



SHORT CAREER DESCRIPTION PETER BUITELAAR

Peter Buitelaar has 38 years' technical, commercial and practical experience with Ultra High Performance Concrete in the business area's Wear Protection, Offshore and Civil Engineering and worked during the first years for two Dutch contractors and later for two Danish producers and suppliers of dry mixed UHPC.

Peter Buitelaar has great knowledge of the composition, application possibilities, production, processing, finishing and post-treatment of HPC and UHPC. In the last 25 years Peter Buitelaar wrote more than 60 articles, publications and proceedings regarding UHPC and UHPC applications and was an invited keynote speaker on the first International Symposium on Ultra High Performance Concrete in Kassel, Germany in 2004. Peter Buitelaar is very dedicated, communicative and precise.



Peter Buitelaar is committed to knowledge sharing and cooperation and is also very active in knowledge transfer and lectures. Important milestones, among others, in the career from Peter Buitelaar were the first applications of UHPC to strengthening piles and offshore platforms (resulting in large applications in this field later in 1990—1993 in Venezuela and in the offshore) and to renovate and strengthen industrial floors and pavements.

Peter Buitelaar has developed in 1999 in close cooperation with the Task Force of the Civil Engineering Division of the Ministry of Infrastructure and Water Management in the Netherlands (Rijkswaterstaat) an unique solution to strengthening the steel deck of orthotropic bridges with an Ultra Thin Hybrid Reinforced High Performance Concrete Overlay.

The successful application of this new revolutionary Ultra Thin Hybrid Reinforced High Performance Concrete Overlay on large orthotropic bridge decks in the Netherlands is not only solving the fatigue cracks but also extending the service life of the total construction by solving fatigue problems in specific deck details.

In close cooperation with the Civil Engineering Division of the Ministry of Infrastructure and Water Management in the Netherlands, Dutch contractors, Delft University of Technology and others, the Ultra Thin Hybrid Reinforced High Performance Concrete Overlay is successfully applied in the period 2003 - 2015 on 9 large orthotropic steel bridges (> 200,000 m²) and on 9 concrete viaducts in the Netherlands.

Peter Buitelaar developed in close cooperation with the parties involved also mechanical application (slipform paver) methods.



The same strengthening method has been investigated in Germany and it is so far the best alternative found for the strengthening of orthotropic steel bridge decks and is applied on several orthotropic steel bridge decks in Germany.

The Ultra Thin Hybrid Reinforced High Performance Concrete Overlay is used to renovate and strengthen harbor and airport pavements, industrial floors and pavements and roads.

In 2003 the project Kaag bridges (very slender prefabricated planks), developed by the team of the Civil Engineering Division of the Ministry of Infrastructure and Water Management in the Netherlands (Rijkswaterstaat) advised by and in close cooperation with Peter Buitelaar, won a special mention award from the Dutch Concrete Society.

Production of the very slender, 45 mm, prefabricated planks for a movable bridge in the highway (Class 60) was done by Hurks BV.

In 2013 Peter Buitelaar received a Dutch Concrete Award from the Dutch Concrete Society in the category Concrete Technology for his contribution to the Sustainable modular UHPFRC bridge the Netherlands and in 2014 he received from the fib (Fédération Internationale du Béton or International Federation for Structural Concrete) a special mention award in the category Outstanding Concrete Structures for his contribution during several years in the development and production of the sustainable modular bridge in Ultra High Performance Fibre Reinforced Concrete (C170/200) as designed and produced by FDN Engineering from the Netherlands.

Peter Buitelaar started his own consulting company in October 2013.

Peter Buitelaar is also writing his book "Ultra-Thin Overlays with Hybrid Reinforced High Performance Concrete and Hybrid Reinforced Ultra High Performance Concrete. An unique rehabilitation system for industrial floors, - pavements and bridges" in English.

In the period 2013 - 2018 Peter Buitelaar's actions resulted in the complete revocation of the incorrect granted patent "EP1623080 - SANDWICH PLATE-LIKE CONSTRUCTION" which was based on his strengthening method of orthotropic steel bridge decks to solve fatigue problems. The legal actions initiated by the Ministry of Infrastructure and Water Management and the complete revocation will keep the technology generally available for others. The Dutch Ministry of Infrastructure and Water Management is paid indirectly by the Dutch Tax payers and they, Rijkswaterstaat Ministry of Infrastructure and Water Management, always have had the principle that they will not patent innovations but share their information for the good of all people and all countries. This is a noble principle especially when you take for example flood control and other water related knowledge in account.

