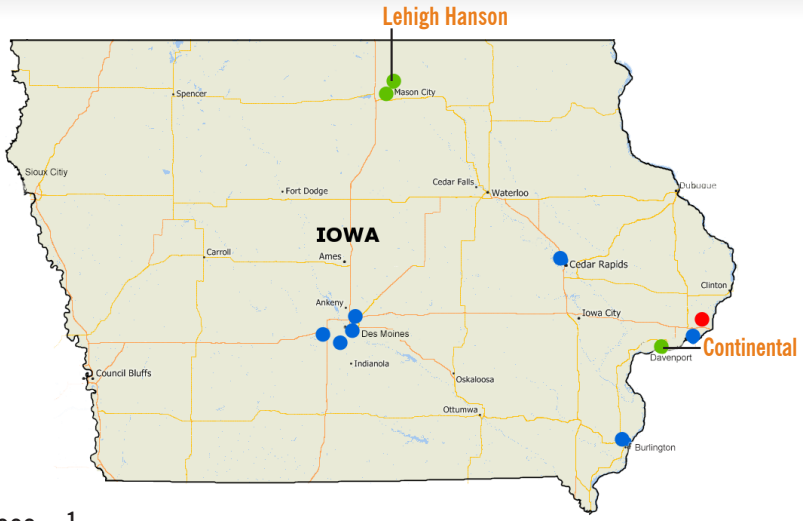
PCA Since 1916
America's Cement Manufacturers™

IOWA CEMENT & CONCRETE INDUSTRY

NORTH AMERICAN CONCRETE ALLIANCE



- Offices - 1
- Plants - 2
- Terminals - 7

- A red dot indicates the location of a cement sales office or headquarters.
- A green dot indicates the location of a plant producing portland cement.
- A blue dot indicates the location of cement distribution terminals and silos.

IOWA • Chuck Grassley (R)	Joni Ernst (R)	
Company	**Plant Location**	**House Members**
Continental Cement	Buffalo	Dave Loebsack (D-2nd)
Lehigh Hanson	Mason City	Steve King (R-4th)

PORTLAND CEMENT MANUFACTURING AND USE

The Portland Cement Association (PCA) represents 92% of US cement manufacturing capacity with more than 90 plants in 32 states and distribution facilities in every state in the continental U.S.

NORTH AMERICAN CONCRETE ALLIANCE

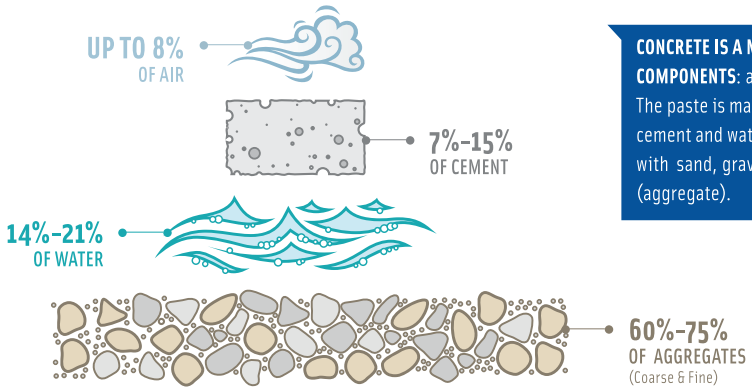
The North American Concrete Alliance (NACA), formed in 2004, is a coalition of twelve concrete and cement-related associations dedicated to addressing industry-wide priorities in the areas of research, safety, education, economic recovery and government affairs. Cement and concrete product manufacturing directly or indirectly employs approximately 610,000 people in our country, and our collective industries contribute approximately $125 billion to our economy. Our member Associations represent businesses and talented workers in all fifty states.

	Iowa		National
	Cement	Cement & Related	Cement
Employees	347	3,046	13,190
Payroll ($)	19,842,822	151,865,733	848,203,728
Contribution to State Taxes Revenues ($)	5,118,954	44,930,500	181,191,344
Economic Contribution ($)	416,599,984	2,380,974,667	19,293,119,956

Cement or concrete? Cement is manufactured by heating lime, silica, alumina, iron, and other materials at high temperature. The resulting substance is a marble-like ball called clinker that is ground, mixed with limestone and gypsum, and used to create concrete.

Concrete is basically a mixture of aggregates and paste. The aggregates are sand and gravel or crushed stone; the paste is water and cement. Portland cement is not a brand name, but the generic term for the type of cement used in virtually all concrete, just as stainless is a type of steel and sterling a type of silver.

COMPONENTS OF CONCRETE



CONCRETE IS A MIXTURE OF TWO COMPONENTS: aggregate and paste. The paste is made up of portland cement and water, which then binds with sand, gravel or crushed stone (aggregate).

