

# Research at Building and Infrastructure



## List of publications

The survey contains peer-reviewed journal articles and conference papers (i.e. presentations with article), reports, and datasets so far produced by the researchers of the Building and Infrastructure group. Publications are listed by year.

Updated on September 4, 2020

## 2020

### Journal papers

Rezaie A., Achanta R., Godio M. & Beyer K. (2020). **Comparison of crack segmentation using Digital Image Correlation measurements and Deep Learning**. Construction and Building Materials 261 (120474), <https://doi.org/10.1016/j.conbuildmat.2020.120474>

Fjellgaard Mikalsen R., Durgun Ö., Williams Portal N., Orosz K., Honfi D. & Reitan K. N. (2020). **Efficient Emergency Responses to Vehicle Collision, Earthquake, Snowfall and Flooding on Highways and Bridges: A Review**. Journal of Emergency Management. <https://doi.org/10.5055/jem.2020.0450>

Larsson J. & Flansbjer M. (2020). **An Approach to Compensate for the Influence of the System Normal Stiffness in CNS Direct Shear Tests**. Rock Mechanics and Rock Engineering, <https://doi.org/10.1007/s00603-020-02051-0>

Rezaie A., Godio M. & Beyer K. (2020). **Experimental Investigation of Strength, Stiffness and Drift Capacity of Rubble Stone Masonry Walls**. Construction and Building materials, 251 (August): 118972. <https://doi.org/10.1016/j.conbuildmat.2020.118972>

Robuschi S., Lundgren K., Fernandez I & Flansbjer M. (2020). **Anchorage of naturally corroded, plain reinforcement bars in flexural members**. Materials and Structures, 53(38). <https://doi.org/10.1617/s11527-020-01471-2>

Wilding B., Godio M. & Beyer K. (2020). **The ratio of shear to elastic modulus of in-plane loaded masonry**. Materials and Structures, 53 (2): 40. <https://doi.org/10.1617/s11527-020-01464-1>

### Conference papers

Larsson J., Flansbjer M., Williams Portal N., Johnson E., Johansson F. & Mas Ivars D. (2020). **Geometrical quality assurance of rock joint replicas in shear tests – introductory analysis**. ISRM International Symposium, **EUROCK** – Hard Rock Engineering, Trondheim, Norway

Portioli F.P.A., Cascini L., Gagliardo R. & Godio M. (2020). **Contact dynamics, incremental static and limit analysis of historic masonry structures via rigid block modelling**. 14th World Congress on

Computational Mechanics (**WCCM**) and 8th European Congress on Computational Methods in Applied Science and Engineering (**ECCOMAS**), Mini Symposium 166: Modelling of historical masonry structures under extreme events: earthquakes, impacts and soil movements, Paris, France

Rezaie A., Vanin F., Godio M. & Beyer K. (2020). **Crack segmentation using digital image correlation (DIC) and image processing**. 8th International Conferences on Advances in Experimental Structural Engineering (**AESE**), Christchurch, New Zealand

Williams Portal N., Flansbjerg M., Carró-Lopez D. & Fernandez I. (2020). **Analysis of tensile behaviour of recycled aggregate concrete using acoustic emission technique**. 3<sup>rd</sup> **RILEM** Spring Convention – Ambitioning a Sustainable Future for Built Environment: Comprehensive Strategies for Unprecedented Challenges, Guimarães, Portugal

Williams Portal N. & Flansbjerg M. (2020). **Fracture process of recycled aggregate concrete using acoustic emission technique under tension**. XXIV **Concrete Research Symposium**, Sandefjord, Norway

## Datasets

Wilding B., Godio M. & Beyer K. (2020). **Supplemental material to ‘The ratio of shear to elastic modulus of in-plane loaded masonry’**. Zenodo. <http://doi.org/10.5281/zenodo.2590596>

# 2019

## Journal papers

Flansbjerg M., Williams Portal N. & Vennetti D. (2019). **Verification of the Structural Performance of Textile Reinforced Reactive Powder Concrete Sandwich Façade Elements**. Applied Sciences 9(12). <https://doi.org/10.3390/app9122456>

