SREDStakeholder.CA

Webcast

May 14, 2020

SR&ED cases – TECHNOLOGY

SREDStakeholder.CA

Beton Mobile – losing project
"What if?" scenario

Presented by
David Sabina, MBA, CPA
MEUK Corporation

SREDStakeholder.CA webcast May 14, 2020

Key Criteria Summary

2021 - B-11-01: Study of permeability to chloride ions and durability with various pozzolanic additions and	
BENCHMARKS	**ACTIVITIES BY YEAR**
Internet searches: 1 Articles	2020
	1-1
	Activity 1
OBJECTIVES	**RESULTS**
chlorine penetration: 2500 coulombs compression resistance: x spalling: x freeze thaw stability: x air bubble distribution: x	2800
UNCERTAINTIES & KEY VARIABLES	**CONCLUSIONS**
1 - Technological uncertainty	
adding pozzolan	
effects of latex	
modify mixing method	
	METHODS
Analysis Trials Prototypes Lines of code	15

What if > due diligence?

Google Patents

(pozzolan) (mobile mixer)

SEARCH TERMS

pozzolan × or + Synonym

mobile mixer × or + Synonym

About 4,472 results

Download with Concepts Side-by-side

Sort by · Relevance Group by · None Deduplicate by · Family Results / page · 10

Heavy metals in contaminated soils: a review of sources, chemistry, risks and best available strategies for remediation

Google Scholar • downloads.hindawi.com • Wuana R • Isrn Ecology

Cementitious composition

US • US7442248B2 • Scott F. Timmons • Research Incubator, Ltd.

Priority 2003-11-18 • Filed 2005-07-21 • Granted 2008-10-28 • Published 2008-10-28

All components of the cementitious composition can be mixed using either a batch mixer or a continuous mixer (i.e., **mobile truck mixer**). Proper ... The cementitious composition also comprises catalyst. Suitable catalysts are **pozzolan** accelerators. Examples of suitable catalysts include, but are ...

Example of how the current project could have been focussed on the "conclusions" expected by the RTA & Tax Court.

Cited By (46)

Publication number	Priority date	Publication date	Assignee	Title
US20100089293A1 *	2008-10-10	2010-04-15	Roman Cement, Llc	High early strength pozzolan cement blends
US20100144562A1 *	2008-12-04	2010-06-10	Intevep, S.A.	Ceramic microspheres for cementing applications
US20100294496A1 *	2009-05-22	2010-11-25	Lafarge	Low density cementitious compositions
US20110000400A1 *	2009-07-02	2011-01-06	Halliburton Energy Services, Inc.	Well Cement Compositions Comprising Biowaste Ash and Methods of Use

BRIEF SUMMARY OF THE INVENTION

Replacing a portion of Portland cement with pozzolan yields improved concrete with

- higher durability,
- lower chloride permeability,
- reduced creep,
- increased resistance to chemical attack,
- lower cost and reduced environmental impact

However, limit to use since pozzolans generally retard strength development.

The present invention relates to pozzolan cement blends that are particle size optimized to increase the level of pozzolan replacement of Portland cement while maintaining high early strength development.

Patent Claims: (for ideas only)

1. A pozzolan cement composition comprising:

- a distribution of differently sized pozzolan particles capable of reacting with calcium hydroxide in the presence of water in order to form solid hydration products having cementitious properties,

- the pozzolan particles having a D_{15} greater than about 5 µm;

- a distribution of differently sized hydraulic cement particles at least partially comprised of tricalcium silicate and/or dicalcium silicate that provide excess calcium hydroxide when mixed with water ,

- the hydraulic cement particles having a D_{85} less than about 20 µm.

NOTE:

THESE TYPE OF DETAILS COULD FORM BASIS TO FORMULATE FIRST BATCH.

EACH OF THE PATENT CLAIMS = POTENTIAL AREA TO IDENTIFY VARIATIONS IN TECHNIQUES.

CLAIMS (For ideas only)

2. A **method of manufacturing a pozzolan cement** composition, comprising:

- providing an initial **stream of hydraulic** cement particles;
- providing an initial stream of **pozzolan** particles;
- grinding and/or classifying the hydraulic cement particles in order to yield a modified stream of hydraulic cement particles of increased fineness compared to the initial stream of hydraulic cement particles and which has a D_{90} of less than about 20 µm;
- removing at least a portion of the pozzolan particles less than about 20 µm and/or **grinding a**t least a portion of the pozzolan particles to yield a modified stream of pozzolan particles having a D_{90} less than about 120 µm and a D_{10} greater than about 10 µm; and
- **blending** the modified streams of hydraulic cement and pozzolan particles to yield the pozzolan cement composition.

NOTE:

WHAT IF BETON HAD BEEN ABLE TO CITE THIS PATENT & HYPOTHESIZE WHY SIMILAR METHODS WOULD NOT WORK FOR THEM?

Judge Bowman – NW Hydraulic landmark SR&ED case 1998

- [10]"The addition of these words ["including **incremental improvements** thereto"] in 1995 …appears to have been in response to a concern that the achievement or attempted achievement of slight improvements was not covered.
- I should not have thought it was necessary to say so. **Most scientific research involves gradual, indeed infinitesimal, progress. Spectacular breakthroughs are rare and make up a very small part of the results of SR&ED in Canada.”**

NW Hydraulic – scope of advancement

- [50] The technological advance was not spectacular but, …, what may seem routine in hindsight involved innovative hypotheses as well as considerable experimentation.

Thank you!

- To all participants, contributors & presenters

SREDStakeholder.CA