



Electronic Resources Reviews

Cement, Concrete and Research Literature Online Repositories (Portland Cement Association)

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Cement and concrete are all around us, from sidewalks and buildings to runways and dams, and yet most of us hardly stop to think about the technical knowledge that goes into making this highly used material. Cement, a key ingredient in the quality and manufacture of concrete, has been discovered and rediscovered throughout the ages. Since the early 1900's, the Portland Cement Association's ongoing research has continued providing necessary answers for making cement and concrete longer lasting and, increasingly, more environmentally sustainable.

The Cement Research Library, Concrete Research Library and PCA Archival Literature databases are three separate full text repositories that are freely available through the Portland Cement Association (PCA) and PCA Library's website.

A Short History on the Portland Cement Association

The Portland Cement Association was founded in 1916 but had its beginnings over a decade before, in 1902, when a group of eastern cement manufacturers came together in search of solutions to problems plaguing the industry. The group continued to meet unofficially during 1902 as the Eastern Portland Cement Manufacturers to discuss mutual issues in the cement manufacturing business. After a constitution and by-laws were drawn up, the first Annual Meeting was held on December 9, 1902 where the name "Association of Portland Cement Manufacturers" was adopted. In 1904, the name underwent another slight change with the addition of "American" becoming "Association of American Portland Cement Association." In 1916 the association was renamed again, becoming what is known today as the Portland Cement Association or PCA ([Bartlett et. al., 1924](#)).

Authority of Publication

The PCA is looked upon by the industry as, "the premier policy, research, education, and market intelligence organization serving America's cement manufacturers" ([PCA 2019](#)). Research publications dating back to the early 1900s by PCA research engineers are still routinely cited throughout the cement and concrete literature.* Many of the research studies in these repositories were the first to be conducted in the industry, in order to understand the underlying chemistry of

cement and to form specifications for quality construction. Since the earliest days, PCA research and technical engineers have participated on ASTM subcommittees continuing to ensure cement specifications are evidence based and consistent across standardization bodies.

Scope, Content, Currency, and Intended Audience

The PCA's Cement Research Library, Concrete Research Library and Archival Literature repositories provide nearly 4,000 full text publications from 1915-2008. While intended mainly for industry-related scientists, engineers and concrete construction professionals, all of these repositories are freely available to the wider community. At the time of this writing, each repository must be searched separately.

- **Cement Research Library (1919-2008)** – contains nearly 2,000 full text technical papers and research reports on the chemistry, technology, properties, and manufacture of Portland and other cements
- **Concrete Research Library (1917-2008)** – contains publications on topics ranging from concrete properties and long-term field performance to durability, high performance concrete, life cycle inventory, sustainability, and structural design.
- **PCA Archival Literature (1915-1996)** – contains nearly 700 discontinued* PCA documents published between 1915 and 1994. In contrast to the pure research reports represented in the other repositories, this compilation emphasizes technical and practical guidance for the engineer and concrete construction professional. *It is important to note that since publications in this repository are discontinued, none of the reports should be considered valid as guidance in new construction, or reconstruction, without consulting an engineer and building code specialist.

Search Features

Manufacturing Reports Only

Search by:

All fields **1.**

Sort by: Title **2.**

Index of:

All of these words (=AND) **3.**

Any of these words (=OR) **3.**

Phrase search **4.**

Aall, C.
Abbas, T.
Abeln, D. L.
Abrams, A. L.
Abrams, D. A.
Adaska, W. S.
Adler, M.
Advisory Committee of the
Long-Time Study of Cement
Performance in Concrete
Aguilar, O.
Ahluwalia, S. C.
Ahmed, J.
Ahrens, M.
Akhter, H. A.
Alesi, S. K.
Alexander, E. H.
Ali, M. T.
Aller, M.
Alonzo, A. A.
Alsguth, U. K.
Alspaugh, M.A.
Amato, R.
Ambler, H. A.
Ambler, T. E.
Ament, H. A.
American Portland Cement
Alliance
American Portland Cement
Alliance, Portland Cement
Association, and Penta
Engineering Corporation
Amin, A. B.
Andersen, K.T.

Figure 1. Search features

1. Each repository can be searched by:
 - All fields (default)
 - Author
 - Keyword
 - Title
 - Code No.
 - Year
2. Results can be sorted by:
 - Title (default)
 - Year
 - Author
 - Code No.
3. Additionally, one can change the left-hand side panel Browse index from the default (Author) to either:
 - Keyword
 - Code No.
 - Year
4. Searches can be made more relevant or broadened/narrowed by using the radio button Boolean selection options:
 - All of these words (=AND)
 - Any of these words (=OR)
 - Phrase Search (default)

Interface Features and Limitations

Once a search is run, the results are displayed in an easy-to-read table format (Figure 2). The total number of hits is visible in red at the top of the results list. Keywords and authors are hyperlinked for further exploration of works by relevant keywords or works by the same author. The title is linked directly to the PCA file storage server to download the full text document. If a search results in more than 50 publications, users have the option to skip to a page or click **Next** for subsequent sets of 50 publications. At the bottom of each page, there is an option to **Print this Page**. At the top of the page is a link to **View All Reports** which will bring up a list of all documents in the database. Here you can also find links to Home (main page), View Manufacturing Reports, Web Catalog (PCA Bookstore), About PCA and Help. Please note that since these repositories were originally created as CD-Rom disks in 2008, the “About PCA” and “Contact” information at the bottom of the **Help** page are a bit out-of-date.

