



DOPAS Newsletter 1

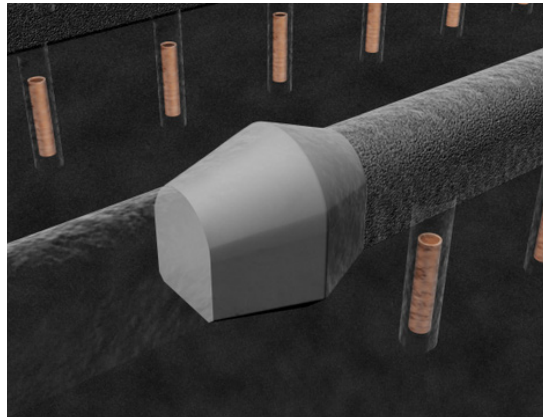
DOPAS facts

Full-scale Demonstration Of Plugs And Seals

- Project start: 1.9.2012, length is 4 years (48 months), Project end: 31.8.2016
- 14 Partners from 8 European countries (Posiva, Andra, DBE TEC, GRS, Nagra, NDA, Rawra, SKB, CTU, NRG, GSL, BTECH, VTT, UJV)
- 5 Full-scale experiments wholly or partially implemented within DOPAS
- A Joint Activity of IGD-TP, SRA Topic "Technical feasibility and long-term performance of repository components"
More about IGD-TP <http://www.igdtp.eu/>.

Future events by DOPAS

- A workshop in 2014
- A joint seminar with IGD-TP in 2016

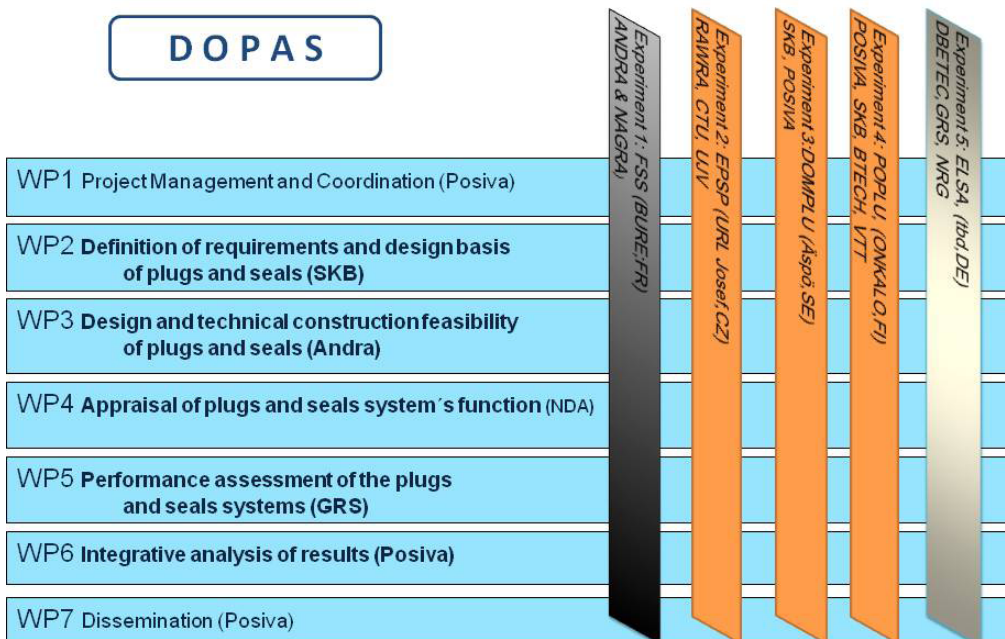


One plug example: Posiva's deposition tunnel plug experiment in ONKALO underground rock characterization facility in Olkiluoto, Finland

The research leading to these results has received funding from the European Union's European Atomic Energy Community's (Euratom) Seventh Framework Programme FP7 (2007-2013) under grant agreement no 323273, the DOPAS project.



