INDUSTRIES OF INDIA

PORTLAND CEMENT

Stone, Fire, Concrete

SOURCE COMPANION

This companion lists every source cited in the book, what was actually read of it, which claims it supports, and where its limits lie. It is a reading ledger, not a bibliography: an entry appears here only if its text was opened and read during the writing, and the Supports line names the claims the passage was seen to carry. Where a source is a press release, a company history page or an encyclopedia article, that is stated plainly, because the reader deserves to know which bricks are load-bearing and which are scenery. Bracketed numbers in the book's text, [C1] through [C72], point to the entries below.

[C1] USGS Mineral Commodity Summaries 2025: Cement

Read. the cement chapter of the 2025 Mineral Commodity Summaries PDF in full.

Supports. world production on the order of 4.0-4.2 billion tonnes a year; the country league table with China first and India second; United States production, capacity and import figures; the price and trade notes used in The Powder Beneath Everything, The Map of Makers and The Plateau of the Giant.

Limitations. US government estimates; some country figures are marked as estimates in the source itself, and the summary is a snapshot published early in 2025 covering 2024.

https://pubs.usgs.gov/periodicals/mcs2025/mcs2025-cement.pdf

[C2] Chatham House: Making Concrete Change (executive summary)

Read. executive summary and key findings sections.

Supports. the ~8 percent share of global CO2 attributed to cement; the roughly 60/40 split between process (limestone) and fuel emissions; the framing of the carbon problem in The Eight Percent Problem and The Levers.

Limitations. 2018 publication; the emissions-share estimate depends on the denominator year. The book states the share as a range (7.5-8 percent) for this reason.

https://www.chathamhouse.org/2018/06/making-concrete-change-innovation-low-carbon-cement-and-concrete

[C3] IEA: Cement (Net Zero Scenario tracking)

Read. the tracking page and its scenario milestones.

Supports. the ordering and dating of decarbonization levers in The Levers; the relative roles of clinker substitution, efficiency, alternative fuels and carbon capture; the current trajectory versus net-zero pathway gap.

Limitations. scenario content, not a forecast of what will happen; the book labels its projections as scenario milestones.

https://www.iea.org/energy-system/industry/cement

[C4] Heidelberg Materials: Brevik CCS plant opening (18 June 2025)

Read. press release in full.

Supports. the Brevik capture plant's opening date, its 400,000 tonnes per year capture design, and its place as the first full-scale capture plant on a cement kiln (Catching the Carbon).

Limitations. company press release; capacities are design figures, and cost details come from the project's public framing rather than audited accounts.

https://www.heidelbergmaterials.com/en/pr-18-06-2025

[C5] Global Cement: Global Cement Top 100 2026 (24 November 2025)

Read. the ranking article.

Supports. the industry league table of producers by capacity used in The Map of Makers and The Indian Century of Cement; the relative scale of UltraTech, the Chinese champions and the European multinationals.

Limitations. trade-press compilation of company-reported capacities; consolidation moves quickly and some entries combine subsidiaries.

https://www.globalcement.com/news/itemlist/tag/Top%20100

[C6] CemNet: China cement production falls in 2024 (6 January 2025)

Read. article in full.

Supports. China's 2024 production decline, its falling below half of world output, and the plateau-and-descent narrative of The Plateau of the Giant.

Limitations. trade press citing national statistics; Chinese cement statistics have known definitional quirks between output and dispatches.

https://www.cemnet.com/News/story/174748/china-cement-production-falls-in-2024.html

[C7] UltraTech Cement: Q4 FY25 results press release

Read. the results announcement's capacity and volume sections.

Supports. UltraTech's consolidated capacity figure used in The Indian Century of Cement, with the company's own number stated as such.

Limitations. company reporting; the book notes where the company figure and third-party league tables do not match, and states both rather than smoothing them.

https://www.ultratechcement.com

[C8] CemNet: India Economic Survey FY2024-25 (3 February

2025)

Read. article in full.

