

Juan M. Pereira

MAS Eng, MICT



Education

Master's Degree in Materials Engineering (MAS Eng): Universidad Politécnica de Madrid (UPM),
Specialisation: Special Concretes - 2011

BSc Engineering (5 years), Universidad Austral, Specialisation: Industrial Organisation - 2002

GPA: 8,35/10 - Cum Laude

German-Spanish Bilingual Bachelor, Instituto Ballester - 1997

Current Activities

Managing Director, Concrete Quality SLU. Spain. 2012 – present

- ✓ Self-owned company designing and commercialising software & monitoring systems for digitizing the construction industry, targeted at all parties involved with concrete mix design, production, distribution, placing and quality control.
- ✓ Find more information of the software at www.concrete-quality.com, it features:
 - A database for raw materials sampling and testing (cement, aggregates, SCMs, admixtures, etc.), including sieve analysis and a wide range of tests for each material type.
 - Quality control and complete traceability for concrete batches and samples, and all tests performed on concrete including test specimens
 - Mix design calculation with many different mix design methods, according to local standards or standard-independent. This module also provides recommendations according to the conditions of transport, placement, curing, etc. for a given concrete.
 - Statistical tools for analysis and control of concrete production: CUSUM, Coefficient of Variation, pivot tables, strengths histograms, evolution of strengths, slump, air content, etc. over time.
 - R&D management module to create studies and compare the performance of different mix designs, obtain the main relationship chart for batch book design, etc.
 - Reports for all sections mentioned above plus other features.
 - Users can share information within their company and with third parties, in order to receive technical advice and consulting with the software.
- ✓ Current business partnerships in the UK, USA, Canada, China, Russia, Spain, Australia
- ✓ Over 6000 registered users, with paying customers in all continents.
- ✓ The company also provides technical consulting services for customers of the software, assisting them on how to improve and optimise mix designs, quality control procedures, select raw materials suppliers, etc.

Director Technology & Materials, OSA Sustainable Architecture & Engineering. Spain & China.
2017 – present

- ✓ Partner at international consulting firm specialized in Sustainable Urbanism, Biopassive Architecture, Industrialized Construction and Digitalization of the construction industry.
- ✓ Responsible of the software and IoT business units:
 - Concrete Quality: software for concrete mix design and QA/QC
 - CDM monitoring system (<http://www.concrete-durability.com>): embedded sensors-based system for durability, maturity and curing control of concrete elements, based on state-of-the-art scientific expertise and developed by our company.
- ✓ Consulting expert for materials, mix design, and concrete technology.
- ✓ Consulting expert for precast factory design and implementation of QA/QC procedures and systems.
- ✓ Consulting expert for chemical admixtures for concrete and cement-based products.
- ✓ New technologies like 3D printing, Digital Twin life cycle management of structures and recycled materials, etc.

Patents

- ✓ **System for monitoring Durability and Service Life prediction** of concrete elements with embedded sensors.
- ✓ **Artificial Intelligence system for assessment and adjustment of concrete rheology** (slump) in the mixer truck.

Highlights in Consulting Jobs

IMERYS, Saudi Arabia. 2018

Support for international company producing Micrasil, a pozzolanic addition to improve durability of concrete mixes of all kinds. Solving durability issues to comply with RCPT targets.

China State Construction & Engineering Company. 2017-2018

Design and layout of production lines of new precast factory in Shenzhen, China, including benchmark for international equipment manufacturers for hollow core slabs and pre-slabs lines, columns, beams, TT beams, prestressed beams, reinforcement workshop.

FAST Metro Project, Riyadh, Saudi Arabia. 2016

Complete construction of lines 4, 5 & 6 of the Riyadh Metro. Working for ETE Readymix, main supplier of concrete with ~2 million cubic meters supply from 6 dedicated stations. Evaluation and selection of raw materials, mix design optimization to improve performance and reduce costs, implement new procedures for QA/QC, lab personnel training, etc. Develop new mix designs for special concretes: Shotcrete, fibre-reinforced concrete, high-performance SCC, etc.

Associations

Full Member (MICT), Institute of Concrete Technology, UK. 2016 – present

Obtained the full membership by merit of experience in the field of concrete technology and the development of the Concrete Quality software and consulting expertise.