Godio M. & Beyer K. (2019). **Tri-linear model for the out-of-plane seismic assessment of vertically spanning unreinforced masonry walls**. Journal of Structural Engineering (ASCE),145(12): 04019159. [https://doi.org/10.1061/\(ASCE\)ST.1943-541X.0002443](https://doi.org/10.1061/(ASCE)ST.1943-541X.0002443)

Godio M. & Beyer K. (2019). **Quantifying the out-of-plane response of unreinforced masonry walls subjected to relative support motion**. Fracture and Structural Integrity, 50, 194–208. <https://doi.org/10.3221/IGF-ESIS.50.17>

Godio M., Vanin F., Zhang S. & Beyer K. (2019). **Quasi-static shear-compression tests of stone masonry walls with plaster: influence of load history and axial load ratio**. Engineering Structures. Engineering Structures, 192, 264–278. <https://doi.org/10.1016/j.engstruct.2019.04.041>

Godio M. & Beyer K. (2019). **Evaluation of force-based and displacement-based out-of-plane seismic assessment methods for unreinforced masonry walls through refined model simulations**. Earthquake Engineering & Structural Dynamics, 48(4), 454–475. <https://doi.org/10.1002/eqe.3144>

## Conference papers

Rezaie A., Godio M. & Beyer K. (2019). **Quasi-static cyclic tests on six rubble stone masonry walls**. 8<sup>th</sup> International Conferences of Seismology and Earthquake Engineering (**SEE**), Tehran, Iran

Wilding B., Godio M. & Beyer K. (2019). **Das Verhältnis von Schub- zu Elastizitätsmodul in unbewehrten Mauerwerksscheiben** (in german), 16 Erdbeben-ingenieur-wesen & Baudynamik (**D-A-CH**), Innsbruck, Germany

Wilding B., Godio M. & Beyer K. (2019). **Shear to elastic modulus ratio in unreinforced masonry**, 13<sup>th</sup> North America Masonry Conference (**NAMC**), Salt Lake City, USA

Carró-Lopez D., Fernandez I. & Williams Portal N. (2019). **An old bridge transformed into a new one: Possible, recommendable?** 20<sup>th</sup> **IABSE** Congress, New York City 2019: The Evolving Metropolis, New York City, USA

Jacobsson L., Kjell G., Kiuru R. & Suikkanen J. (2019). **Wave velocity measurements in three directions on axially loaded water-saturated granite and gneiss core specimens**. Proceedings of the 14th International congress on Rock Mechanics and Rock Engineering (**ISRM**), Foz do Iguassu, Brazil, 13-18 September 2019, CRC Press, pp. 1638-1645

## Reports

Kiuru R., Heikkinen E., Jacobsson L. & Kovacs D. (2019). **EDZ Study area in ONK-TKU-3620: Petrophysical, rock mechanics and petrographic testing and analysis conducted on drill core specimens between 2014 and 2016**. Posiva WR 2017-56, Posiva OY, 54 p.

Kovacs D., Dabi G., Toth T., Jacobsson L. & Kiuru R. (2019). **EDZ Study area in ONK-TKU-3620: Discrete fracture network modelling of microcrack system in drill core specimens and comparisons with petrophysical measurements**. Posiva WR 2016-56, Posiva OY, 78 p.

Jacobsson L., Kjell G., Brander L. & Kiuru R. (2019). **EDZ Study area in ONK-TKU-3620: Determination of seismic wave velocities at six load levels, petrophysical and rock mechanical properties of drill core specimens**. Posiva WR 2016-57, Posiva OY, 408 p.

Jacobsson L. & Sjöström J. (2019). **Forsmark – Laboratory tests for investigation of the influence of rock type, oxidation, and other factors in borehole breakouts. Boreholes KFM01A, KFM04A, KFM05A and KFM24. Thermal properties by TPS method and uniaxial compression and indirect tensile strength tests of intact rock**. Report SKB P-18-08, Swedish Nuclear Fuel and Waste Management Co.