Supports. India's position as second-largest producer, its capacity crossing 400 million tonnes a year, and the growth framing of The Indian Century of Cement.

Limitations. trade press relaying a government survey; figures are survey-vintage.

https://www.cemnet.com/News/story/174833/india-economic-survey-fy2024-25.html

[C9] Competition Commission of India: Press Release No. 36/2016-17

Read. the press release.

Supports. the 2016 CCI cartel findings and penalties against cement manufacturers discussed in The Cartels.

Limitations. the regulator's own announcement at the time of the order; subsequent appeals changed parts of the penalty history, which the book flags as contested ground.

https://www.cci.gov.in

[C10] The Hindu: Rs.6,300 crore penalty on 11 cement firms (21 June 2012)

Read. article in full.

Supports. the 2012 CCI penalty round and its scale, used alongside C9 in The Cartels.

Limitations. contemporaneous news report; appeal outcomes after the report date are outside its scope.

https://www.thehindu.com/business/over-rs6300-crore-penalty-slapped-on-11-cement-firms-for-cartel-sale/article3555502.ece

[C11] Business Standard: GST 2.0 and cement tax (September 2025)

Read. the GST council reportage.

Supports. the cement GST rate change from 28 to 18 percent discussed in The Merchants of Powder's treatment of the product's taxation.

Limitations. news report of a policy decision; implementation details were still being notified at the time of writing.

https://www.business-standard.com

[C12] Adani Group: acquisition of Holcim's stake in Ambuja and ACC (15 May 2022)

Read. press release in full.

Supports. the USD 10.5 billion transaction, the largest in Indian cement, and the consolidation thesis of The Indian Century of Cement.

Limitations. acquirer's own announcement; enterprise-value and stake mechanics are stated as announced.

https://www.adani.com/newsroom/media-releases/adani-to-acquire-holcims-stake-in-ambuja-cements-and-acc-limited

[C13] Moneycontrol: India Cements sale and CSK ownership (28 July 2024)

Read. article in full.

Supports. the UltraTech acquisition of India Cements and the Chennai Super Kings footnote in The Indian Century of Cement.

Limitations. financial news report; sports-ownership details are background colour, not load-bearing.

https://www.moneycontrol.com/news/business/chennai-super-kings-ownership-to-be-unaffected-by-india-cements-sale-12780357.html

[C14] Holcim: completion of the Amrize spin-off (20 June 2025)

Read. press release in full.

Supports. the separation of Holcim's North American business (Amrize) used in Chapter 23's account of the multinationals' reshaping in The Map of Makers.

Limitations. company announcement; strategic rationale is the company's own framing.

https://www.holcim.com/media/media-releases/holcim-completes-spin-off-of-north-america-business

[C15] Dangote Cement: Nigeria Operations

Read. the operations pages.

Supports. Dangote's Nigerian capacity, plant list and export posture in The Map of Makers and Moving a Heavy, Cheap Thing.

Limitations. company web pages; capacity figures are nameplate and promotional in intent.

https://cement.dangote.com/nigeria-operations/

[C16] Cement Manufacturers' Association (India): Evolution of Cement

Read. the evolution/history pages.

Supports. Indian industry history and trade-structure detail in The Merchants of Powder and The Indian Century of Cement; lime-burning background in Chapter 3.

Limitations. an industry association's own narrative; it presents the industry's preferred history.

https://www.cmaindia.org/evolution-of-cement

[C17] Bundeskartellamt: 660 million euro cement fines (14 April 2003)

Read. the English press release in full.

Supports. the German cement cartel case in The Cartels.

Limitations. the competition authority's announcement of its own decision; later court proceedings modified individual fines.

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2003/14_04_2003_Bu%C3%9Fgeld_Zementkartell_eng.html

[C18] Aspdin's Portland Cement Patent No. 5022 (full text via Cement Kilns)

Read. the patent text in full.

Supports. what Aspdin actually claimed in 1824 and, just as important, what he did not claim; the naming story in Chapter 7 (Aspdin and the Name).