Peter Buitelaar | CONSULTANCY

Ookmeerweg 12

1068 ZX AMSTERDAM

The Netherlands

Mobile phone: +31 650827142

E-mail: peter@peter-buitelaar-consultancy.com



SELECTION PRESENTATIONS, PUBLICATIONS, PAPERS AND PROCEEDINGS



BUITELAAR, Peter (2023), *“Salute to Mr. Bache contribution”*. 1st China UHPC Technology Development & Innovative Application Conference. 2th - 4th March 2023. Foshan City, Guangdong Province, China.



Strengthening of OSD with UHPC: Introduction

Denmark
1978

Bache, concrete and mortar with blended cement with 30% ultra fine fillers and well dispersed with a high dosage of superplasticizer. Compressive strength up to 280 MPa and a water/binder ratio 0.18 – 0.25. Worlds first UHPC!

Structure of cement paste according to Hans Henrik Bache's theories and developments in 1964 - 1978:

- Traditional cement paste with a water/ cement ratio of 0.50 - 0.70
- Cement paste with a superplasticizer and a water / cement ratio of 0.32 - 0.38
- DSP cement paste with a water/ binder ratio of 0.18 - 0.25.

EPFL Masterclass "Strengthening of Orthotropic Steel Bridge Decks with Ultra High Performance Concrete" November 16th 2021
EPFL School of Architecture, Civil and Environmental Engineering, Section Civil Engineering, Structural Maintenance and Safety Laboratory (SMSE) Peter Buitelaar/CONSULTINCY

BUITELAAR, Peter (2021), "Strengthening of Orthotropic Steel Bridge Decks with Ultra High Performance Concrete". Masterclass École Polytechnique Fédérale de Lausanne, Switzerland. 16th November 2021.

BUITELAAR, Peter (2020), "Reviving Construction Industry and Structures with Ultra High Performance Concrete". Online International Conference on 'Reviving Construction Industry in Post COVID World' from 1st to 5th December 2020. India Construction Week.

Presenters

- Peter Buitelaar (Speaker)**
Company Owner
Peter Buitelaar
Consultancy, Netherlands
View Biography
- Yeo Shih Hong (Panelist)**
Concrete Specialist
YSH Concrete Technology
Sdn Bhd
View Biography
- Zack Lim (Moderator)**
Managing Director
Jacklin Flat Floor
Specialist Sdn Bhd
View Biography

VirtualCast YTL CEMENT

BUILDING & INFRASTRUCTURE SERIES

ULTRA HIGH PERFORMANCE CONCRETE FOR CONSTRUCTION AND REHABILITATION OF PAVEMENTS AND STRUCTURES

DATE: 13th OCTOBER 2020

BUITELAAR, Peter (2020), "Ultra High Performance Concrete for Construction and Rehabilitation of Pavements and Structures". YTL Cement Virtual Seminar Series 2020. Building to Connect. Kuala Lumpur, Malaysia. 13th October 2020.



UHPC云讲堂 第1期
China UHPC E-Lecture **第1期**

【第二、三讲】 6月6日 (周六) 14:00-18:00

UHPC发展历程、工程应用的开拓发展与案例
History, Renovation & Development of UHPC Applications and Case Studies

主讲专家 **Speaker:** Peter Buitelaar
特邀翻译 **Translator:** 金伟华 Weihua JIN / 赵筠 Jun ZHAO

CCPT 云学院 CCFA - UHPC
砼创智度 | 超高性能水泥基材料与工程技术分会



UHPC技术咨询专家
Peter Buitelaar

BUITELAAR, Peter (2020), "High Performance Concrete and Ultra High Performance Concrete: Performance based Applications and Case stories". China UHPC E-Lecture June 6th 2020. China Concrete and Cement-based Products Association UHPC. CCPA—UHPC



BUITELAAR, Peter and MÜLLER, Stephan (2020), "Fibres in ultra-high-performance concrete". Concrete Volume 54 April 2020 Issue 03. British Concrete Society.