## Datasets

Godio M. & Beyer K. (2019). **Supplemental material to 'Quantifying the out-of-plane response of unreinforced masonry walls subjected to relative support motion'**. Zenodo. <http://doi.org/10.5281/zenodo.3187536>

Godio M. & Beyer K. (2019). **Matlab code for 'Analytical model for the out-of-plane response of vertically spanning unreinforced masonry walls'**. Zenodo. <http://doi.org/10.5281/zenodo.2631860>

# 2018

## Journal papers

Flansbjerg M., Williams Portal N., Vennetti D. & Mueller U. (2018). **Composite behaviour of textile reinforced reactive powder concrete sandwich façade elements**. *International Journal of Concrete Structures and Materials*, 12(71), 1-17. <https://doi.org/10.1186/s40069-018-0301-4>

Flansbjerg M. & Lindqvist J.E. (2018). **Meso Mechanical Study of Cracking Process in Concrete Subjected to Tensile Loading**. *Nordic Concrete Research*, 59(1). <https://doi.org/10.2478/ncr-2018-0012>

Godio M., Stefanou I. & Sab K. (2018). **Effects of the dilatancy of joints and of the size of the building blocks on the mechanical behavior of masonry structures**. *Meccanica*, 53(7), 1629–1643. <https://doi.org/10.1007/s11012-017-0688-z>

## Conference papers

Godio M. & Beyer K. (2018). **Modelling of out-of-plane loaded vertically spanning unreinforced masonry walls under static and dynamic loading: comparison between four modelling approaches**, 9<sup>th</sup> International Conference on Computational Methods (**ICCM**), Rome, Italy

Godio M. & Beyer K. (2018). **Tri-linear model for the out-of-plane seismic assessment of unreinforced masonry walls**, 16<sup>th</sup> European Conference on Earthquake Engineering (**ECEE**), Special Session 18: Seismic modelling of masonry buildings: present knowledge and open challenges for research and practice, Thessaloniki, Greece

Godio M. & Beyer K. (2018). **Simplified micro-modelling of shear-compression stone masonry walls and their interaction with plaster**, 10<sup>th</sup> International Masonry Conference (**IMC**), Milan, Italy

Guerrini G., Senaldi I., Comini P., Kallioras S., Vanin F., Godio M., Graziotti F., Magenes G., Beyer K. & Penna A. (2018). **Experimental and numerical assessment of the seismic performance of a half-scale stone masonry building aggregate**, 16<sup>th</sup> European Conference on Earthquake Engineering (**ECEE**), Special Session 18: Seismic modelling of masonry buildings: present knowledge and open challenges for research and practice, Thessaloniki, Greece

Jacobsson, L., Lindqvist, J.E. (2018). **Laboratory investigation of crack initiation on hourglass-shaped granite specimens**, *Geomechanics and Geodynamics of Rock Masses, Volume 1: Proceedings of the 2018 European Rock Mechanics Symposium* / [ed] Vladimir Litvinenko, London: CRC Press, 2018, pp. 633-638, Saint Petersburg, Russia, 22-26 May 2018.

Jacobsson L., Sandström J. & Brander L. (2018). **Wedge splitting tests on granite and gneiss specimens**, ARMS10 10th Asian Rock Mechanics Symposium. The **ISRM** International Symposium for 2018, Singapore, 29 Oct-3 Nov 2018.

## Reports

Jacobsson L., Appelquist K., Lindqvist J. & Åkesson U. (2018). **Spalling initiation experiments on large hard rock cores**. Report SKB R-14-12, Svensk Kärnbränslehantering AB.

## Datasets

Godio M. & Beyer K. (2018). **Supplemental material to 'Tri-linear model for the out-of-plane seismic assessment of vertically-spanning unreinforced masonry walls'**. Zenodo. <http://doi.org/10.5281/zenodo.1407050>

Godio M. & Beyer K. (2018). **Supplemental material to 'Evaluation of force-based and displacement-based out-of-plane seismic assessment methods for unreinforced masonry walls through refined model simulations'**. Zenodo. <http://doi.org/10.5281/zenodo.1491190>

# 2017

## Journal papers

Cinar A.F., Barhli S.M., Hollis D., Flansbjerg M., Tomlinson R.A., Marrow T.J., Mostafavi M. (2017). **An autonomous surface discontinuity detection and quantification method by digital image correlation and phase congruency**. Optics and Lasers in Engineering, 96: 94-106. <https://doi.org/10.1016/j.optlaseng.2017.04.010>