Limitations. the patent is famously vague about process; the book says so rather than reading later knowledge back into it. Transcription hosted by the Cement Kilns history site.

https://www.cementkilns.co.uk/cemkilndoc008.html

[C19] Parker's Patent for Roman Cement No. 2120 (full text via Cement Kilns)

Read. the patent text in full.

Supports. the account of James Parker's 1796 Roman cement and the septaria nodules in the chapter Roman Cement and the Bridge at Souillac.

Limitations. as with all early patents, the text is a legal fence rather than a process sheet; transcription hosted by Cement Kilns.

https://www.cementkilns.co.uk/cemkilndoc006.html

[C20] Cement Kilns: About cement

Read. the process description pages in full.

Supports. kiln thermochemistry, preheater and precalciner operation, clinker cooling and heat recovery in the chapters Inside a Modern Works and Fire and Power; fuel and ash behaviour.

Limitations. an enthusiast-historian site of exceptional technical depth; not peer-reviewed, but its process descriptions cross-check against engineering sources.

https://www.cementkilns.co.uk/cemkilndoc001.html

[C21] Cement Kilns: I. C. Johnson's cement experiments

Read. Johnson's own account in full.

Supports. the overburning insight of 1845 and the identification of the green-glass clinker as the good stuff, in The Accident on the Medway.

Limitations. a retrospective memoir written decades after the events; the book presents it as the received account, not a laboratory record.

https://www.cementkilns.co.uk/cemkilndoc010.html

[C22] École Polytechnique: Louis Vicat, artificial cement 1817

Read. the Vicat archival page.

Supports. Vicat's systematic mixture experiments and his 1817-1818 work on artificial hydraulic lime.

Limitations. an institutional heritage page; dates follow the institution's presentation.

https://www.polytechnique.edu

[C23] Vicat: company history of Louis Vicat

Read. the history pages.

Supports. the Souillac bridge context and Vicat's career arc in Roman Cement and the Bridge at Souillac.

Limitations. the company telling its founder's story; cross-checked against C22 for the technical claims.

https://www.vicat.com/en/about-us/vision/history-of-louis-vicat

[C24] Wikipedia: John Smeaton

Read. the article, particularly the Eddystone Lighthouse sections.

Supports. Smeaton's experimental method, the Aberthaw lias lime, the 1759 tower and its 123-year service life in The Lighthouse at Eddystone.

Limitations. tertiary source; used for the well-documented outline of Smeaton's work, not for contested details.

https://en.wikipedia.org/wiki/John_Smeaton

[C25] Wikipedia: Göbekli Tepe

Read. the article's construction and dating sections.

Supports. the burnt-lime terrazzo floors of roughly 9500 BCE in the chapters Before Cement and the Timeline.

Limitations. tertiary source; the lime-floor interpretation follows mainstream archaeology as presented there.

https://en.wikipedia.org/wiki/G%C3%B6bekli_Tepe

[C26] Yang, Zhang, Ma: Sticky Rice-Lime Mortar Technology (Accounts of Chemical Research, 2010)

Read. the abstract and main findings.

Supports. the sticky-rice lime mortar of Chinese city walls and its amylopectin-calcite mechanism in Before Cement.

Limitations. a chemistry journal paper focused on restoration; historical extent of the technique is taken from its cited background.

https://pubs.acs.org/doi/10.1021/ar9001944

[C27] Guinness World Records: Largest masonry dome (Pantheon)

Read. the record page.

Supports. the Pantheon's unreinforced concrete dome remaining the largest of its kind, in Rome: The Empire That Poured Itself.

Limitations. a record-keeping page; used only for the superlative claim, which is uncontroversial.

https://www.guinnessworldrecords.com/world-records/83547-largest-masonry-dome

[C28] MIT News: Why was Roman concrete so durable? (January 2023)

Read. the research news article in full.

Supports. the hot-mixing and lime-clast self-healing findings on Roman concrete in the Rome chapter.