DOPAS



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Full scale plug and seal experiments at DOPAS

Experiment 1. FSS

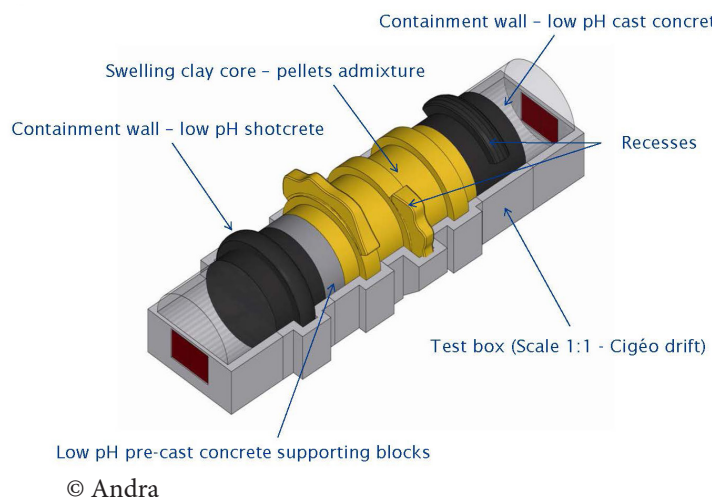
Full scale seal experiment is a technological demonstration to be performed in full scale above surface by Andra and Nagra

Geometric dimensions :

- The test box is 36.1 meters long.
- The diameter of the experiment is 7.6 meters inside and 9 meters outside (without recesses).
- The containment walls are 5 meters long and the swelling clay core is 13.5 meters long.

Schedule :

- The construction began on October 2012 and are finished at the end of 2013.
- The testing activities are planned to start 2013 and at the beginning of 2014.
- The dismantling is planned for the end of 2015.



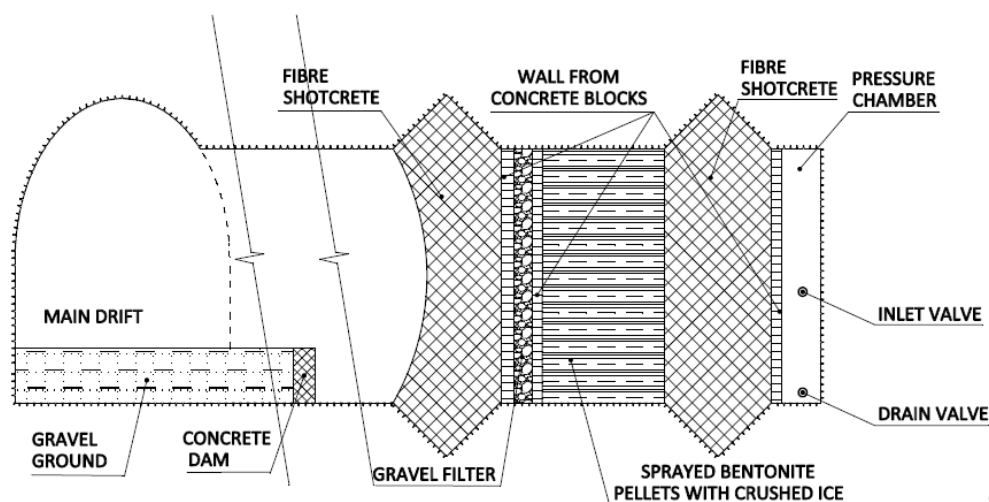
Experiment 2 EPSP

The Czech Experimental Pressure and Sealing Plug (EPSP) will be constructed at the Josef Underground Laboratory in granitic rock by a consortium of three institutions - RAWRA, the Faculty of Civil Engineering CTU and ÚJV Řež.

The principal structural elements of the experiment consist of two layers of low pH fibre shotcrete surrounding sprayed-on layer of a mixture of bentonite pellets and crushed ice. The experiment also features a gravel filtration layer and walls constructed from concrete blocks (permanent formwork). A pressure chamber situated at the "face" of the

plug will be connected via boreholes to the technological centre for loading of the experiment. The total length of the plug will be approximately 6m and it will have a diameter of 3m.

- The design and preparatory work phase last from September 2012 to November 2013.
- The construction and instrumentation phase of the EPSP will last from December 2013 to September 2014.
- EPSP testing are performed between October 2014 and December 2015.