PCA Portland Cement Association		Home View All Reports View Manufacturing Reports Web Catalog About PCA Help	
alternative fuels			
Total # 19			
Year: 2008	Air Emissions Data Summary for Portland Cement Pyroprocessing Operations Authors: Richards, J. Code: SN3048 Keywords: Air emissions ; Alternative fuels ; Emissions ; Dioxins ; Kilns ; NESHAP ; Particulates ; Precalciners ; Preheaters		
Year: 2001	Alternate Fuels and Raw Materials in the Cement Manufacturing Process Authors: Yonley, C. Code: M230-6b Citation: Mill Session Paper. Keywords: Alternative fuels ; Environmental ; Raw materials		

Figure 2. Results list

Interface Annoyances and Limitations Include:

- No numbers preceding the results list which would make it easier to bookmark your place in a long list of items
- No option to tailor the number of results per screen or set any other kinds of user preferences
- No option to select specific results to save or print
- No abstracts
- No ability to export/import into a bibliographic manager

Additionally, at times users might see the following pop-up (figure 3):

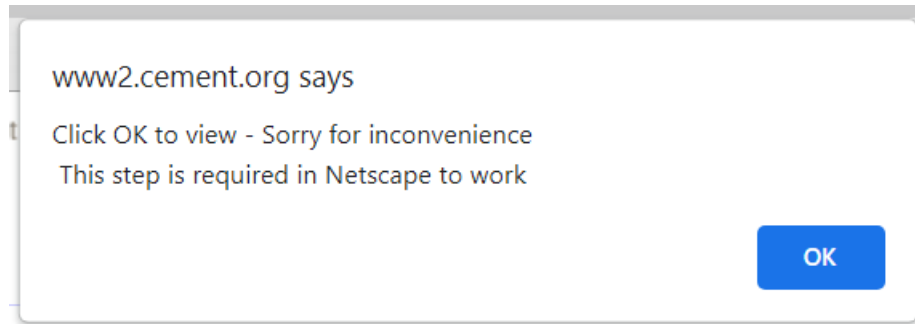


Figure 3. Buggy pop up

Since the databases were originally built on a now obsolete software, this message may be triggered by some browsers but can easily be overridden through clicking the [OK] button each time it occurs.

Technical Requirements

The search interface works on all popular browsers that were tested (Chrome, IE, Edge, Firefox). Other than having Adobe Acrobat installed to be able to open the full text of publications, no other technical requirements are needed.

Suggestions for Improvement

Having to go into three separate search files, plus the PCA Online catalog, to potentially find all the publications you are looking for is cumbersome. At some point it would be good to incorporate these three repositories into a single searchable online repository and include updated publications, which are available in the PCA Online catalog, as well.

How to Access and Search the Repositories

- Go to the PCA main website: <https://www.cement.org>
- Scroll to the bottom of the page
- Click on the link to **Reference Library** in the gray page footer
- Click on **Catalog** from the left menu
- Click on the **PCA Resources** tab at the top

Watch a 2-minute video on how to access and search: <https://tinyurl.com/pcapubs>

How to Access and Search for Recent Publications

For more recent PCA publications, researchers should search the PCA Library's online catalog. Here's how to access and a short tutorial on the most effective way to search for PCA publications.

- Go to the PCA main website: <https://www.cement.org>
- Scroll to the bottom of the page
- Click on the link to Reference Library in the gray page footer
- Click on Catalog from the left menu, then click on the Advanced Search tab
- Use the drop down menu to select "Publisher" and search for "PCA", combined this with a keyword or title search on your topic for higher relevancy.

Watch a 2-minute video on how to access the catalog and limit to PCA publications:

<https://tinyurl.com/limitpcapubs>

Note

*A recent Google Scholar search on the 1934 PCA publication by T.C. Powers, "Absorption of Water by Portland Cement Paste during Hardening Process," brought up 19 articles citing this publication since 2017.

References

Bartlett, G. S., Lesley, R. W., & Lober, J. B. (1924). *History of the Portland Cement Industry in the United States With Appendices Covering Progress of the Industry by Years and an Outline of the Organization and Activities of the Portland Cement Association* Chicago (IL): International Trade Press, Inc. Google Books. [cited 2021 Aug 31] Available from https://www.google.com/books/edition/History_of_the_Portland_Cement_Industry/QR86AAAA_MAAJ.

PCA: since 1916 America's cement manufacturers [Internet]. Skokie (IL): Portland Cement Association; c2019 [cited 2021 Aug 31]. Available from <https://www.cement.org/about>.



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