

REFERENCES

- Adenekan, R.A.G., Yoshida, K.T., Benyoucef, A., Reyes, A.G., Adenekan, A.E., Okamura, A.M., Nunez, C.M., 2024. Reliability of Smartphone-Based Vibration Threshold Measurements.
- Allan, J.J., 2004. Computers in railways IX. WIT Press.
- Ari Sandy, M., 2025. Evaluation of Transportation Comfort Level Based on Vibration Analysis on Passenger Seats.
- Azzoug, A., Kaewunruen, S., 2017. Ridecomfort: A development of crowdsourcing smartphones in measuring train ride quality. *Front Built Environ* 3. <https://doi.org/10.3389/fbuil.2017.00003>
- Carlbom, P., 2000. Railway Technology Carbody and Passengers in Rail Vehicle Dynamics.
- CEN-CENELEC, 2025. Enhancing Railway Passenger Ride Comfort with EN 12299:2024 [WWW Document]. URL Enhancing Railway Passenger Ride Comfort with EN 12299:2024 (diakses 8.18.25).
- Chen, J., Chen, R., Wang, Ping, Xu, J., An, B., Yang, F., Sun, J., Wang, Pu, 2024. Wheel-Rail impact and vibration characteristic frequencies at High-Speed railway turnouts. *Mech Syst Signal Process* 218. <https://doi.org/10.1016/j.ymssp.2024.111537>
- Chen, Y., Feng, Q., Liu, Q., 2025. Experimental study on the train-induced vibration characteristics in the over-track buildings of metro depots. *Journal of Building Engineering* 111. <https://doi.org/10.1016/j.jobbe.2025.113523>
- Do, N.T., Abdulrazagh, P.H., Gül, M., Hendry, M.T., Roghani, A., Toma, E., 2020. Evaluating passenger railway ride quality over long distances using smartphones, dalam: 2020 Joint Rail Conference, JRC 2020. American Society of Mechanical Engineers (ASME). <https://doi.org/10.1115/JRC2020-8093>
- Dumitriu, M., Stănică, D.I., 2021. Study on the evaluation methods of the vertical ride comfort of railway vehicle—mean comfort method and sperling's method. *Applied Sciences (Switzerland)* 11. <https://doi.org/10.3390/app11093953>
- EN 12299, 2009. Railway applications - ride comfort for passengers - measurement and evaluation. British Standards Policy and Strategy Committee.
- Gonzalo, A.P., 2023. Investigation of The Effects of Railway Track Quality on Passenger Comfort Using Onboard Inertial Systems.
- Google, 2025. Route Map of Jatinegara-Bekasi [WWW Document]. URL <https://www.google.com/maps/dir/Jatinegara/Klender/Stasiun+Buaran/STASIUN+KLENDER+BARU+near/Cakung/Kranji/Stasiun+Bekasi/@-6.2254908,106.9234067,7377m/data=!3m1!1e3!4m4!4m45!1m5!1m1!1s0x2e69f481e56bd3c3:0x5e1605686ffcb0fe!2m2!1d106.8702903!2d-6.2149238!1m5!1m1!1s0x2e69f4a5a0f1df47:0x256f95253d9a3a62!2m2!1d106.89942!2d-6.21333!1m5!1m1!1s0x2e698b63484615a1:0x51a7cdc880d4f9ed!2m2!1d106.9232792!>

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w%3D%3D (diakses 12.4.25).

- Griffin, M.J., 2007. Predicting The Feeling of Vibration In Buildings, Proceedings of the Institute of Acoustics.
- Guo, X., Liu, J., Cui, R., 2024. Research on Train-Induced Vibration of High-Speed Railway Station with Different Structural Forms. *Materials* 17. <https://doi.org/10.3390/ma17174387>
- Hou, X., Gan, M., Zhang, J., Zhao, S., Ji, Y., 2023. Vehicle ride comfort optimization in the post-braking phase using residual reinforcement learning. *Advanced Engineering Informatics* 58. <https://doi.org/10.1016/j.aei.2023.102198>
- ISO-2631, 1997. Mechanical vibration and shock — Evaluation of human exposure to whole-body vibration.
- Jiang, Y., Chen, B.K., Thompson, C., 2019. A comparison study of ride comfort indices between Sperling's method and EN 12299. *International Journal of Rail Transportation* 7, 279–296. <https://doi.org/10.1080/23248378.2019.1616329>
- Kufver, B., 2022. Björn Kufver 1.
- Li, Y., Zeng, D., Wei, X., Hu, X., Wang, K., 2025. Analysis of the Impact of Frog Wear on the Wheel–Rail Dynamic Performance in Turnout Zones of Urban Rail Transit Lines. *Lubricants* 13. <https://doi.org/10.3390/lubricants13070317>
- Liu, X.Z., Li, Z.W., Wu, J., Song, C.J., Xiao, J.H., 2022. Correlation Analysis between Rail Track Geometry and Car-Body Vibration Based on Fractal Theory. *Fractal and Fractional* 6. <https://doi.org/10.3390/fractalfract6120727>
- Milosevic, M.D.G., Pålsson, B.A., Nissen, A., Nielsen, J.C.O., Johansson, H., 2022. Condition Monitoring of Railway Crossing Geometry via Measured and Simulated Track Responses. *Sensors* 22. <https://doi.org/10.3390/s22031012>
- Montenegro, P.A., Ribeiro, D., Ortega, M., Millanes, F., Goicolea, J.M., Zhai, W., Calçada, R., 2022. Impact of the train-track-bridge system characteristics in the runnability of high-speed trains against crosswinds - Part II: Riding comfort. *Journal of Wind Engineering and Industrial Aerodynamics* 224. <https://doi.org/10.1016/j.jweia.2022.104987>
- Moody, J.C., t.t. Critical Speed Analysis of Railcars and Wheelsets on Curved and Straight Track Recommended Citation.