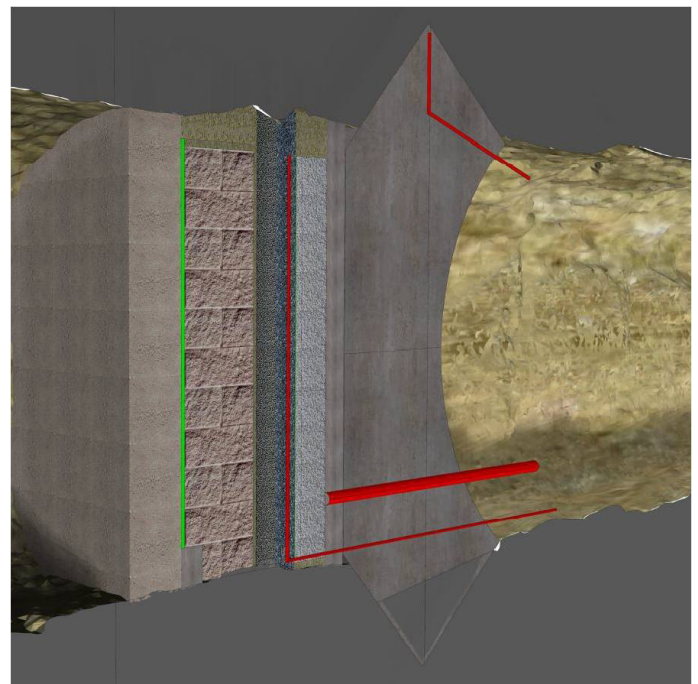
Experiment 3 DOMPLU

Dome Plug Experiment or DOMPLU is a full-scale deposition tunnel end plug demonstration at Äspö Hard Rock Laboratory (-460 m) conducted by SKB and Posiva.

Diameter of the tunnel is 5.5 m and diameter of the plug is 9 m at centre of abutment for concrete dome.

Mechanically strong dome shaped plug without reinforcement has been designed during 2011 and field work was initiated 2012 and the plug construction was in Spring 2013.

The monitoring part of the Experiment belongs to the DOPAS project and was initiated 2012. The concrete part of the plug was equipped with 56 sensors and filter and seal layers with backfill includes 47 sensors. The pressure testing starts during summer 2013.



© SKB

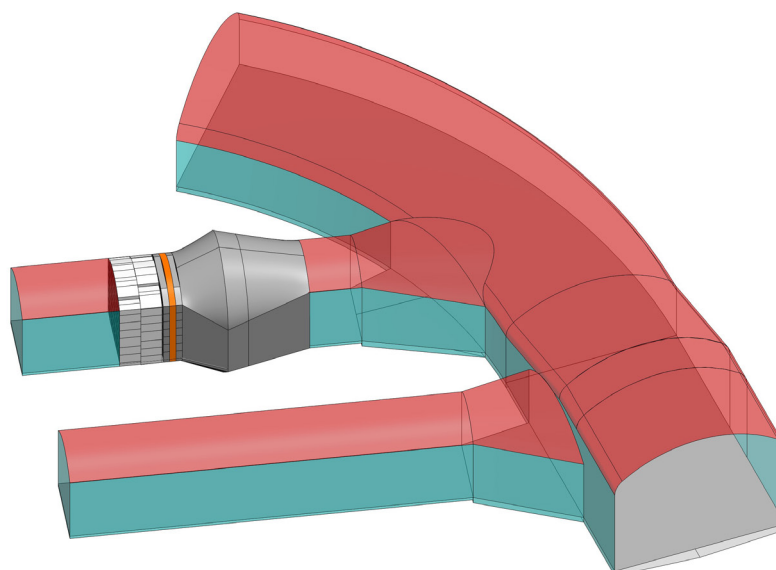
Experiment 4 POPLU

POPLU deposition tunnel end plug experiment will be implemented in ONKALO demonstration area at the planned disposal depth within POPLU project jointly by Posiva and SKB.

- Planning and design 2012-2013.
- Construction and implementation 2013-2014.
- Testing activities 2014-2015.

- Reinforced low pH concrete is the main component in the wedge plug. The plug structure is a composite plug and a modified backfill section is needed behind the plug for experimental purposes. Length of the plug is 6 meters and the diameter is 5,5 meter.

- POPLU and DOMPLU will be evaluated together.



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News from DOPAS project

WP2 news

WP2 task meeting was held in February 2013. The audience received an introduction to the Requirement Management by Lena Moren, SKB. Design basis and criteria for the DOPAS Experiments was also presented by SKB, Posiva, Andra, Rawra and GRS and collected to be published in a planned public report, which will be available around (M20) April 2014. Work continues with reference design compilation.

