

CURRICULUM VITAE – RIAAN COMBRINCK

PERSONAL INFORMATION

SURNAME : Combrinck
 FIRST NAMES : Riaan
 NATIONALITY : RSA Citizen
 LANGUAGES : Afrikaans and English (Both Excellent)
 CURRENT OCCUPATION : Senior Lecturer at Civil Engineering Department
 (Structural Division) of Stellenbosch University

QUALIFICATIONS

2004 : Matriculated at Grey College
 2008 : BEng cum laude (Civil) at Stellenbosch University
 2011 : MScEng cum laude (Civil) at Stellenbosch University
 2016 : PhD at Stellenbosch University

WORK AND TEACHING EXPERIENCE

2006 - 2007 : Vacation training at Ninham Shand Consulting Engineers
 2010 - 2012 : Part-time Lecturer at Stellenbosch University
 Subject: Building Materials 254
 2013 - : Lecturer at Stellenbosch University
 Subjects: Building Materials 254 (2013-current), Theory of Structures
 324 (2014), Postgraduate course on Cement based Materials (2014-
 current)
 2016 - : Senior Lecturer at Stellenbosch University
 Subjects: Building Materials 254 (2013-current), Postgraduate course
 on Cement based Materials (2014-current)

COMMITTEES

2013 - : Committee member of the Western Cape Branch of the Concrete
 Society of Southern Africa

GRANTS AND PROJECT FUNDING

2013 - 2015 : Thuthuka (NRF) and SubCom B (SU) funding with total budget of
 R 480 000 over three years
 2014 - : Part of Unit of Construction Materials (UCM), whom receives industry
 funding of around R 900 000 per year
 2017 - : Thuthuka (NRF) and SubCom B (SU) funding with total budget of
 R 183 000 per year

SCHOLARSHIPS AND AWARDS

- 2000 - 2004 : Dux scholar at Grey College
- 2005 - 2008 : Stellenbosch University Undergraduate Merit Bursary
- 2009 - 2012 : Stellenbosch University Postgraduate Merit Bursary
- 2009 : THRIP funded Master's Scholarship on Low Volume Fibre Reinforced Concrete at the Institute of Structural Engineering at Stellenbosch University
- 2010 : Innovation Master's Scholarship from NRF
- 2011 : Pretoria Portland Cement prize for Deserving Work in the field of Concrete Engineering, awarded by the Department of Civil Engineering of Stellenbosch University
- 2011-2012 : Wilhelm Frank Scholarship for Full-Time PhD study

INVITED PRESENTATIONS

- "Cracking of fresh concrete: The fundamentals of plastic settlement and plastic shrinkage cracking", February 2014, Annual General Meeting of the Western Cape Branch of the Concrete Society of Southern Africa, Cape Town, South Africa.

PUBLICATIONS

Dissertations

- Combrinck, R., 2011, "Plastic shrinkage cracking in conventional and low volume fibre reinforced concrete", Stellenbosch: University of Stellenbosch (MScEng-Thesis).
- Combrinck, R., 2016, "Cracking of Plastic Concrete in Slab-Like Elements", Stellenbosch: University of Stellenbosch (PhD-Thesis).

Journal articles

- R. Combrinck, W.P. Boshoff, 2012, "Investigation of Plastic Shrinkage Cracking in Conventional and Low Volume Fibre Reinforced Concrete", Journal of the Concrete Society of Southern Africa, Concrete Beton, Number 131, July 2012.
- R. Combrinck, W.P. Boshoff, 2013, "Typical plastic shrinkage cracking behaviour of concrete", Magazine of Concrete Research, Volume 65 Issue 8, March 2013.
- W.P. Boshoff, R. Combrinck, 2013, "Modelling the severity of plastic shrinkage cracking in concrete", Cement en Concrete Research, Volume 48 (34-29).
- Jo Lerch, HL Bester, AS van Rooyen, R Combrinck, WI de Villiers, WP Boshoff, 2017, "The effect of mixing on the performance of macro synthetic fibre reinforced concrete", Cement and Concrete Research. (Paper accepted and in Press)
- CM Odendaal, AJ Babafemi, R Combrinck, WI de Villiers, WP Boshoff, 2017, "Performance evaluation of locally available synthetic macro fibres in a single fibre pull-out test in concrete", SAICE Journal. (Paper accepted, to be published in 2017)

- R. Combrinck, L. Steyl, W.P. Boshoff, “Fundamentals of cracking in plastic concrete”, (Response to reviewer send and under review).
- R. Combrinck, W.P. Boshoff, “Tensile properties of plastic concrete and the influence of temperature and cyclic loading”, (Submitted to Cement and Concrete Composites).

