

Kurdistan Regional (KR) Government – Iraq  
Ministry of Higher Education and Scientific Research  
University of Duhok (UoD)



# **Ultra-high-performance fiber-reinforced concrete: Durability properties**

A Report

Prepared by

**Shaker M. A. Qaidi<sup>1</sup>**

*<sup>1</sup>Department of Civil Engineering, College of Engineering, University of Duhok, Duhok, KR-Iraq*

Reference Number: 0128

07-02-2022

Shaker Qaidi papers [[1-31](#)].

## References

1. Aisheh, Y.I.A., et al., *Influence of steel fibers and microsilica on the mechanical properties of ultra-high-performance geopolymer concrete (UHP-GPC)*. Case Studies in Construction Materials, 2022. **17**: p. e01245.
2. Aslam, F., et al., *Evaluating the influence of fly ash and waste glass on the characteristics of coconut fibers reinforced concrete*. Structural Concrete. **n/a**(n/a).
3. Aisheh, Y.I.A., et al., *Influence of polypropylene and steel fibers on the mechanical properties of ultra-high-performance fiber-reinforced geopolymer concrete*. Case Studies in Construction Materials, 2022: p. e01234.
4. Qaidi, S.M.A., et al., *Rubberized geopolymer composites: A comprehensive review*. Ceramics International, 2022.
5. Qaidi, S., *Behaviour of Concrete Made of Recycled Waste PET and Confined with CFRP Fabrics*. 2021.
6. Ahmed, H.U., et al., *Compressive strength of geopolymer concrete composites: a systematic comprehensive review, analysis and modeling*. European Journal of Environmental and Civil Engineering, 2022: p. 1-46.
7. He, X., et al., *Mine tailings-based geopolymers: A comprehensive review*. Ceramics International, 2022.
8. Shaker M.A. Qaidi, B.A.T., Abdullah M. Zeyad, Afonso R.G. de Azevedo, Hemn Unis Ahmed, Wael Emad, *Recycling of mine tailings for the geopolymers production: A systematic review*. Case Studies in Construction Materials, 2022.
9. Shaker M. A. Qaidi, B.A.T., Haytham F. Isleem, Afonso R.G. de Azevedo, Hemn Unis Ahmed, Wael Emad, *Sustainable utilization of red mud waste (bauxite residue) and slag for the production of geopolymer composites: A review*. Case Studies in Construction Materials, 2022.
10. Qaidi, S.M.A., et al., *Engineering properties of sustainable green concrete incorporating eco-friendly aggregate of crumb rubber: A review*. Journal of Cleaner Production, 2021: p. 129251.
11. Qaidi, S.M.A. and Y.S.S. Al-Kamaki, *State-of-the-Art Review: Concrete Made of Recycled Waste PET as Fine Aggregate*. Journal of Duhok University, 2021. **23**(2): p. 412-429.
12. Qaidi, S.M.A., *Ultra-high-performance fiber-reinforced concrete: Challenges*. 2022.
13. Qaidi, S.M.A., *Ultra-high-performance fiber-reinforced concrete: Applications*. 2022.
14. Qaidi, S.M.A., *Ultra-high-performance fiber-reinforced concrete: Cost assessment*. 2022.

15. Qaidi, S.M.A., *Ultra-high-performance fiber-reinforced concrete: Durability properties*. 2022.
16. Qaidi, S.M.A., *Ultra-high-performance fiber-reinforced concrete: Hardened properties*. 2022.
17. Qaidi, S.M.A., *Ultra-high-performance fiber-reinforced concrete: Fresh properties*. 2022.
18. Qaidi, S.M.A., *Ultra-high-performance fiber-reinforced concrete: Hydration and microstructure*. 2022.
19. Qaidi, S.M.A., *Ultra-high-performance fiber-reinforced concrete: Mixture design*. 2022.
20. Qaidi, S.M.A., *Ultra-high-performance fiber-reinforced concrete: Principles and raw materials*. 2022.
21. Qaidi, S.M.A., *PET-concrete confinement with CFRP*. 2021.
22. Qaidi, S.M.A., *PET-Concrete*. 2021.
23. Qaidi, S.M.A., *Behavior of Concrete Made of Recycled PET Waste and Confined with CFRP Fabrics*. 2021, College of Engineering, University of Duhok.
24. Mansi, A., et al. *The Impact of Nano Clay on Normal and High-Performance Concrete Characteristics: A Review*. in *IOP Conference Series: Earth and Environmental Science*. 2022. IOP Publishing.
25. Jawad Ahmad, F.A., Rebeca Martinez-Garcia, Jesús de-Prado-Gil, Shaker M. A. Qaidi, Ameni Brahmia, *Effects of waste glass and waste marble on mechanical and durability performance of concrete*. Scientific Reports, 2021. **11**(1): p. 21525.
26. Ibrahim Almeshal, M.M.A.-T., Shaker M. A. Qaidi, B.H. Abu Bakar, Bassam A. Tayeh, *Mechanical properties of eco-friendly cements-based glass powder in aggressive medium*. Materials Today: Proceedings, 2022(2214-7853).
27. Faraj, R.H., et al., *Performance of Self-Compacting Mortars Modified with Nanoparticles: A Systematic Review and Modeling*. Cleaner Materials, 2022(2772-3976): p. 100086.
28. Faraj, R.H., et al., *Cleaner Materials*.
29. Ahmed, S.N., et al., *Thermal conductivity and hardened behavior of eco-friendly concrete incorporating waste polypropylene as fine aggregate*. Materials Today: Proceedings, 2022.
30. Ahmed, H.U., et al., *Compressive strength of geopolymer concrete modified with nano-silica: Experimental and modeling investigations*. Case Studies in Construction Materials, 2022(2): p. e01036.
31. Ahmed, H.U., et al., *Compressive Strength of Sustainable Geopolymer Concrete Composites: A State-of-the-Art Review*. Sustainability, 2021. **13**(24): p. 13502.