WP6 news

The adoption of the Expert Elicitation process as a part of the DOPAS deliverables quality assurance has started with a pilot elicitation covering the Posiva's plug's (POPLU) instrumentation plan for its cast concrete component including the grouting. An introduction section was held at the end of May 2013 for the four domain experts and four performance assessment experts engaged in the review of the instrumentation plan documentation during the summer 2013. The pilot elicitation including related documentation is scheduled to be complete by the end of September 2013.

Under the WP6, the first project specific site visit is planned to take place to Andra's experiment in France at the end of the summer 2013 for the project consortium with the purpose of collecting lessons learned from the FSS experiment and to take advantage of these experiences in the other four demonstrations.

WP3 News

- Experiment plans were discussed in February 2013 at Äspö and the participants did also learn about SKB's experiences.
- DOMPLU plug at Äspö HRL was casted in March 2013. See more information: http://skb.se/Templates/Standard___35953.aspx
- FSS test box construction was achieved and commissioned on 3 June 2013.



Part of WP3 representatives at Äspö HRL in February 2013.
Picture: SKB



Picture: Andra



DOPAS Management Team evaluated the project after 9 months

DOPAS Management Team meeting was held in Prague in June 2013.

It was found that implementation of full-scale experiments requires lot of planning and discussion but laboratory and field work run smoothly and good results are available.



Visiting the Josef Gallery - the location of the Czech EPSP experiment. Professor Pacovsky introduces on-going underground experiments to the DOPAS management team members. Picture: CTU



Participants of the DOPAS management team meeting at the Czech Technical University in June 2013. Picture: CTU

Dissemination activities

- DOPAS project and FSS experiment has been presented in Clays in Natural and Engineered Barriers for Radioactive Waste Confinement conference in Montpellier October 2012.

<http://www.montpellier2012.com/>

- DOPAS project and EPSP experiment will be presented in Euradwaste 2013 conference in Vilnius October 2013.

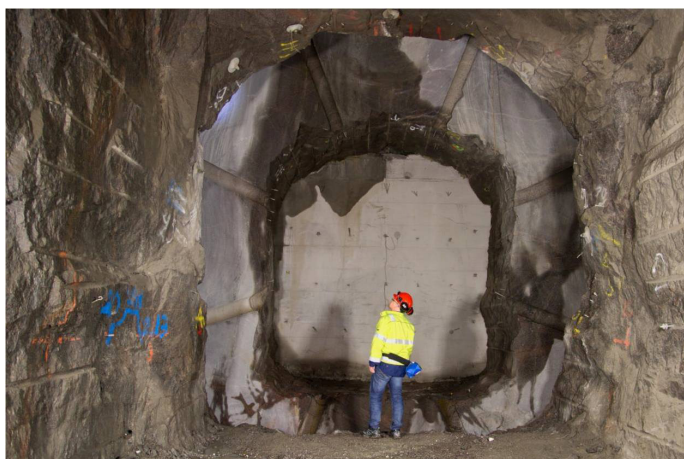
http://cordis.europa.eu/fp7/euratom-fission/euradwaste-2013_en.html

- DOPAS and its experiments are planned to be presented in PEBS final conference in Hannover in February 2014.

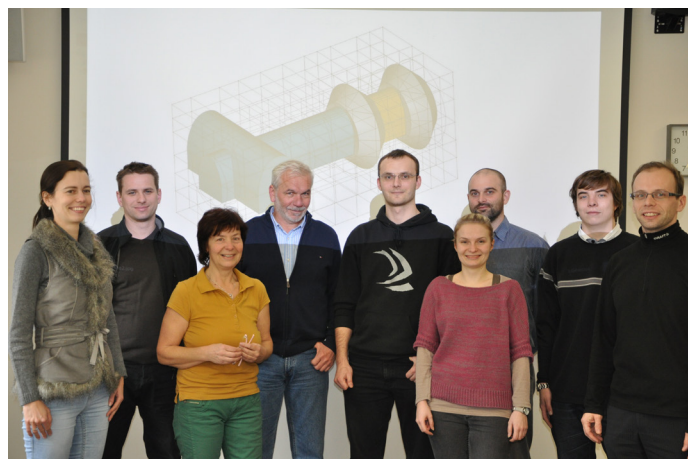
http://www.pebs-eu.de/PEBS/EN/Events/events_inhalt_en.html