Limitations. a university news write-up of one research group's results; the field continues to debate Roman recipes, which the book acknowledges.

https://news.mit.edu/2023/roman-concrete-durability-lime-casts-0106

[C29] NIST Special Publication 958: Calculation of Compounds in Portland Cements

Read. the Bogue chapter in full.

Supports. Bogue's career, the four-compound calculation and its known approximations in Bogue's Arithmetic.

Limitations. a memorial volume chapter; it presents Bogue sympathetically, and the book adds the known criticisms itself.

https://nvlpubs.nist.gov/nistpubs/sp958-lide/033-037.pdf

[C30] VDZ / EMABM: History of cement microscopy

Read. the historical overview pages.

Supports. Le Chatelier's and Törnebohm's microscopy of clinker in Reading the Grey Stone.

Limitations. an industrial-microscopy society resource; used for names, dates and instruments, not interpretation.

http://www.emabm.org

[C31] Cement and Concrete Research / SCI: Reflections on the history of the chemistry of cement

Read. the lecture text.

Supports. the Le Chatelier through Stockholm 1938 line of cement chemistry in Reading the Grey Stone and Bogue's Arithmetic.

Limitations. a single scholar's retrospective lecture; elegant but partial, and the book uses it accordingly.

https://www.soci.org

[C32] Wikipedia: Abrams' law

Read. the article in full.

Supports. the water-cement ratio law and its 1918 Lewis Institute origin in The Water Bargain.

Limitations. tertiary source; the law itself is uncontested textbook material.

https://en.wikipedia.org/wiki/Abrams%27_law

[C33] Wikipedia: Portland cement

Read. the article in full.

Supports. baseline composition ranges, cement types and standards context across The Science of the Clinker and One Powder, Many Cements; admixture history background in The Water Bargain.

Limitations. tertiary source used for settled facts; anything contentious was taken from primary or trade sources instead.

https://en.wikipedia.org/wiki/Portland_cement

[C34] Rutgers University Libraries: Thomas A. Edison, Concrete / Edison Portland Cement

Read. the exhibit pages in full.

Supports. Edison's cement works, his long kilns and the poured-house project in Edison's Concrete Dream.

Limitations. a curated archive exhibit; admiring in tone, and the book balances it with the venture's commercial outcome.

https://www.libraries.rutgers.edu

[C35] American Heritage: Coplay, the cement town that built America

Read. the article in full.

Supports. the Coplay cement district and the vertical-kiln era of American manufacture in The Rotary Tube and The Makers of the Machines.

Limitations. a heritage magazine feature; colourful, used for texture over numbers.

https://www.americanheritage.com

[C36] National Canal Museum: Atlas Cement and the Panama Canal

Read. the canal-cement pages.

Supports. the Panama Canal's cement supply and the role of the Lehigh valley mills in The Great Pours.

Limitations. a museum's regional account; canal-wide totals cross-checked against USBR-era figures.

https://canals.org

[C37] U.S. Bureau of Reclamation: The Concrete that Built Hoover Dam

Read. the essay in full.

Supports. Hoover Dam's concrete volumes, the block-and-pipe cooling scheme and the heat-management narrative in The Great Pours.

Limitations. the building agency's own history; celebratory in register, reliable on engineering quantities.

https://www.usbr.gov/lc/hooverdam/history/essays/concrete.html

[C38] Guinness World Records: Largest concrete dam (Three Gorges)

Read. the record page.

Supports. the Three Gorges dam's concrete volume record in The Great Pours.

Limitations. record-keeping page; used only for the superlative.

https://www.guinnessworldrecords.com

[C39] Norsk Oljemuseum: Troll A

Read. the platform pages.

Supports. the Troll A platform as the largest concrete structure moved by man, in The Great Pours and The Architecture of the Grey.

Limitations. a national museum presentation; figures are the museum's.

https://www.norskolje.museum.no

[C40] Unimix: World Record (Burj Khalifa concrete pumping)

Read. the record page.

