

# LIST OF PUBLICATIONS ON DESIGN METHODS FOR APPLICATIONS OF GEOSYNTHETICS: DRAINS, LEAKAGE

**J.P. GIROUD**

- Giroud, J.P., 1973, "L'étanchéité des retenues d'eau par feuilles déroulées", *Annales de l'ITBTP*, 312, TP 161, Décembre 1973, pp. 94-112. (in French)
- Auriault, J.L., Cordary, D., Giroud, J.P. & Gourc, J.P., 1977, "Etude théorique du rôle des drains textiles dans la consolidation des remblais", *Proceedings of the International Conference on the Use of Fabrics in Geotechnics*, Session 7, Paris, Avril 1977, pp. 273-278. (in French)
- Auriault, J.L., Cordary, D., Giroud, J.P., & Gourc, J.P., 1977, "Commentaires sur l'étude théorique du rôle des drains textiles dans la consolidation des remblais", *Proceedings of the International Conference on the Use of Fabrics in Geotechnics*, Volume III, Paris, Avril 1977, pp. 85-86, 89. (in French)
- Giroud, J.P., 1981, "Designing with Geotextiles", *Matériaux et Constructions*, Vol. 14, No. 82, (July-August 1981), pp. 257-272.
- Giroud, J.P., 1983, "Geotextile Drainage Layers for Soil Consolidation", *Civil Engineering for Practicing and Design Engineers*, Pergamon Press, USA, Volume II, pp. 275-295.
- Giroud, J.P. & Bonaparte, R., 1984, "Waterproofing and Drainage: Geomembranes and Synthetic Drainage Layers", *Proceedings of the Second International Symposium on Plastic and Rubber Waterproofing in Civil Engineering*, Vol. 1, Session 3A, Liege, Belgium, June 1984, pp. 3A.1.1-3A.1.6.
- Giroud, J.P., 1984, "Impermeability: The Myth and a Rational Approach", *Proceedings of the International Conference on Geomembranes*, Vol. 1, Denver, CO, USA, June 1984, pp. 157-162.
- Williams, N., Giroud, J.P., & Bonaparte, R., 1984, "Properties of Plastic Nets for Liquid and Gas Drainage Associated with Geomembranes", *Proceedings of the International Conference on Geomembranes*, Vol. 2, Denver, CO, USA, June 1984, pp. 399-404.
- Bonaparte, R., Williams, N., & Giroud, J.P., 1985, "Innovative Leachate Collection Systems for Hazardous Waste Containment Facilities", *Proceedings of the Geotechnical Fabrics Conference '85*, IFAI, Cincinnati, OH, USA, June 1985, pp. 9-34.
- Giroud, J.P., 1985, "Tomorrow's Designs for Geotextile Applications", *"Geotextile Testing and the Design Engineer"*, Fluet, J.E., Editor, ASTM STP 952, 1987, Proceedings of a symposium held in Los Angeles, California, USA, June 1985, pp. 145-158.
- Bonaparte, R., Beech, J.F., & Giroud, J.P., 1987, "*Background Document on Bottom Liner Performance in Double-Lined Landfills and Surface Impoundments*", EPA/530-SW-87-013, U.S. Environmental Protection Agency, Washington, DC, USA, April 1987, 350 p.
- Bonaparte, R., Giroud, J.P., Wallace, R.B., Ah-Line, C., & Prillaman, J.G., 1987, "*Background Document on Proposed Liner and Leak Detection Rule*", EPA/530-SW-87-015, U.S. Environmental Protection Agency, Washington, DC, USA, May 1987, 529 p.
- Giroud, J.P. & Bonaparte, R., 1989, "Leakage through Liners Constructed with Geomembranes, Part I: Geomembrane Liners", *Geotextiles & Geomembranes*, Vol. 8, No. 1, pp. 27-67.

- Giroud, J.P. & Bonaparte, R., 1989, "Leakage through Liners Constructed with Geomembranes, Part II: Composite Liners", *Geotextiles & Geomembranes*, Vol. 8, No. 2, pp. 71-111.
- Giroud, J.P., Khatami, A., & Badu-Tweneboah, K., 1989, "Evaluation of the Rate of Leakage through Composite Liners", *Geotextiles & Geomembranes*, Vol. 8, No. 4, pp. 337-340.
