | -1 | 0.45 |
| 3 | -1 | -1 | 0.53 |
| 4 | -1 | 0 | 0.45 |
| 5 | -1 | 0 | 0.51 |
| 6 | -1 | 0 | 0.48 |
| 7 | -1 | 1 | 0.48 |
| 8 | -1 | 1 | 0.43 |
| 9 | -1 | 1 | 0.45 |
| 10 | 0 | -1 | 0.50 |
| 11 | 0 | -1 | 0.43 |
| 12 | 0 | -1 | 0.52 |
| 13 | 0 | 0 | 0.56 |
| 14 | 0 | 0 | 0.47 |
| 15 | 0 | 0 | 0.50 |
| 16 | 0 | 1 | 0.41 |
| 17 | 0 | 1 | 0.48 |
| 18 | 0 | 1 | 0.54 |
| 19 | 1 | -1 | 0.46 |
| 20 | 1 | -1 | 0.36 |
| 21 | 1 | -1 | 0.40 |
| 22 | 1 | 0 | 0.47 |
| 23 | 1 | 0 | 0.33 |
| 24 | 1 | 0 | 0.42 |
| 25 | 1 | 1 | 0.44 |
| 26 | 1 | 1 | 0.33 |
| 27 | 1 | 1 | 0.39 |

**Lampiran 6. Data Input Kehilangan Transmisi Suara Untuk Uji ANOVA**

| No | X1 | X2 | Y1 |
|---|---|---|---|
| 1 | -1 | -1 | 13.0 |
| 2 | -1 | -1 | 12.5 |
| 3 | -1 | -1 | 13.3 |
| 4 | -1 | 0 | 11.7 |
| 5 | -1 | 0 | 10.7 |
| 6 | -1 | 0 | 10.9 |
| 7 | -1 | 1 | 12.5 |
| 8 | -1 | 1 | 11.6 |
| 9 | -1 | 1 | 11.0 |
| 10 | 0 | -1 | 12.4 |
| 11 | 0 | -1 | 11.8 |
| 12 | 0 | -1 | 12.3 |
| 13 | 0 | 0 | 12.3 |
| 14 | 0 | 0 | 12.1 |
| 15 | 0 | 0 | 12.3 |
| 16 | 0 | 1 | 11.4 |
| 17 | 0 | 1 | 11.6 |
| 18 | 0 | 1 | 12.4 |
| 19 | 1 | -1 | 11.8 |
| 20 | 1 | -1 | 12.6 |
| 21 | 1 | -1 | 11.5 |
| 22 | 1 | 0 | 10.8 |
| 23 | 1 | 0 | 10.6 |
| 24 | 1 | 0 | 11.2 |
| 25 | 1 | 1 | 11.5 |
| 26 | 1 | 1 | 11.2 |
| 27 | 1 | 1 | 11.6 |