Supports. the Burj Khalifa pumping record and pressure details in The Water Bargain and The Great Pours.

Limitations. the ready-mix supplier's own record claim; the pumping height is widely reported and uncontested.

https://www.unimix-uae.com/world-record

[C41] ASCE: Ingalls Building (Historic Civil Engineering Landmark)

Read. the landmark nomination summary.

Supports. the Ingalls Building of 1903 as the first reinforced-concrete skyscraper in Steel Learns to Trust Stone.

Limitations. a landmark citation; heights and storeys are as designated.

https://www.asce.org

[C42] Reuters: Genoa bridge disaster technical report (21 December 2020)

Read. the article in full.

Supports. the Morandi bridge collapse and the experts' findings on maintenance and controls in When Concrete Fails.

Limitations. a news report of an expert report; the judicial aftermath continued after publication.

https://www.reuters.com/article/us-italy-bridge-report/lack-of-controls-among-causes-of-genoa-bridge-disaster-technical-report-says-idUSKBN28V2UG/

[C43] NIST: Champlain Towers South investigation (June 2026 update)

Read. the investigation's public findings pages.

Supports. the Surfside collapse's structural findings, particularly the pool-deck failure narrative, in When Concrete Fails.

Limitations. an ongoing federal investigation at the time of reading; final determinations were still in progress, and the book presents findings as the investigation stated them.

https://www.nist.gov/champlain-towers-south-investigation

[C44] UNEP: Our insatiable demand for sand

Read. the report pages and summary.

Supports. the fifty-billion-tonne annual extraction figure, the environmental damage catalogue and the governance gap in The Sand Question.

Limitations. a UN programme's advocacy publication; the extraction figure is an order-of-magnitude estimate, used as such.

https://www.unep.org

[C45] Gates Notes: Building the most useful material in the world

Read. the essay in full.

Supports. the Smil-sourced observation about China's multi-year concrete pour exceeding America's twentieth-century total, in The Plateau of the Giant.

Limitations. a blog essay citing Vaclav Smil's calculation; the underlying comparison is an estimate, presented in the book as one.

https://www.gatesnotes.com

[C46] Elhacham et al.: Global human-made mass exceeds all living biomass (Nature, 2020)

Read. the abstract and key figures.

Supports. the anthropogenic-mass comparison, concrete's dominant share of it, in The World After Water.

Limitations. a modelling study with wide error bars; the book uses the headline finding, not the precise tonnages.

https://www.nature.com/articles/s41586-020-3010-5

[C47] LC3 review literature (PMC)

Read. the review article's main sections.

Supports. limestone calcined clay cement's formulation, its roughly 40 percent CO2 reduction, its calcination temperature and performance in The Challengers and The Sand Question.

Limitations. a review by researchers involved in the technology's development; promising results are reported by their proponents.

https://pmc.ncbi.nlm.nih.gov

[C48] Sublime Systems: DOE OCED award announcement

Read. the announcement and award details.

Supports. Sublime's electrochemical process and its DOE award of up to USD 87 million in The Challengers and Catching the Carbon.

Limitations. the awardee's own announcement of a conditional government award; the technology is pre-commercial.

https://sublime-systems.com

[C49] Brimstone: DOE award announcement

Read. the announcement.

Supports. Brimstone's calcium-silicate-rock process and its DOE award of up to USD 189 million in The Challengers.

Limitations. company announcement; the process is demonstrated at pilot scale only.

https://www.brimstone.com

[C50] Business Wire: Fortera opens first ReCarb plant, Redding CA (April 2024)

Read. the release in full.

Supports. Fortera's first commercial ReCarb plant and its bolt-on carbon-reuse process in The Challengers.

Limitations. company press release carried by a wire service; capacity claims are the company's own.

https://www.businesswire.com

[C51] University of Cambridge: Cambridge Electric Cement

Read. the announcement of the Nature paper.

Supports. the cement-recycling-through-steel-furnaces process and its first industrial trials in The Challengers.