- Gross, B.A., Bonaparte, R., & Giroud, J.P., 1990, "Evaluation of Flow from Landfill Leakage Detection Layers", *Proceedings of the Fourth International Conference on Geotextiles, Geomembranes and Related Products*, Vol. 2, The Hague, The Netherlands, May 1990, pp. 481-486.
- Gross, B.A., Bonaparte, R., & Giroud, J.P., 1990, "Discussion of Evaluation of Flow from Landfill Leakage Detection Layers", *Proceedings of the Fourth International Conference on Geotextiles, Geomembranes and Related Products*, Vol. 3, The Hague, The Netherlands, May 1990, pp. 1095-1096.
- Giroud, J.P., Badu-Tweneboah, K., & Soderman, K.L., 1994, "Evaluation of Landfill Liners", *Proceedings of the Fifth International Conference on Geotextiles, Geomembranes and Related Products*, Singapore, September 1994, Vol. 3, pp. 981-986.
- Giroud, J.P., & Houlihan, M.F., 1995, "Design of Leachate Collection Layers", *Proceedings of the Fifth International Landfill Symposium*, Sardinia, Italy, October 1995, Vol. 2, pp. 613-640.
- Bonaparte, R., & Giroud, J.P., 1996, "Waste Containment Systems for Pollution Control: Part II-Hydraulic Design and Performance", *Proceedings, NATO Advanced Study Institute Series, Recent Advances in Ground-Water Pollution Control and Remediation*, Kluwer Academic Publishers, The Netherlands, pp. 437-478.
- Giroud, J.P., Gross, B.A., Bonaparte, R., & McKelvey, J.A., 1997, "Leachate Flow in Leakage Collection Layers Due to Defects in Geomembrane Liners", *Geosynthetics International*, Special Issue on Liquid Migration Control Using Geosynthetic Liner Systems, Vol. 4, Nos. 3-4, pp. 215-292.
- Giroud, J.P., Khire, M.V., & Soderman, K.L., 1997, "Liquid Migration Through Defects in a Geomembrane Overlain and Underlain by Permeable Media", *Geosynthetics International*, Special Issue on Liquid Migration Control Using Geosynthetic Liner Systems, Vol. 4, Nos. 3-4, pp. 293-321. (Errata, 1999, Vol.6, No. 1, p 69)
- Giroud, J.P., Khire, M.V., & McKelvey, J.A., 1997, "Rate of Leachate Migration Through a Defect in a Geomembrane Underlain by a Saturated Permeable Medium", *Geosynthetics International*, Special Issue on Liquid Migration Control Using Geosynthetic Liner Systems, Vol. 4, Nos. 3-4, pp. 323-334.
- Giroud, J.P., 1997, "Equations for Calculating the Rate of Liquid Migration Through Composite Liners Due to Geomembrane Defects", *Geosynthetics International*, Special Issue on Liquid Migration Control Using Geosynthetic Liner Systems, Vol. 4, Nos. 3-4, pp. 335-348.
- Giroud, J.P., King, T.D., Sanglerat, T.R., Hadj-Hamou, T., & Khire, M.V., 1997, "Rate of Liquid Migration Through Defects in a Geomembrane Placed on a Semi-Permeable Medium", *Geosynthetics International*, Special Issue on Liquid Migration Control Using Geosynthetic Liner Systems, Vol. 4, Nos. 3-4, pp. 349-372.
- Giroud, J.P., Soderman, K.L., & Badu-Tweneboah, K., 1997, "Optimal Configuration of a Double Liner System Including a Geomembrane Liner and a Composite Liner", *Geosynthetics International*, Special Issue on Liquid Migration Control Using Geosynthetic Liner Systems, Vol. 4, Nos. 3-4, pp. 373-389.
- Giroud, J.P., Badu-Tweneboah, K., & Soderman, K.L., 1997, "Comparison of Leachate Flow Through Compacted Clay Liners and Geosynthetic Clay Liners in Landfill Liner Systems", *Geosynthetics International*, Special Issue on Liquid Migration Control Using Geosynthetic Liner Systems, Vol. 4, Nos. 3-4, pp. 391-431.
- Giroud, J.P., Houlihan, M.F., Bachus, R.C., & Qureshi, S., 1998, "Clogging Potential of Geosynthetic Leachate Collection Layers by Fine Particles from Soil Protective Layers", *Proceedings of the Sixth International Conference on Geosynthetics*, Vol. 1, Atlanta, Georgia, USA, March 1998, pp. 185-190.
