Glossary

Α.

Aggregate

One of the main materials that make up concrete, along with cement and water. This includes gravel (coarse aggregate) and sand (fine aggregate).

AK System

A system in which household waste and general business waste are biodegraded (fermented) in a waste recycling kiln and recycled as raw materials and fuel for ordinary Portland cement.

B

Bag filter

Equipment that uses cloth to filter dust that is contained in an air stream. When applied to a cement kiln, the amount of dust in the exhaust gas can be reduced to extremely low levels.

Blast furnace slag

A by-product of the iron and steel making process to remove impurities from steel products, and sometimes referred to simply as slag.

(\mathbf{C})

C2SP Kiln

A clinker firing furnace capable of directly capturing a high concentration of CO₂ by separating the combustion gas system from the oxygen-fired calciner. It inherits the features of the NSP kiln.

CARBOCATCH

A CO₂ mineralization technology that uses carbonation. CO₂ can be efficiently mineralized in concrete by mixing cement slurry that has absorbed CO₂ with water.

CARBOFIX cement

A special cement that cures by absorbing CO_2 . CO_2 emissions are reduced by 60% compared to ordinary Portland cement.

Carbon pricing

A policy approach that seeks to change the behavior of emitters by putting a price on CO₂ emissions. Carbon taxes and emissions trading schemes are typical examples.

Cathode material

156

Material used for the positive electrode of a battery.

A series of systems in which CO₂ captured from the exhaust gases of coal-fired thermal power plants and other factories is stored in depleted oil fields and submarine formations.

CCU

CCS

A series of systems in which CO₂ captured from the exhaust gases of coal-fired thermal power plants and other factories is reused directly or as an industrial raw material.

CCUS technology

A generic term for a series of technologies that captures CO₂ and either utilizes it or stores it permanently.

Cement based high-strength grout

A material injected at construction sites to fill gaps and reinforce joints or the ground. It is required to be non-shrinking and highstrength.

Cement based soil stabilizer

A cement-based ground improvement material that is used to provide long-term, stable strength enhancement to a wide range of soil types.

Cement calcination

In general, synonymous with clinker calcination.

Clinker

An intermediate, nodular cement product produced when the raw materials of cement such as limestone and clay are fired in a kiln.

Clinker calcination

A process in which the raw materials of cement such as limestone and clav are heated at 1,450°C to obtain clinker.

Clinker mineral

The minerals that make up the clinker. The main minerals are alite (C3S), belite (C2S), aluminate (C3A), and ferrite (C4AF).

Concrete slump

An index that indicates the consistency of multiple loads/batches of the same readymixed concrete and helps to identify its workability. One of the control items during concrete production.

Concrete surface repair materials

A cement-based material used to fill pinholes on the surface of concrete and repair formwork gaps.

D

Distribution terminal

An intermediate cement distribution center that connects cement plants and users. It is also called service station or SS in Japan.

Dolomite

A mineral that is derived from calcium bicarbonate, which is main component of limestone, with some of the calcium being replaced by magnesium.

B

Flv ash

Ash derived from coal which is generated from a coal-fired thermal power plant and is collected from the exhaust gas airstream by an electrostatic precipitator.

Fly ash blended cement

A blended cement that uses fly ash as a supplementary cementitious material.

Functional hollow particles

Minute, lightweight ceramic spheres which provide weight reduction and thermal insulation/shielding properties for use in coating materials for home appliances. electronic components, resin products etc.

G GCCA

Global Cement and Concrete Association. An industry association with about 47 cement manufacturing companies worldwide as regular members, covering about 40% of the world's production capacity.

Ground improvement projects

Construction projects that use cement-based soil stabilizers to reinforce weak ground at construction sites, ensuring buildings are safely supported.

œ

Heavy metal immobilizer

A material for mixing into soil that enables the safer treatment of construction soil by inhibiting the leaching of heavy metals that are specified in the Soil Contamination Countermeasures Act.

K Kiln

A furnace used for clinker firing - usually, a cylindrical rotary kiln with a diameter of 5-6m and a length of 60-100m.



Long wet kiln

A clinker firing kiln in which the raw materials are prepared in a muddy consistency and directly fed into the kiln. As the water is removed through evaporation, the thermal efficiency is low and not suitable for increased production.

M

Methanation

The synthesis of methane from CO₂ and hydrogen. This technology is attracting attention as it is carbon neutral through the use of green hydrogen.

N

Nanolitia

Lithium-ion battery cathode material that features high thermal stability and does not use cobalt.

Nature positive

Being aimed toward halting the loss of biodiversity and moving towards recovery.

New blended cement

A type of blended cement that is not included in the product specifications for blended cement, and is predicted to be made from multiple types of diverse supplementary cementitious materials.

NSP kiln

A clinker firing kiln which boasts excellent thermal efficiency and is equipped with a preheater consisting of four to five stages of cyclones and a combustion furnace called a calciner.



OSHMS

A framework for reducing potential dangers of occupational accidents at workplaces and promoting comfortable work sites by autonomously practicing continuous, uninterrupted health and safety management.

(\mathbf{P})

Phosphorus recovery

The process of recovering phosphorus from sewage and sewage sludge. Because "Rintoru" has a high phosphorus recovery rate and can be used as fertilizer, it is attracting attention as an alternative to natural phosphate rock, which is at risk of depletion.

Portland cement

and primarily refers to ordinary cement.

Power semiconductors

Semiconductors that control motors and lighting or convert power, and are characterized by the high voltages and currents they handle.

Precast concrete

Concrete products such as gutters, pipes, manholes, piles, bridge girders, and components of buildings that are prefabricated in factories.

Premix products

Commercial products that contain cement, sand and other materials in a predetermined ratio and can be mixed with water to make materials such as mortar.

Q 000

Quality control circle. Activities where employees and staff working on-site are divided into small groups to engage in continuous quality management and quality improvement efforts.

R

S

Rotary kiln

firing. It is sometimes simply called a kiln.

Shake Out drill

measures.

A generic term for commonly used cement,

A rotating cylindrical rotary kiln for clinker

An earthquake response drill in which all participants simultaneously take actions for their own safety, such as hiding under a desk, which provides an opportunity to confirm the everyday disaster prevention

Shield tunnel construction

A construction project in which a cylindrical tunnel is excavated using a shield machine to create an underground tunnel.

Slag

Blast furnace slag.

Sludge

A mixture of dirt and liquid. In particular, concrete sludge is generated during the production and laying of ready-mixed concrete.

Smart factory

A method of managing factory operations using digital technologies such as AI, IoT, and sensor technology, which not only improves productivity but also contributes to enhanced worker safety.

SP Kiln

A clinker firing kiln with a preheater consisting of four to five stages of cyclones. Thermal efficiency is improved by dry blending the raw materials.

Supplementary cementitious materials (SCMs)

Admixtures used as clinker substitutes or to improve the performance of concrete. These include by-products like blast furnace slag and fly ash, as well as natural materials such as limestone and pozzolans.



Total basin risk score

An assessment indicator of water risk: the WWF's Water Risk Filter and the WRI's Aqueduct are standardly used.



Ultra-pure silicon carbide

A compound of silicon and carbon with extremely high purity such as 3N (99.9% or higher). It is used as a raw material for semiconductors that handle high electric power.