Limitations. a university press release for early-stage research; the book presents it as experimental.

https://www.cam.ac.uk

[C52] Joseph Davidovits: 100,000 tonnes Geopolymer Concrete, world premiere (November 2015)

Read. the account in full.

Supports. the Brisbane Wellcamp airport geopolymer concrete pour in The Challengers and The Standards War.

Limitations. written by the inventor of the term geopolymer about a project using his chemistry; proud but documented.

https://www.davidovits.info/100000-tonnes-geopolymer-concrete-world-premiere/

[C53] IOP Publishing: Bacteria-based concrete, from concept to market (2016)

Read. the paper's main sections.

Supports. the self-healing bacterial concrete mechanism and its commercialization path in The World After Water.

Limitations. a review by the field's leading research group; market uptake remains modest, which the book notes.

https://iopscience.iop.org

[C54] Aalborg White: Global Presence

Read. the company pages.

Supports. white cement production and the Aalborg example in One Powder, Many Cements.

Limitations. company pages; used for the existence and spread of white-cement manufacture, not for market claims.

https://www.aalborgwhite.com/aalborg-white-world/about-us

[C55] Aircrete Europe: History of Autoclaved Aerated Concrete (September 2018)

Read. the article in full.

Supports. AAC's Swedish invention and autoclave process in One Powder, Many Cements.

Limitations. an equipment maker's history article; the broad dates are standard.

https://www.aircrete.com/aircrete-news/history-of-autoclaved-aerated-concrete-2/

[C56] NRMCA: Invention of the Concrete Mixer Truck

Read. the historical note.

Supports. the transit mixer's origin story in The Great Pours and the ready-mix discussion.

Limitations. an industry association's anniversary piece; priority disputes in mixer history are noted rather than resolved.

https://www.nrmca.org/america250/invention-of-the-concrete-mixer-truck/

[C57] Halliburton: company history

Read. the history pages.

Supports. the 1919-1926 development of oil-well cementing, including the Burma and offshore firsts, in One Powder, Many Cements.

Limitations. the company's own history; early dates are as the company records them.

https://www.halliburton.com/en/about-us/history

[C58] U.S. Patent 759,010: Harmon S. Palmer, Hollow Building Block

Read. the patent text in full.

Supports. Palmer's 1900 hollow concrete block patent and the block-machine industry in The Architecture of the Grey.

Limitations. patent text; the commercial history around it comes from the secondary sources.

https://www.freepatentsonline.com/759010.pdf

[C59] Portland Museum: Portland Stone

Read. the museum pages.

Supports. the Isle of Portland's stone, its use in London's buildings and the name Aspdin borrowed, in Aspdin and the Name.

Limitations. a local museum's presentation; used for local history and buildings list.

https://portlandmuseum.co.uk/portland-stone/

[C60] FLSmidth: company history

Read. the early history pages.

Supports. the Danish firm's role in developing and exporting the rotary kiln in The Makers of the Machines.

Limitations. the manufacturer's own history; market-share claims are taken cautiously.

https://fls.com/en/en-us/about+flsmidth/history/1882-1899

[C61] Wikipedia: Holcim

Read. the article's history sections.

Supports. the Holcim group's formation, mergers and disposals in The Map of Makers and The Indian Century of Cement.

Limitations. tertiary source; transaction details cross-checked against the companies' own releases (C12, C14).

https://en.wikipedia.org/wiki/Holcim

[C62] Wikipedia: Lafarge

Read. the article's history sections.

Supports. Lafarge's origins and the LafargeHolcim merger in The Map of Makers.

Limitations. tertiary source; used for the settled corporate outline.

https://en.wikipedia.org/wiki/Lafarge_(company)

[C63] Wikipedia: Cemex

Read. the article's history sections.

Supports. Cemex's Mexican origins and global expansion in The Map of Makers.

Limitations. tertiary source; used for the settled corporate outline.

https://en.wikipedia.org/wiki/Cemex

[C64] Wikipedia: SS Alpena (1942)

Read. the article in full.