Godio M. & Beyer K. (2017). **Analytical model for the out-of-plane response of vertically spanning unreinforced masonry walls**. Earthquake Engineering & Structural Dynamics, 46(15), 2757-2776. <https://doi.org/10.1002/eqe.2929>

Godio M., Stefanou I., Sab K., Sulem J. & Sakji, S. (2017). **A limit analysis approach based on Cosserat continuum for the evaluation of the in-plane strength of discrete media: Application to masonry**. European Journal of Mechanics - A/Solids, 66, 168-192. <https://doi.org/10.1016/j.euromechsol.2017.06.011>

Williams Portal N., Thrane Nyholm L. & Lundgren K. (2017). **Flexural behaviour of textile reinforced concrete composites: experimental and numerical evaluation**. Materials and Structures, 50, 1-14. <https://doi.org/10.1617/s11527-016-0882-9>

Williams Portal N., Flansbjerg M. & Mueller U. (2017). **Experimental study on anchorage in textile reinforced reactive powder concrete**. Nordic Concrete Research, 57(2/2017), 73-87. [diva2:1163116](https://doi.org/10.1016/j.norc.2017.06.001)

Williams Portal N., Flansbjerg M., Zandi K., Wlasak L., Malaga K. (2017). **Bending behaviour of novel Textile Reinforced Concrete-foamed concrete (TRC-FC) sandwich elements**. Composite Structures, 177: 104-118. <https://doi.org/10.1016/j.compstruct.2017.06.051>

## Conference papers

Beyer K., Penna A., Vanin F., Senaldi I., Godio M. et al. (2017), Presentation: **Seismic retrofit of cultural heritage buildings – when less is more**, 4<sup>th</sup> Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures (**SMAR**), Zurich, Switzerland

Godio M. & Beyer K. (2017). **Current methodologies of out-of-plane seismic assessment of unreinforced masonry walls: evaluation through refined model simulations**, 13<sup>th</sup> Canadian Masonry Symposium (**CMS**), Halifax, Canada

## Reports

Jacobsson L. & Kjell G. (2017). **Measurement of p- and s-wave velocity in material using ultrasonics**, RISE Report 2017:48, RISE Research Institutes of Sweden AB, 145 p.

# 2016

## Journal papers

Mueller U., Williams Portal N., Chozas V., Flansbjerg M., Larazza I., da Silva N. & Malaga K. (2016). **Reactive powder concrete for façade elements – A sustainable approach**. Journal of Façade Design and Engineering, 4, 53-66. <https://doi.org/10.3233/FDE-160051>

Godio M., Stefanou I., Sab K. & Sulem J. (2016). **Multisurface plasticity for Cosserat materials: plate element implementation and validation**. International Journal for Numerical Methods in Engineering, (108), 456–484. <https://doi.org/10.1002/nme.5219>

## Conference papers

Flansbjerg M. Honfi D., Vennetti D., Williams Portal N. & Mueller U. (2016), **Structural concept of novel RPC sandwich façade elements with GFRP connectors**, 19<sup>th</sup> IABSE Congress: Challenges in Design and Construction of an Innovative and Sustainable Built Environment. Stockholm, Sweden

Williams Portal N. Zandi K., Malaga K. & Wlasak L. (2016), **GFRP connectors in textile reinforced concrete sandwich elements**, 19<sup>th</sup> IABSE Congress: Challenges in Design and Construction of an Innovative and Sustainable Built Environment. Stockholm, Sweden

## Reports

Jacobsson L., Sandström J., Flansbjerg M., Sjögren T. & Brander L. (2016). **POSE Experiment – Laboratory determination of density, porosity and mechanical anisotropy of gneiss and granite**, Posiva WR 2006-31, Posiva OY, 288 p.

Jacobsson L., Flansbjerg M., Andersson L. & Appelquist K. (2016). **Normal loading and shear tests on joints from Olkiluoto**, Posiva WR 2006-30, Posiva OY, 130 p.