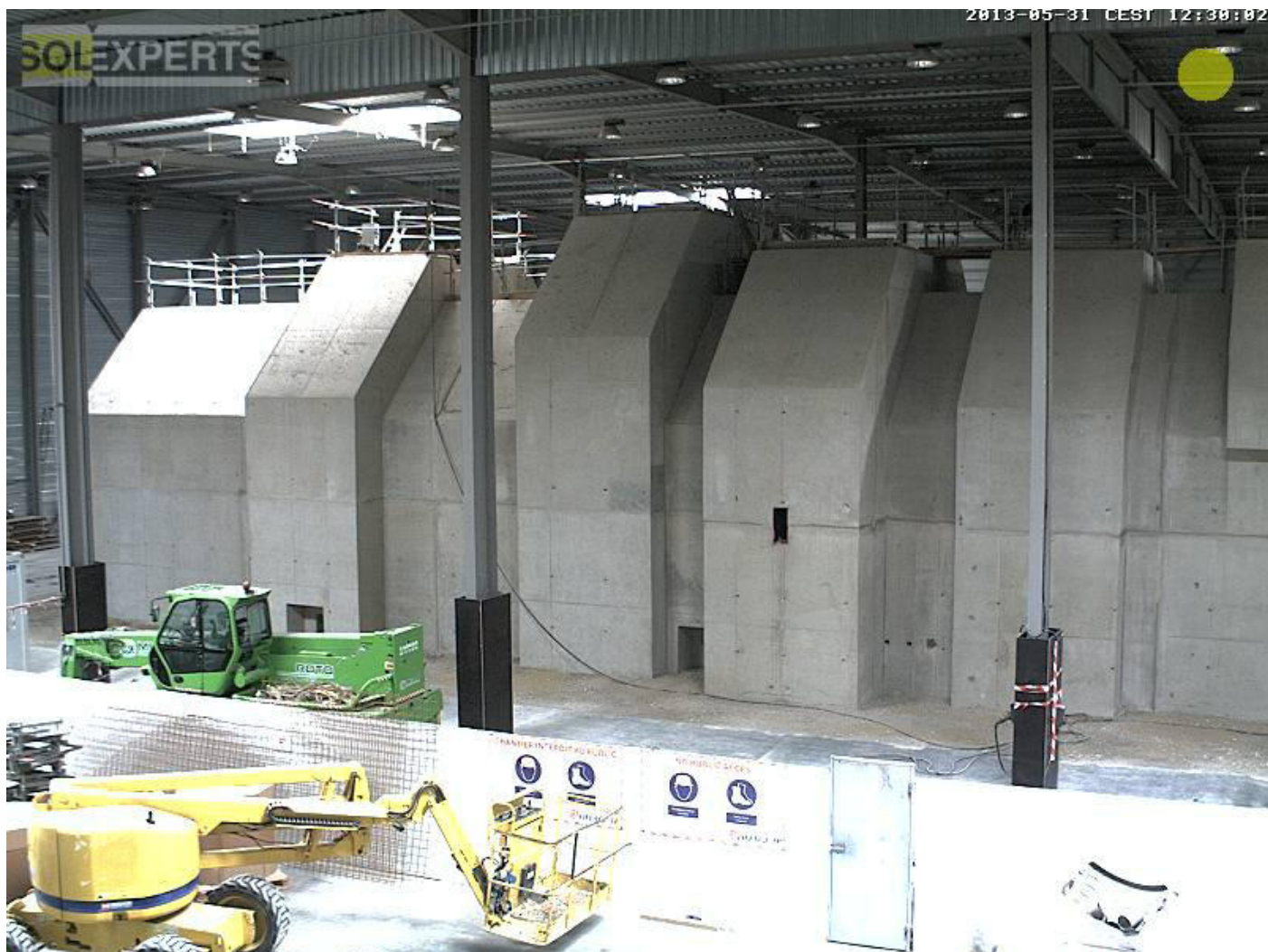
Pictures from DOPAS



Wire sawing produce amazing smooth walls for the DOMPLU plug casting. Picture: SKB



Czech team are planning EPSP details. Picture: CTU



Frames for FSS test has been constructed and emplacement actions starts during summer 2013. Picture: Andra