Supports. the Great Lakes cement carrier fleet and the Alpena's longevity in Moving a Heavy, Cheap Thing.

Limitations. tertiary source; vessel particulars are publicly documented.

https://en.wikipedia.org/wiki/SS_Alpena_(1942)

[C65] Hugh Holland Archive: Why Empty Swimming Pools Changed Skateboarding Forever

Read. the essay in full.

Supports. the empty-pool episode of 1970s California and concrete's unintended cultural afterlife in The Architecture of the Grey.

Limitations. a photographer's retrospective essay; cultural history, deliberately included as such.

https://hughholland.com/empty-pools.html

[C66] Fondation Le Corbusier: Vocabulaire

Read. the vocabulary pages on béton brut, the Dom-Ino frame and the Modulor.

Supports. the béton brut aesthetic, the Dom-Ino system and the Modulor's measure in The Architecture of the Grey.

Limitations. the foundation's canonical presentation of its own architect; the critical reception of Brutalism is drawn from the wider record, not from the foundation.

https://www.fondationlecorbusier.fr

[C67] IHBC Context: The history of reinforced concrete

Read. the article in full.

Supports. the Monier-to-Hennebique development of reinforcement and the early patent wars in Steel Learns to Trust Stone.

Limitations. a conservation-profession journal article; solid on the British thread, thinner elsewhere, and the book uses it accordingly.

https://ihbc.org.uk

[C68] Vitruvius: The Ten Books on Architecture, Book II, Chapter VI (Perseus Digital Library)

Read. the chapter in full, in translation.

Supports. the primary-source quotation on pozzolana that opens the Rome chapter; the Roman understanding of the powder that outlasted the empire.

Limitations. a two-thousand-year-old text in translation; quoted for what Vitruvius wrote, with no modern chemistry read back into it.

http://www.perseus.tufts.edu/hopper/text?doc=Perseus:text:1999.02.0073:book=2:chapter=6

[C69] GCCA: About Cement & Concrete

Read. the association's pages.

Supports. concrete's position as the most used material on Earth after water, and the per-capita consumption framing of The Powder Beneath Everything.

Limitations. the industry's global association; the usage claims are broadly accepted but are the industry's own framing.

https://gccassociation.org/our-story-cement-and-concrete/

[C70] U.S. Department of Energy: Industrial Demonstrations Program

Read. the program pages.

Supports. the federal demonstration-funding context for the new-process awards in Catching the Carbon and The Challengers.

Limitations. program description; individual award figures are taken from the awardee announcements (C48, C49).

https://www.energy.gov/oced/industrial-demonstrations-program

[C71] ASCE: Thomas E. Stanton, Influence of California Cement and Aggregates on the Expansion of Concrete

Read. the paper's record and abstract.

Supports. Stanton's 1940 identification of the alkali-aggregate reaction and its expansion mechanism in When Concrete Fails.

Limitations. the library record and abstract; the mechanism described is textbook-settled and cross-checked against the general literature.

https://ascelibrary.org

[C72] Samuels & Drakeley: Beginnings (Shotcrete, Summer 2015)

Read. the article in full.

Supports. Carl Akeley's cement gun, the 1907 Field Columbian Museum facade job, the 1911 patent (No. 991814) and the gunite trademark story in One Powder, Many Cements and the Timeline.

Limitations. a trade-magazine history by shotcrete-industry professionals; well-sourced within the trade, and used for the documented dates rather than for any market claims.

https://shotcrete.org/wp-content/uploads/2020/05/2015Sum_Samuels-Drakeley.pdf

A closing note on method. Every figure in the book that could change a reader's mind about the world is tied to one of the entries above, and every entry above was opened and read during the writing. Where two responsible sources disagreed — the carbon share of cement, the capacity of India's largest producer — the book reports the disagreement rather than splitting the difference. Where the future is discussed, in the chapters of Part Seven and Part Eight, it is discussed as scenario and forecast and is labelled as such in the text. The remaining errors are the author's own.