FROM CONCRETE TO CRACKS CONTROL

2-DAY CONFERENCE

"WE SPEAK FROM EXPERIENCE"

Date: 22 (THU) & 23 (FRI) AUG 2019
Venue: EASTIN HOTEL (170124) (170124-01)
Course Rate: RM 2199.00/PAX
RM 2199.00/PAX
RM 2399.00/PAX
RM 1980.00/PAX (Members of Association)

Speakers:

- Mr. Peter Buitelaar
- Mr. Billy Lim
- Dr. Saikat Sin
- Mr. Joseph Chan
- Mr. Chin Si Hong
- Mr. Yee Siah Hong

Organised by: Academy of Concrete Technology (ACT) in collaboration with University of Technology Mara and supported by The Institution of Engineers, Malaysia and American Concrete Institute Malaysia Chapter.

BUITELAAR, Peter (2019), "High Performance Concrete and Ultra High Performance Concrete Applications and Case stories". Two day conference From Concrete to Cracks Control. Organised by Academy of Concrete Technology in collaboration with University of Technology Mara and supported by The Institution of Engineers, Malaysia and American Concrete Institute Malaysia Chapter. August 23th Kuala Lumpur, Malaysia.



An international event not to be missed!
FROM CONCRETE TO CRACKS CONTROL
 22 & 23 AUG 2019 | EASTIN HOTEL, PUTRAJAYA
 Contact: Mr. Peter Buitelaar | Tel: +603 251 2111
 Mr. Peter Buitelaar | Email: peter@aoct.com.my
 Mr. Peter Buitelaar | WhatsApp: +603 251 2111
 Mr. Peter Buitelaar | Facebook: peter.buitelaar

COURSE TOPICS claimable!

- FIBRES FOR CONCRETE**
 - Design and function of synthetic fibres (Polypropylene (PP) Fibre)
 - Design and function of steel fibres (Applications of steel fibres for slab on grade)
- CONCRETE FLOOR CRACKS**
 - The 7 common floor cracks and their causes | Ways to mitigate floor cracks |
 - Control systems - expansion joints, contraction joints, movement joints |
 - Construction joints and more!
- CONCRETE AND BRICKS & CONCRETE CORES**
 - Designing to the first steel class | Characteristics of concrete |
 - Optimising concrete mix design for shrinkage control |
- ULTRA HIGH PERFORMANCE CONCRETE (UHPC) - A NEW CLASS OF CONCRETE**
 - Characteristics, mix design and applications of UHPC | Engineering properties of UHPC | Case studies on UHPC & SHPC used for bridge and structures |
 - Insights & notable structures bridges, etc |

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BUITELAAR, Peter (2019), *"History and Introduction of Ultra High Performance Concrete"*. Two day conference From Concrete to Cracks Control. Organised by Academy of Concrete Technology in collaboration with University of Technology Mara and supported by The Institution of Engineers, Malaysia and American Concrete Institute Malaysia Chapter. August 22th Kuala Lumpur, Malaysia.

8
 De laatste nummer van de 52 jaargangen → 20 maanden publicatie
CEMENT

BUITELAAR, Peter and QUIST BATISTA, Carmen Maria (2019), *"New Generation UHPC"*. Dutch Journal Cement 2019 No. 8.

Is (CTRL=C and CTRL+V) Inventive, Patentable, Innovative?
 = INVENTIVE
 = PATENTABLE
 = INNOVATIVE?

BUITELAAR, Peter (2018), *"Is (CTRL=C and CTRL+V) Inventive, Patentable, Innovative?"* Publication as earlier published on LinkedIn regarding patent and patent application bonded Ultra-Thin Hybrid Reinforced High Performance Concrete Overlay. October 2018. Available as PDF reprint.



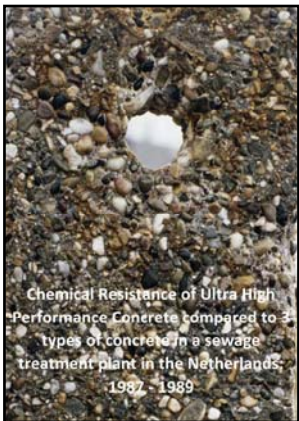
BUITELAAR, Peter (2018), “35 years of HPC and UHPC toppings for industrial floors”. Concrete Volume 52 September 2018 Issue 07. British Concrete Society.