- Giroud, J.P., Soderman, K.L., Khire, M.V., & Badu-Tweneboah, K., 1998, "New Developments in Landfill Liner Leakage Evaluation", *Proceedings of the Sixth International Conference on Geosynthetics*, Vol. 1, Atlanta, Georgia, USA, March 1998, pp. 261-268.

- Giroud, J.P., Zornberg, J.G., & Zhao, A., 2000, "Hydraulic Design of Geosynthetic and Granular Liquid Collection Layers", *Geosynthetics International*, Special Issue on Liquid Collection Systems, Vol. 7, Nos. 4-6, pp. 285-380.
- Giroud, J.P., Zhao, A., & Bonaparte, R., 2000, "The Myth of Hydraulic Transmissivity Equivalency Between Geosynthetic and Granular Liquid Collection Layers", *Geosynthetics International*, Special Issue on Liquid Collection Systems, Vol. 7, Nos. 4-6, pp. 381-401.
- Giroud, J.P., Zhao, A., & Richardson, G.N., 2000, "Effect of Thickness Reduction on Geosynthetic Hydraulic Transmissivity", *Geosynthetics International*, Special Issue on Liquid Collection Systems, Vol. 7, Nos. 4-6, pp. 433-452.
- Giroud, J.P., Zornberg, J.G., & Beech, J.F., 2000, "Thickness of Liquid in Geosynthetic and Granular Liquid Collection Layers Comprising Two Sections With Different Slopes", *Geosynthetics International*, Special Issue on Liquid Collection Systems, Vol. 7, Nos. 4-6, pp. 453-489.
- Giroud, J.P. & Zhao, A., 2000, "Design of Liquid Collection Layer With Radial Flow", *Geosynthetics International*, Special Issue on Liquid Collection Systems, Vol. 7, Nos. 4-6, pp. 491-527.
- Giroud, J.P., & Soderman, K.L., 2000, "Criterion for Acceptable Bentonite Loss from a GCL Incorporated into a Liner System", *Geosynthetics International*, Special Issue on Liquid Collection Systems, Vol. 7, Nos. 4-6, pp. 529-581.
- Giroud, J.P., Palmer, B., & Dove, J.E., 2000, "Calculation of Flow Velocity in Pipes as a Function of Flow Rate", *Geosynthetics International*, Special Issue on Liquid Collection Systems, Vol. 7, Nos. 4-6, pp. 583-600.
- Giroud, J.P., & Bonaparte, R., 2001, "Geosynthetics in Liquid-Containing Structures", Chapter 26, pp 789-824, in *Geotechnical and Geoenvironmental Engineering Handbook*, R.K. Rowe, Editor, Kluwer Academic Publishers, 1088 p.
- Richardson, G.N., Giroud, J.P., & Zhao, A., 2002, "Lateral Drainage Update – Part 1", Designers Forum, *Geotechnical Fabrics Report*, IFAI, Roseville, Minnesota, USA, January/February 2002, Vol. 20, No. 1, pp. 12-17.
- Richardson, G.N., Giroud, J.P., & Zhao, A., 2002, "Lateral Drainage Update – Part 2", Designers Forum, *Geotechnical Fabrics Report*, IFAI, Roseville, Minnesota, USA, March 2002, Vol. 20, No. 2, pp. 18-21.
- Giroud, J.P., & Touze-Foltz, N., 2003, "Geomembranes for Landfills", *Geosynthetics International*, Vol. 10, No. 4, pp. 124-133.
- Touze-Foltz, N., & Giroud, J.P., 2003, "Empirical equations for calculating the rate of liquid flow through composite liners due to geomembranes defects", *Geosynthetics International*, Vol. 10, No. 6, pp. 215-233.
- Giroud, J.P., Zhao, A., Tomlinson, H.M., & Zornberg, J.G., 2004, "Liquid flow equations for drainage systems composed of two layers including a geocomposite", *Geosynthetics International*, Vol. 11, No. 1, pp. 43-58.
- Giroud, J.P., & Daniel, D.E., 2004, "Liquid migration in an encapsulated bentonite layer due to geomembrane defects", *Geosynthetics International*, Special Issue on Geosynthetic Clay Liners, Vol. 11, No. 4, pp. 311-329.
- Giroud, J.P., Thiel, R.S., & Kavazanjian, E., 2004, "Hydrated area of a bentonite layer encapsulated between two geomembranes", *Geosynthetics International*, Special Issue on Geosynthetic Clay Liners, Vol. 11, No. 4, pp. 330-354.