Jacobsson L., Flansbjerg M., Johannesson P., Lindqvist J-E. & Schouenborg B. (2016). **ONKALO POSE Experiment - Geological and Rock Mechanical Tests on Samples from a Heating Test at Olkiluoto**, Posiva WR 2016-20, Posiva OY, 77 p.

Jacobsson L. (2016). **Parametrisation of Fractures - Direct Shear Tests on Calcite and Breccia infilled Rock Joints from Äspö HRL under Constant Normal Stiffness Condition**, Posiva WR 2016-19, Posiva OY, 70 p.

# 2015

## Journal papers

Godio M., Stefanou I., Sab K. & Sulem J. (2015). **Dynamic finite element formulation for Cosserat elastic plates**. International Journal for Numerical Methods in Engineering, 101(13), 992–1018. <https://doi.org/10.1002/nme.4833>

Williams Portal N., Flansbjerg M., Johannesson P., Malaga K. & Lundgren K. (2015). **Tensile behaviour of textile reinforcement under accelerated ageing conditions**. Journal of Building Engineering, 5, 57-66. <https://doi.org/10.1016/j.jobe.2015.11.006>

Jacobsson L., Appelquist K. & Lindkvist J. E. (2015). **Spalling experiments on large hard rock specimens**, Rock Mech Rock Eng, 48(4), pp. 1485-1503. <https://doi.org/DOI:10.1007/s00603-014-0655-0>

## Conference papers

Jacobsson L. & Lindqvist J.E. (2015). **Laboratory investigation of stress gradient effect at spalling experiments on granite**, Innovations in applied and theoretical rock mechanics: Proceedings of the 13th International Congress of Rock Mechanics Congress (**ISRM**). Montreal, Canada, 10-13 May 2015.

## 2014

### Journal papers

Godio M., Stefanou I., Sab K. & Sulem J. (2014). **Cosserat Elastoplastic Finite Elements for Masonry Structures**. Key Engineering Materials, 624: 131–38.  
<https://doi.org/10.4028/www.scientific.net/KEM.624.131>

Williams Portal N., Perez Fernandez I., Thrane Nyholm L. & Lundgren K. (2014). **Pull-out of textile reinforcement in concrete**. Construction and Building Materials, 71, 63-71.  
<https://doi.org/10.1016/j.jobbe.2015.11.006>

Williams Portal N., Lundgren K., Wallbaum H. & Malaga K. (2014). **Sustainable potential of textile-reinforced concrete**. Journal of Materials in Civil Engineering, 27(7).  
[http://dx.doi.org/10.1061/\(ASCE\)MT.1943-5533.0001160](http://dx.doi.org/10.1061/(ASCE)MT.1943-5533.0001160)

### Conference papers

Godio M., Stefanou I., Sab K., Sulem J. & Sakji, S. (2014). **Cosserat elastoplastic finite element for masonry structures**, 4<sup>th</sup> Conference on Masonry Structures Strengthened with Composites (**MURICO**), Ravenna, Italy

### Reports

Jacobsson L., Bergström G. & Sällberg S. (2014). **Tillfällig avstängning av plaströrsledningar genom sammanklämning – kunskapsläge**, SP Rapport 2014:22, Sveriges Tekniska Forskningsinstitut. (In Swedish)

## 2013

### Conference papers

Jacobsson L., Appelquist K. & Lindqvist J.E. (2013). **Spalling Experiments and microscopy investigations on crystalline rock specimens**, **NGL** Annual Science Meeting, November 7-8, 2013, Oskarshamn, Sweden. (Poster)

## Reports

Johannesson P., Bokesjö M., Svensson T., Jacobsson L. & Olsson L. (2013). **VMEA-metoden för bedömning av osäkerheter i bergmekaniska tillämpningar**. BeFo Report 122. (In Swedish)

## 2012

### Conference papers

Jacobsson L., Glamheden R., Hakami E. & Olofsson I. (2012). **Rock mechanics laboratory testing in SKB site investigation program**. **EUROCK 2012**, May 28-30, 2012. Stockholm, Sweden