BUITELAAR, Peter (2018), “Ultra High Performance Concrete shotcrete an innovative solution? Yes but in 1988 and not in 2018!” Publication on LinkedIn April 2018.



BUITELAAR, Peter (2018), “Pile repair and strengthening pier with Ultra High Performance Concrete in Venezuela: 1990 - 1992”. Publication on LinkedIn April 2018.



BUITELAAR, Peter (2018), *“Chemical Resistance of Ultra High Performance Concrete compared to 3 types of concrete in a sewage treatment plant in the Netherlands: 1987 - 1989”*. Publication on LinkedIn March 2018.



BUITELAAR, Peter (2018), *“Floating Ultra-Thin Hybrid Reinforced High Performance overlay with a thickness of only 22 – 25 mm after 21 years intensive usage”*. Publication on LinkedIn January 2018.



BUITELAAR, Peter (2017), *“Modern concrete classification seems to be a labyrinth of correct, incorrect and confusing acronyms and information”*. Publication on LinkedIn October 2017.



BUITELAAR, Peter (2017), “*Strengthening bridges and viaducts with a Hybrid Reinforced HPC or UHPC: Mechanical application with a slipform paver*”. Publication on LinkedIn October 2017.



BUITELAAR, Peter (2017), “*Ultra - High performance concrete - more specialists than projects?*” Concrete Volume 51 April 2017 Issue 03. British Concrete Society.



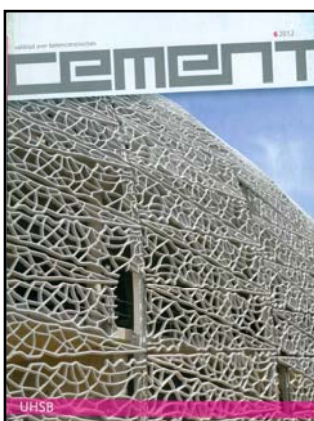
BUITELAAR, Peter (2015), “*Ultra High Performance Concrete: from higher strength to tailor made composition*”. Lecture Ultra High Performance Concrete for teachers Universities of Applied Sciences of Polytechnic. Dutch Concrete Society. November 6th 2015.



BUITELAAR, Peter (2014), "Applications UHPC." Symposium Ultra High Performance Concrete. Delft University of Technology. 27th February 2014. Delft University of Technology, Delft, Netherlands.



BUITELAAR, Peter (2012), "High Performance Applications in the Offshore for Ultra High Performance Grout and Ultra High Performance Concrete: Is there a potential market for Ductal?" Presentation HolcimLafarge Ductal board and staff. 28th June 2012. Paris, France.



TIRIMANNA, Dil and BUITELAAR, Peter (2012), "Concept for modular bridge in fibre reinforced UHPC; Modular UHPC Bridge tested". Dutch Journal Cement 2012 No. 6. June 2012.



BUITELAAR, Peter (2010), *“Elephant skin and Ultra High Performance Concrete used in prestigious Danish Project; Concrete Innovations in Concert Hall.”* Dutch Journal Cement 2010 No. 2.

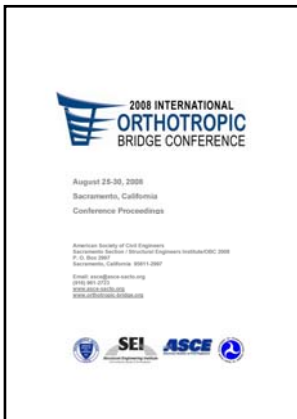


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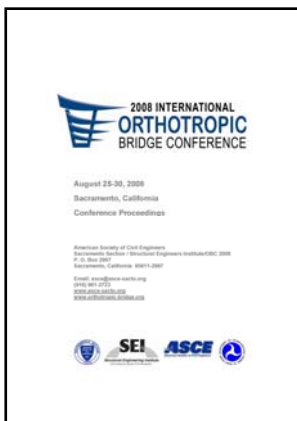
Paper withdrawn by author due to privat circumstances.



BUITELAAR, Peter and BRAAM, René (2008), *“Heavy Reinforced Ultra Thin White Topping of High Performance Concrete for Re-strengthening and Rehabilitation of Structures and Pavements”*. 8th International Symposium on Utilization of High-Strength and High-Performance Concrete. October 27th – 29th, 2008 Tokyo, Japan.