Conference articles

- R. Combrinck, W.P. Boshoff, 2010, “Investigation of plastic shrinkage cracking in concrete”, 4th International Conference on Structural Engineering, Mechanics and Computation (SEMC), Cape Town, South Africa.
- R. Combrinck, W.P. Boshoff, 2011, “Investigation of the critical period for plastic shrinkage cracking”, *fib* International Workshop on Performance-Based Specifications for Concrete, Leipzig, Germany.
- J. Maritz, R. Combrinck, W.P. Boshoff, 2011, “Investigation of the behaviour of low-volume fibre reinforced concrete in the fresh state”, FIB International Workshop on Performance-Based Specifications for Concrete, Leipzig, Germany.
- W.P. Boshoff, R. Combrinck, J. Maritz, 2012, “A model for the prediction of plastic shrinkage cracking in concrete”, 3rd International Conference on Concrete Repair, Rehabilitation and Retrofitting (ICRRR), Cape Town, South Africa.
- R. Combrinck, W.P. Boshoff, 2012, “Theory for the early age plastic cracking behaviour of concrete”, 9th *fib* International PhD Symposium in Civil Engineering, Karlsruhe, Germany.
- R. Combrinck, W.P. Boshoff, 2012, “Influence of restraint on the early age cracking of concrete with and without fibres”, 8th RILEM International Symposium (BEFIB), Guimarães, Portugal.
- R. Combrinck, W.P. Boshoff, 2013, “The origin of plastic settlement cracking and the effect on re-vibration”, 5th International Conference on Structural Engineering, Mechanics and Computation (SEMC), Cape Town, South Africa.
- R. Combrinck, W.P. Boshoff, 2014, “Fundamentals of plastic settlement cracking in concrete”, International Conference on Construction Materials and Structures (ICCMATS), Johannesburg, South Africa.
- J.D. Dippenaar, W.P. Boshoff, R. Combrinck, 2014, “Initial study to determine the tensile material properties of fresh concrete”, International Conference on Construction Materials and Structures (ICCMATS), Johannesburg, South Africa.
- B.D. Le Roux, W.P. Boshoff, R. Combrinck, 2015, “Influence of admixtures on plastic shrinkage cracking of concrete”, Fifth International Conference on Construction Materials (ConMat), Whistler, Canada.
- L. Steyl, , W.P. Boshoff, R. Combrinck, 2016, “Proposed mould for the assessment of pure plastic shrinkage cracking”, International *fib* Symposium, Cape Town, South Africa.
- R. Combrinck, W.P. Boshoff, 2016, “Analytical model of the cracking of plastic concrete”, International *fib* Symposium, Cape Town, South Africa.

- R. Combrinck, L. Steyl, W.P. Boshoff, 2017, “Influence of depth on the cracking of plastic concrete”, Second International *RILEM* Conference on Early Age Cracking and Serviceability on Cement-based Materials and Structures, Brussels, Belgium.
- M.Y. Khan, J.T. Kolawole, W.P. Boshoff, R. Combrinck 2017, “Influence of relaxation and cyclic loading on the tensile material properties of plastic concrete”, Second International *RILEM* Conference on Early Age Cracking and Serviceability on Cement-based Materials and Structures, Brussels, Belgium.

STUDENT SUPERVISION

- Diederick Dippenaar, MEng cum laude, 2015, “Tensile properties of early age concrete and the experimental apparatus required for its determination”.
- Bernard Le Roux, MEng cum laude, 2016, “Influence of admixtures on the plastic shrinkage cracking of concrete”.
- Lourens Steyl, MEng cum laude, 2016, “Influence of depth and curing on the cracking of plastic concrete”.
- Nuraan Ebrahim, 2017, “Using superabsorbent polymers in high performance concrete to mitigate autogenous and plastic shrinkage without compromising the compression strength”.
- Yaseen Khan, Enrolled in 2016 for MEng to be completed in 2017, “Stress relaxation during the cracking of plastic concrete”.
- Michael Diekmann, Enrolled in 2017 for MEng to be completed in 2018, “Creating a low embodied carbon concrete with conventional concrete properties”.
- Humaira Fataar, Enrolled in 2017 for MEng to be completed in 2018, “ Fatigue behaviour of fibre reinforced concrete”.
- John Kolawole, Enrolled in 2017 for PhD to be completed in 2019, “Rheology, plastic cracking and viscoplastic behaviour of concrete”.

COMMERCIAL RESEARCH PROJECTS

2009	:	Project for fibre supplier – Involved in the testing of Poly-Ester Fibres for increased resistance against plastic shrinkage cracking
2012	:	Project for flooring contractor – Involved in the experimental and on-site investigation of the cracking of concrete pavements and prescribing possible mitigation methods
2014	:	Project for extender supplier – Involved in the testing of Diatomite as possible extender for Portland Cement
2014	:	Project for admixture supplier – Involved in the testing of setting times of an Roller Compacted Concrete for Clanwilliam dam
2015	:	Project for pavement contractor – Involved in the testing of a fibre reinforced pavement near Paarl
2016	:	Project for Burglar bar supplier – Involved in the testing of burglar bars

- 2016 -2017 : Project for Temporary works supplier – Involved in the testing of a temporary support system
- 2017 : Testing of paint film samples – Executed and completed entire project