Employment Background

Quality Manager, Prainsa Precast, Saudi Arabia. 2011 – 2012

- ✓ Managing quality system and quality control team at a heavy precast factory in Khobar, Eastern Province, Saudi Arabia. Spanish-Saudi joint venture between PRAINSA (Spain) and Eastern Cements (Saudi). Depending directly from the General Manager and interacting with Production, Purchasing, Erection and Engineering.
- ✓ A big part of the job was to adapt the parent company's quality management system to the conditions of this factory. Education and motivation of the workforce is the major challenge in Saudi Arabia.
- ✓ Manufactured products included:
 - Many different types of panels: plain concrete for industrial buildings decorated panels for housing (sandblasted, textured, etc.), including all small decorative elements.
 - Reinforced structural elements (3 production lines).
 - Pre-stressed structural elements (2 lines) including 35 m long beams for railroad bridges.
 - Post-tensioned elements: unique cement silo design for the expansion of the Eastern Cement factory storage capacity.
 - Hollow core slabs (4 long line beds).
- ✓ Optimisation and re-design of all mix designs used in the factory. Selection of admixtures to obtain a concrete to be placed with minimum vibration (almost SCC). Customized mix designs according to customer's specifications.
- ✓ In charge of 3 quality inspectors, 1 safety inspector, 2 batching plant operators, 2 lab technicians and supervising the repair and finishing team. Managed to reduce the number of repair employees from 60 to 12 in two months.

Technical Department Manager, Concrete Admixtures, MAPEI, Spain. 2008 – 2011.

- ✓ In charge of the technical assistance department, providing support for the sales team and interacting directly with customers for admixture trials and problem solving (ready-mix, light & heavy precast, etc.).
- ✓ Supervising a team of 1 technical assistant visiting customers, plus two lab technicians performing all R&D and CE marking tests. Decision maker for all equipment purchasing for the concrete laboratory.
- ✓ Product development and adaptation to the local market needs. Development of new admixture formulations. Introduction of new product lines in the market (underwater concrete, zero shrinkage concrete, rock stabilization with microcement injection, etc.).
- ✓ Training in concrete and admixtures technology for technical, laboratory and commercial staff.

- ✓ Received training in admixture technology and advanced concrete testing methods in the central lab in Milano, and a special training in underwater concrete at the company's subsidiary located in Norway.
- ✓ Performed numerous customized mix designs for customers, and developed my own method to assess the rheology of SCC based on a recording of the slump flow test. I was able to correlate the spread diameter over time with the plastic viscosity (μ) and the yield stress (τ_0) for the mix, which resulted in a very convenient and easy-to-understand way to compare different SCC mix designs and assess the change in rheology over time.
- ✓ Developed new admixture for micro-cement stabilization, which was later used for rock stabilization (injection) to watertight high-speed train (AVE) tunnels.

Technical assistant, CHRYSO, Spain. 2005 – 2008.

- ✓ Technical assistance and troubleshooting Support for customers in different markets: ready-mixed concrete, light and heavy precast, SCC, etc. for Spain and Portugal. Experience with cement production admixtures: chrome VI reducers, grinding aids, etc.
- ✓ Developed SCC with natural microfibers and performed fire resistance testing in cooperation with PRAINSA Precast and the Universidad Politécnica de Madrid (UPM). We were able to create a mix design that complied with all SCC requirements and with the same fire resistance (spalling time and mass loss) as a 150 mm slump concrete with PP fibres.
- ✓ Training and industrial tests with cement grinding aids, both to increase cement production and energy efficiency in the ball mill, as well as Chrome VI reduction agents.

Plant Manager, Ogerco Readymix, Spain. 2003 – 2005.

- ✓ Managing all aspects of a ready-mixed concrete operation: mix design, quality control and testing, jobsite troubleshooting, logistics, personnel, maintenance, purchases, etc. Designed and supervised the construction of an in-house testing lab for aggregates and concrete. Training for lab technicians.

Courses and Symposia

- ✓ 2022: Expert speaker at the Innovative Concrete Design & Application Summit, Berlin, Germany
- ✓ 2021: Keynote speaker at International e-Conference on Sustainable Development in Concrete Technology (ICSDCT), India ACI Chapter
- ✓ 2018: Speaker at Block Read Conference, Moscow
- ✓ 2016: Speaker at ASCMAE Symposium, Netherlands
- ✓ 2011: Cementitious materials hydration – XIII ICC
- ✓ 2011: Concrete Precast: Design, manufacturing and applications - EADIC
- ✓ 2009: Construction Commercial – MAZ
- ✓ 2008: Health and Safety in Construction (Basic) – MAZ
- ✓ 2007: XVII Major Studies in Construction course – IETCC
- ✓ 2007: Specialisation course in cement chemistry - IETCC
- ✓ 2006: VI ANFAH symposium



Languages

- ✓ Spanish (native)
- ✓ English (very fluent)
- ✓ German (high)
- ✓ French (medium)
- ✓ Italian (basic)

Information Technology

- ✓ .NET Programming, C#, Visual Basic, SQL, WPF, Angular
- ✓ AutoCAD
- ✓ Office: Word, Excel, PowerPoint, Prezi, etc.
- ✓ Video edition and graphic design
- ✓ Web design: WordPress

Personal Interests

- ✓ Science and technology
- ✓ Reading (sci-fi, fantasy, science history, economics)
- ✓ Music playing (drums)
- ✓ Physical activity (running, gym, rock climbing)