BUITELAAR, Peter and BRAAM, René (2008), “*Application of the Reinforced High Performance Concrete Overlay on orthotropic steel bridge decks*”. Orthotropic Bridge Conference. August 25 – 29, 2008. Sacramento, CA. USA.



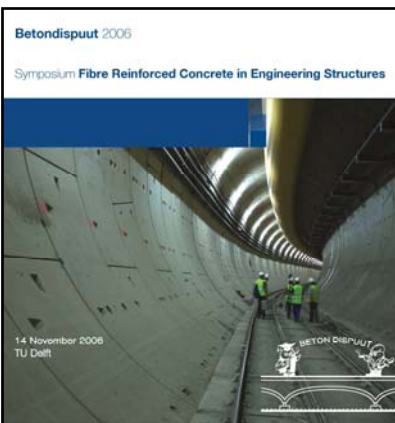
BRAAM, René, KOLSTEIN, Henk, ROMEIJN, Arie and BUITELAAR, Peter (2008), “*Concrete overlays to improve the fatigue life of movable orthotropic steel bridges*”. Orthotropic Bridge Conference. August 25 – 29, 2008. Sacramento, CA. USA.



BUITELAAR, Peter and BRAAM, René (2008), “*Heavy Reinforced Ultra Thin High Performance Concrete Overlay to Restrengthen concrete viaducts.*” Structural Faults & Repair 10th - 12th June 2008. Edinburgh, Scotland, United Kingdom.



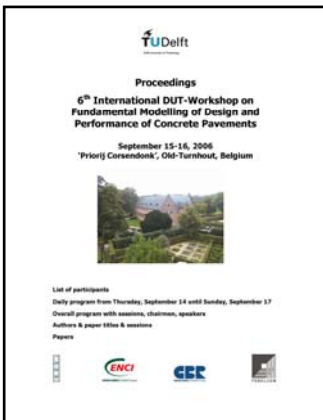
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BUITELAAR, Peter (2006), “UHPC in Bridges”. Symposium Fibre Reinforced Concrete in Engineering Structures. Betondispuut Delft University of Technology. 4th November 2006. Delft University of Technology, Delft, Netherlands.



BUITELAAR, Peter; BRAAM, René and DE WIT, Mathijs (2006), “Heavily Reinforced Ultra Thin White Topping to Re-strengthening Infrastructural Structures”. 10th International Symposium on Concrete Roads. September 18th - 22th 2006. Brussels, Belgium.



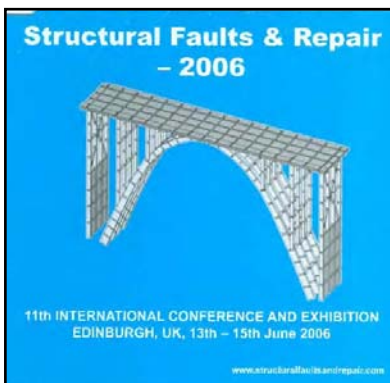
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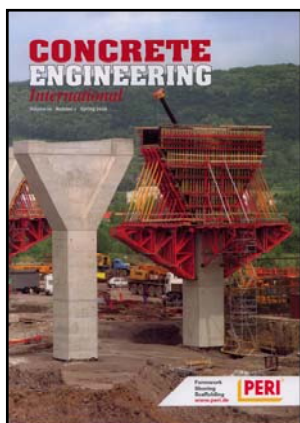
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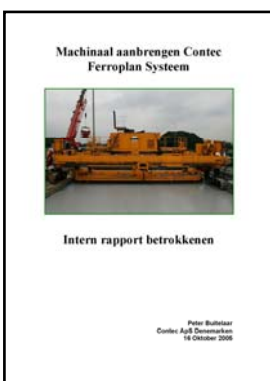
BUITELAAR, Peter (Author) and DENKINGER, Max (2006), *“Ertüchtigung orthotroper Fahrbahnplatten van Stahlbrücken”*. Article from Bridge Design & Engineering. Issue No. 40 Third Quarter 2006 translated in German by Denkinge. German Journal Stahlbau, July 2006 Issue 7 S.602-604 ISSN 0038-9145.