Jacobsson L., Andersson H., Vennetti D., & Sällberg S.-E. (2012). **The functioning of flange joints – Findings from full scale experiments and FEM analyses**. **Plastic Pipes XVI**, September 24-26, 2012, Barcelona, Spain

Jacobsson L., Andersson H. & Karlsson L. (2012). **Are methods for tightness testing fit for purpose?** **Plastic Pipes XVI**, September 24-26, 2012, Barcelona, Spain

## Reports

Ghazvinian E., Diederichs M., Martin D., Christiansson R., Hakala M., Gorski B., Perras M. & Jacobsson L. (2012). **Prediction thresholds for crack initiation and propagation in crystalline rocks**. ISRM Commission on Spall Prediction, Report on Testing Procedures.

## 2011

### Conference papers

Jacobsson L., Flansbjer M., Brzovic A. & de los Santos, C. (2011). **Direct shear and tensile test on cemented healed joints from El Teniente mine, Chile**. **ISRM 2011**, October 18-21, 2011, Beijing, China

## Reports

Jacobsson L., Andersson H. & Vennetti D. (2011). **Tightness of flange joints for large polyethylene pipes – Part 1 Numerical simulations**, SP Report 2011:49, SP Sveriges Tekniska Forskningsinstitut.

Jacobsson L., Andersson H. & Sällberg S.-E. (2011). **Tightness of flange joints for large polyethylene pipes – Part 2 Full scale experimental investigations**, SP Report 2011:50, SP Sveriges Tekniska Forskningsinstitut.

Jacobsson L. & Andersson H. (2011). **Undersökning av täthet hos flänsförband i grova plaströr med beräkningar och experiment**, SVU-rapport 2011-17, Svenskt Vatten Utveckling, Stockholm. (In Swedish)



Schouenborg B., Jacobsson L. & Brundin J.A. (2011). **Beskrivning av infästningssystem och dimensionering av fasadstenplattor – Slutrapport**, MinBaS II, Område 4, Rapport nr 4.4:3, MinBaS. (In Swedish)

## 2010

### Conference papers

Jacobsson L., Christiansson R. & Martin C.D., (2010). **Experimental determination of spalling initiation in hard rock**, in J Zhao, V Labiouse, J-P Dudt and J-F Mathier (Eds) Proceedings of the **EUROCK** 2010, June 15-18, 2010, Lausanne, Switzerland, CRC Press, pp. 327-330

Jacobsson L., Flansbjer M., Schouenborg B., Grek B. & Smits A. (2010). **Expert system for dimensioning of facade claddings**, **Global Stone** Congress 2010, March 2-5, Alicante, Spain, 2010

### Reports

Glamheden R., Fälth B., Jacobsson L., Harrström J., Berglund J. & Bergkvist L. (2010). **Counterforce applied to prevent spalling**. Report SKB TR-10-37, Swedish Nuclear Fuel and Waste Management Co.

## 2009

### Conference papers

Adl-Zarrabi B., Christiansson R., Emardson R., Jacobsson L., Pendrill L.R., Sandström M. & Schouenborg B. (2009). **Quality aspects of determining key rock parameters for the design and performance assessment of a repository for spent nuclear fuel**, **Transverse Disciplines in Metrology**, Proceedings of the 13th International Metrology Congress (Ed. by French College of Metrology), Lille, France, 2007, Hoboken, Wiley 2009, pp. 301-312.

Hakami E., Glamheden R., Jacobsson L., Jansson T. & Olofsson I. (2009). **Bergmekaniska tester i SKBs platsundersökningar – en unik databas**, Bergmekanikdagen 2009, SveBeFo, Stockholm, Sweden. (In Swedish)

## 2007

### Conference papers

Jacobsson L., Flansbjerg M., Christiansson R. & Jansson T. (2007). **Measurement of micro crack volume in low porosity crystalline rock**, 11th Congress of the International Society for Rock Mechanics, Lisbon, Portugal, 2007.