- Giroud, J.P., & Touze-Foltz, N., 2005, "Equations for calculating the rate of liquid flow through geomembrane defects of uniform width and finite or infinite length", *Geosynthetics International*, Vol. 12, No. 4, pp. 191-204.
- Touze-Foltz, N., & Giroud, J.P., 2005, "Empirical equations for calculating the rate of liquid flow through composite liners due to large circular defects in the geomembrane", *Geosynthetics International*, Vol. 12, No. 4, pp. 205-207.
- Zhao, A., & Giroud, J.P., 2006, "Use of composite strips in leachate collection systems", *Proceedings of the 8<sup>th</sup> International Conference on Geosynthetics*, Yokohama, Japan, September 2006, Vol. 1, pp. 317-320.
- Thiel, R.S., & Giroud, J.P., 2011, "Important Considerations for Leakage Control of Exposed Geomembrane-Lined Ponds". *Proceedings of 13th International Waste Management and Landfill Symposium*, Sardinia 2011, Italy, 10 p.

- Giroud, J.P., Gourc, J.P., & Kavazanjian, E., 2012, "Effect of flow boundaries on two physical characteristics of geosynthetic drains", *Geosynthetics International*, Vol. 19, No. 2, pp. 147-159.
- Giroud, J.P., Gourc, J.P., & Kavazanjian, E., 2012, "Laminar and non-laminar flow in geosynthetic and granular drains", *Geosynthetics International*, Vol. 19, No. 2, pp. 160-182.
- Gourc, J.P., Giroud, J.P., & Aubert, V., 2012, "Theoretical model for the hydraulic properties of geosynthetic drainage materials", *Geosynthetics International*, Vol. 19, No. 2, pp. 183-190.
- Giroud, J.P. & Kavazanjian, E., 2014, "Degree of Turbulence of Flow in Geosynthetic and Granular Drains", *J. Geotech. Geoenviron. Eng.*, ASCE, Vol. 140, No. 5, May, DOI: 10.1061/(ASCE)GT.1943-5606.0001086, pp. 06014001-1 - 06014001-5
- Giroud, J.P., & Gourc, J.P., 2014, "The first double geomembrane liner forty years later", *Proceedings of the 10th International Conference on Geosynthetics*, Berlin, 8 p.
- Peggs, I.D., & Giroud, J.P., 2014, "Action leakage rate for reservoir geomembrane liners", *Proceedings of the 10th International Conference on Geosynthetics*, Berlin, 10 p.
- Giroud, J.P., & Gourc, J.P., 2015, "The first double geomembrane liner forty years later – Part 1", *Geosynthetics Magazine*, Vol. 33, No. 1, February-March 2015, pp. 14-22.
- Giroud, J.P., & Gourc, J.P., 2015, "The first double geomembrane liner forty years later – Part 2", *Geosynthetics Magazine*, Vol. 33, No. 2, April-May 2015, pp. 20-26.
- Giroud, J.P., & Wallace, R.B., 2016, "Quantified Impact of Geomembrane Wrinkles on Leakage Through Composite Liners", GeoAmericas 2016, *Proceedings of the Third PanAmerican Conference on Geosynthetics*, Miami Beach, USA, April 2016, 10 p.
- Giroud, J.P., 2016, "Leakage Control using Geomembrane Liners", The Victor de Mello Lecture, *Soils and Rocks*, São Paulo, Brazil, Vol. 39, No. 3 September-December 2016, pp. 213-235. <https://doi.org/10.28927/SR.393213>
- Badu-Tweneboah, K., & Giroud, J.P., 2018, "Discussion of 'Leakage through Holes in Geomembranes below Saturated Tailings' by R. K. Rowe, P. Joshi, R.W.I. Brachman, & H. McLeod", *J. Geotech. Geoenviron. Eng.*, 10.1061/(ASCE)GT.1943-5606.0001606, 144(4), pp. 07018001-07018002.
- Gilson-Beck, A., & Giroud, J.P., 2022, "A Quantification of the Short-term Reliability of HDPE Geomembrane Seaming Methods", *Geosynthetics International*, Vol. 29, No. 4, pp. 337-341. <https://doi.org/10.1680/jgein.21.00041>
- Giroud, J.P. & Plusquellec, H., 2023, "Evaluation of concrete and geomembrane lining options for a canal in Egypt", *Geosynthetics International*, Vol. 30, No. 1, pp. 108-112. <https://doi.org/10.1680/jgein.22.00013>.