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BUITELAAR, Peter; BRAAM, René and KAPTIJN, Niek (2006), “Concrete Evidence”. Concrete Engineering International. Spring 2006 Volume 10 No. 1. United Kingdom.



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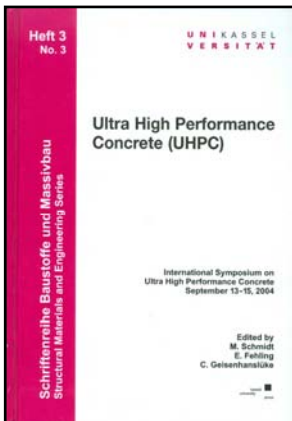
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BUITELAAR, Peter (2004), “Ultra High Performance Concrete: Developments and Applications during 25 years” Plenary session of First International Symposium on Ultra High Performance Concrete. September 14th - 15th 2004. Kassel, Germany. Separate PDF reprint available.



BUITELAAR, Peter (2004), *“Heavy Reinforced Ultra High Performance Concrete.”* First International Symposium on Ultra High Performance Concrete. September 14th - 15th 2004. Kassel, Germany.



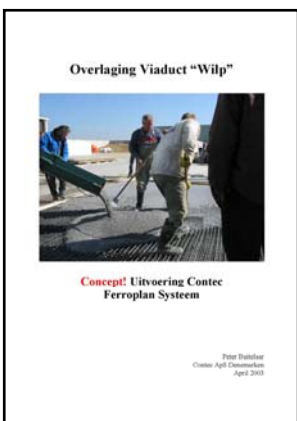
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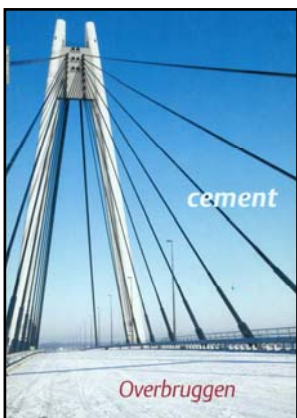
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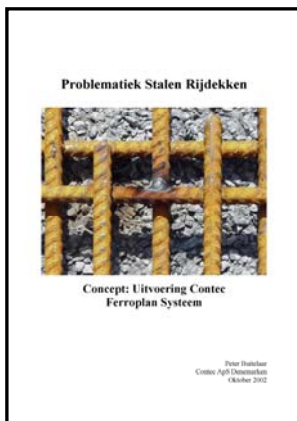
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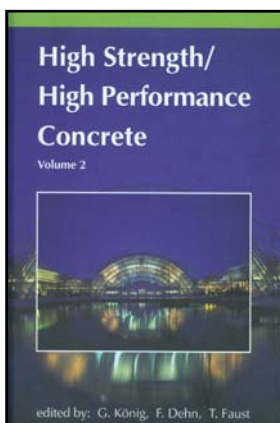
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BUITELAAR, Peter (2002), *“Ultra Thin Heavy Reinforced High Performance Concrete Overlays”* 6th International Symposium on Utilization of High Strength / High Performance Concrete. June 2002 Leipzig Germany.



BUITELAAR, Peter (2001), *“Ultra High Strength/ High Performance Concrete for repair and ultra-thin overlays”*. Presentation for VABOR (Society for Concrete Repair Companies in the Netherlands). Houten, Utrecht, Netherlands. March 22 2001.



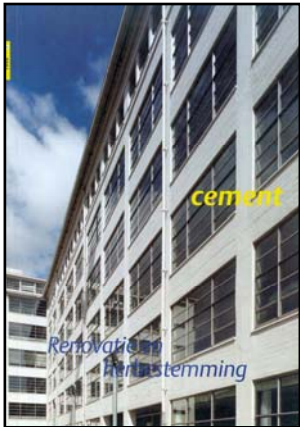
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BUITELAAR, Peter (1999), *“Ultra Thin Toppings with high strength mortars.”* Dutch Journal Cement 1999 No. 7.



BUITELAAR, Peter (1995), *“Ultra High Strength Concrete”.* Congreso del Concreto 1995, March 27th —29th 1995. AVICO-PRE, Caracas, Venezuela.



BUITELAAR, Peter (1992), *“Densit mortars for very strong and dense concrete. Development and applications of cement based mortars with ultra high strength.”* Dutch Journal Cement November 1992