Ismail, S.M., Mohd Yunos, M.N.A., Bin, T.Y., 2017. A Comparison Study on the Assessment of Ride Comfort for LRT Passengers, dalam: IOP Conference Series: Materials Science and Engineering. Institute of Physics Publishing. <https://doi.org/10.1088/1757-899X/226/1/012039>

Network Rail, 2024. New Measurement Train (NMT) monitors and records track condition information [WWW Document]. URL New Measurement Train (NMT) monitors and records track condition information (diakses 8.18.25).

Nitish, Singh, A.K., 2024. Dynamic modeling and ride comfort evaluation of railway vehicle under random track irregularities: A case study of a Linke-Hofmann-Busch coach. *Journal of Engineering Research (Kuwait)* 12, 984–993. <https://doi.org/10.1016/j.jer.2023.08.017>

Novillo, G., Rivera, N., Soto-Ocampo, C.R., Mera, J.M., 2022. ANALYSIS OF TRAM COMFORT USING THE UNE EN 12299:2010 STANDARD AND SPERLING METHOD (WZ), dalam: WIT Transactions on the Built Environment. WITPress, hlm. 3–13. <https://doi.org/10.2495/CR220011>

Peng, Y., Zhou, J., Fan, C., Wu, Z., Zhou, W., Sun, D., Lin, Y., Xu, D., Xu, Q., 2022. A review of passenger ride comfort in railway: assessment and improvement method. *Transportation Safety and Environment*. <https://doi.org/10.1093/tse/tdac016>

Reetz, S., Najeh, T., Lundberg, J., Groos, J., 2024. Analysis of Local Track Discontinuities and Defects in Railway Switches Based on Track-Side Accelerations. *Sensors* 24. <https://doi.org/10.3390/s24020477>

Rodríguez, A., Sañudo, R., Miranda, M., Gómez, A., Benavente, J., 2021. Smartphones and tablets applications in railways, ride comfort and track quality. *Transition zones analysis. Measurement (Lond)* 182. <https://doi.org/10.1016/j.measurement.2021.109644>

RSSB, 2020. A Better, Safer Railway Future Costs for Hydrogen and Battery Power for Traction.

Shannon, D., Rizzi, L., Murphy, F., Mullins, M., 2020. Exploring the price of motor vehicle collisions – A compensation cost approach. *Transp Res Interdiscip Perspect* 4. <https://doi.org/10.1016/j.trip.2020.100097>

Silva, P., Mendes, J., Seabra, E., Pratas, P., 2023. Railways Passenger Comfort/ Discomfort: Objective Evaluation.

Sugiono, S., Oktavianty, O., Sulistyarini, D.H., Nugroho, W.S., Wiryawan, E., Prastawa, H., Susanto, N., Widyaningrum, R., Dewi, R.S., 2021. Analysis of Train Passenger Comfort Related to the Vibration and Heat It Creates.

Wawryszczuk, R., Kardas-Cinal, E., 2022. Investigation of passenger ride comfort in selected means of transport. *WUT Journal of Transportation Engineering* 135, 17–29. <https://doi.org/10.5604/01.3001.0016.2493>

Wawryszczuk, R., Kardas-Cinal, E., Lejk, J., Sokołowski, M., 2023. Methods of Passenger Ride Comfort Evaluation—Tests for Metro Cars. *Sensors* 23. <https://doi.org/10.3390/s23125741>



West Midlands Railway, 2025. Class 730 Fleet of West Midlands Railway [WWW Document].

URL <https://www.westmidlandsrailway.co.uk/travel-information/whats-new/new-trains/class-730-fleet> (diakses 8.25.25).

Wikimedia, 2025. KCJB Feeder Train [WWW Document]. URL https://en.wikipedia.org/wiki/KCJB_Feeder_Train (diakses 8.25.25).

Wikipedia, 2025a. Kereta rel listrik JR East seri 205 [WWW Document]. URL https://id.wikipedia.org/wiki/Kereta_rel_listrik_JR_East_seri_205 (diakses 8.26.25).

Wikipedia, 2025b. Locomotive CC 206 [WWW Document]. URL https://id.wikipedia.org/wiki/Lokomotif_CC206 (diakses 8.25.25).

Wu, K., Liu, Z., Ding, Q., Shackleton, P., Cattley, R., Gu, F., Ball, A.D., 2021. Vibration responses of rotor systems in diesel multiple units under dynamic spatial misalignments and base motions. *J Sound Vib* 492. <https://doi.org/10.1016/j.jsv.2020.115817>

Yadav, O.P., Vyas, N.S., 2023. The influence of AAR coupler features on estimation of in-train forces. *Railway Engineering Science* 31, 233–251. <https://doi.org/10.1007/s40534-022-00297-8>

Zhai, L., Wan, H., Sun, S., 2023. Dynamic interactions of tram-turnout coupling system in embedded turnout area. *Journal of Vibroengineering* 25, 1342–1352. <https://doi.org/10.21595/jve.2023.23203>