## Reports

Johnson E., Kjell G., Jacobsson L., Lillbacka R., Kabo E. & Ekberg A. (2007). **Lateral spårstabilitet – slutrapport**, Research Report 2007:04, Applied Mechanics, Chalmers. (In Swedish)

Jacobsson L. (2007). **Borehole KFM01C. Uniaxial compression test of intact rock. Forsmark site investigation.** Report SKB P-06-69, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2007). **Boreholes KFM01A and KFM02B. Micro crack volume measurements and triaxial compression tests on intact rock. Forsmark site investigation.** Report SKB P-07-93, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2007). **Borehole KLX17A Microcrack volume measurements and triaxial compression test on intact rock. Oskarshamn site investigation.** Report SKB P-07-140, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2007). **Borehole KLX16A. Indirect tensile strength test. Oskarshamn site investigation.** Report SKB P-07-142, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2007). **Borehole KLX16A. Uniaxial compression test of intact rock. Oskarshamn site investigation.** Report SKB P-07-143, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2007). **Borehole KFM08D. Uniaxial compression test of intact rock. Forsmark site investigation.** Report SKB P-07-145, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2007). **Borehole KFM08D. Indirect tensile strength test. Forsmark site investigation.** Report SKB P-07-146, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2007). **Borehole KFM06A. Uniaxial compression test of intact rock containing sealed fractures. Forsmark site investigation.** Report SKB P-07-207, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2007). **Boreholes KLX17A, KLX18A and KLX21B. Uniaxial compression test of intact rock. Oskarshamn site investigation.** Report SKB P-07-217, Swedish Nuclear Fuel and Waste Management Co.

## 2006

### Reports

Jacobsson L. & Flansbjerg M. (2006). **Borehole KLX07A. Shear tests on sealed joints. Oskarshamn site investigation.** Report SKB P-05-209, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Drill hole KFM07A. Indirect tensile strength test including strain measurement. Forsmark site investigation.** Report SKB P-05-212, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Borehole KFM09A. Triaxial compression test of intact rock. Forsmark site investigation.** Report SKB P-06-26, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Drill hole KFM09A Indirect tensile strength test. Forsmark site investigation.** Report SKB P-06-28, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. & Flansbjerg M. (2006). **Borehole KFM09A Normal loading and shear tests on joints. Forsmark site investigation.** Report SKB P-06-29, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Borehole KLX08. Uniaxial compression test of intact rock. Oskarshamn site investigation.** Report SKB P-06-32, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Borehole KLX10. Uniaxial compression test of intact rock. Oskarshamn site investigation.** Report SKB P-06-37, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Drill hole KLX10. Indirect tensile strength test. Oskarshamn site investigation.** Report SKB P-06-38, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. & Flansbjerg M. (2006). **Borehole KLX10. Normal loading and shear tests on joints. Oskarshamn site investigation.** Report SKB P-06-39, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Borehole KLX10. Triaxial compression test of intact rock. Oskarshamn site investigation.** Report SKB P-06-40, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Borehole KFM01C Triaxial compression test of intact rock. Forsmark site investigation.** Report SKB P-06-68, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Borehole KLX12A. Uniaxial compression test of intact rock. Oskarshamn site investigation.** Report SKB P-06-73, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Drill hole KLX12A. Indirect tensile strength test. Oskarshamn site investigation.** Report SKB P-06-74, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. & Flansbjerg M. (2006) **Borehole KLX12A. Normal loading and shear tests on joints. Oskarshamn site investigation.** Report SKB P-06-75, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Borehole KLX12A. Triaxial compression test of intact rock. Oskarshamn site investigation.** Report SKB P-06-76, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Borehole KFM01D Triaxial compression test of intact rock. Forsmark site investigation.** Report SKB P-06-214, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. & Flansbjerg M. (2006). **Borehole KFM01D. Shear tests on sealed joints. Forsmark site investigation.** Report SKB P-06-215, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Borehole KLX11A. Uniaxial compression test of intact rock. Oskarshamn site investigation.** Report SKB P-06-270, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Drill hole KLX11A. Indirect tensile strength test. Oskarshamn site investigation.** Report SKB P-06-271, Swedish Nuclear Fuel and Waste Management Co.

Jacobsson L. (2006). **Borehole KLX11A. Triaxial compression test of intact rock. Oskarshamn site investigation.** Report SKB P-06-272, Swedish Nuclear Fuel and Waste Management Co.

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