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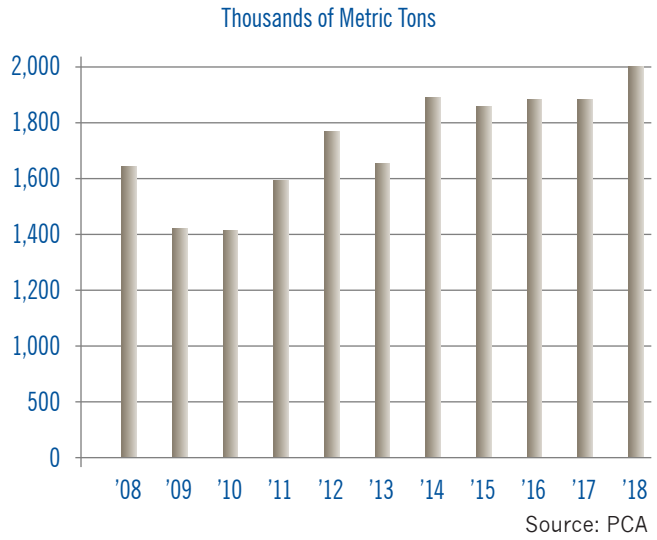
Building the Foundation of Iowa's Economy

IA Cement Consumption



Source: PCA

State Economic Data

- Theoretical clinker capacity: 1.7 million metric tons (1.9 million short tons)
- Theoretical cement production capacity: 1.8 million metric tons (2.0 million short tons)
- Cement consumption: 2.0 million metric tons (2.2 million short tons)

U.S. Economic Data

- Theoretical clinker capacity: 97 million metric tons (106.9 million short tons)
- Theoretical cement production capacity: 106.5 million metric tons (117.4 million)
- U.S. cement companies have annual sales valued at approximately $10.3 billion

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Energy and Environment The U.S. cement industry is committed to minimizing emissions, waste, energy consumption, and the use of virgin raw materials. For example, the cement industry began to address climate change in the mid-1990s—one of the first industries to do so. Over the past 40 years, U.S. cement manufacturers have reduced the amount of energy required to produce a ton of cement by over 40 percent. The industry also has reduced its use of traditional fossil fuels by over 15 percent. In 2018, The Environmental Protection Agency ENERGY STAR® Program recognized 100 manufacturing facilities in the U.S. as ENERGY STAR® certified facilities as operating in the top quartile of efficiency in their respective industry sectors. The cement industry represented 24 of those recognized facilities.

Sustainability The industry is a leader in sustainable material and fuel use. Industrial byproducts like coal combustion residuals, steel blast furnace slag, and silica fume provide valuable sources of critical elements like aluminum, iron, and silica used in the clinker production process. Agricultural, industrial, and consumer waste streams like biomass, paper, plastic, fabrics, and fibers provide valuable sources of low-cost, low-carbon energy for cement kilns. By using these materials as valuable input and fuel commodities rather than discarded wastes, the cement industry essentially expands the circular economy and diverts materials from landfills.

The durability, resiliency, and insulating qualities of cement-related products also lower our environmental footprint. Concrete does not rust, rot, or burn, saving energy and resources needed to replace or repair damaged buildings and infrastructure.

Because of its rigidity, concrete pavement can enhance the fuel efficiency of vehicles that travel on roads when compared to other pavements. If concrete pavements were used by the U.S. road system, fuel consumption is estimated to decrease by 3 percent nationwide, equating to a reduction in fuel consumption of 273 million barrels of crude oil a year, and a corresponding reduction decrease of greenhouse gas emissions by 51.2 million short tons.

Cement and concrete building materials also exhibit excellent thermal insulating qualities, improving the energy efficiency of buildings when concrete is used. Studies by the Massachusetts Institute of Technology have shown that homes with concrete walls can use 8 to 15 percent less energy than other homes.

Occupational Health and Safety PCA members place the safety of their employees among their core values. According to one important safety metric, between 2009 and 2016, the Total Case Incidence Rate (TCIR) for the cement industry dropped by 29 percent, averaging 4.5 percent per year. The industry's commitment to safety contributed to the Federal government's recognition of 2015 as the safest year on record for Metal and Nonmetal miners, which includes our industry. For the cement industry, 2018 was one of the best years on record; with record low injury rates, zero fatalities, and 22 percent of cement facilities incurring no Mine Safety and Health Administration Recordable Injuries in the year.

Transportation/Infrastructure A well-functioning transportation network is the backbone of the U.S. economy and essential for U.S. businesses to compete globally and provide the best value to American consumers. Our nation's core infrastructure should not only be maintained, but also continuously updated to meet the needs of the 21st century. An efficient and well-functioning transportation network is essential to maintaining U.S. economic competitiveness. Economic growth, personal mobility, and public safety are dependent on proper funding and financing solutions for long-term infrastructure investment. Portland cement is an essential construction material and is uniquely positioned for the rebuilding of American infrastructure.

Resiliency Building owners, builders, architects, and designers have come to recognize that durable concrete public buildings, private homes, and businesses resist damage from natural disasters and reduce the impact entire communities have on our planet. Resilient construction is critical to our nation in order to protect public health and safety, control federal disaster costs, and strengthen the building stock on which America's economic vitality depends. Infrastructure built with resilient construction techniques is able to resist damage, continue to serve its primary function during a disaster, and minimize the recovery process.

In areas of the country that are hazard-prone, maintenance costs associated with these natural disasters can exceed the initial building cost. According to the National Institute of Building Sciences, for $1 invested in hazard mitigation, up to $6 can be saved in future disaster recovery costs. Cement is a critical part of improving the resiliency of our nation's infrastructure.