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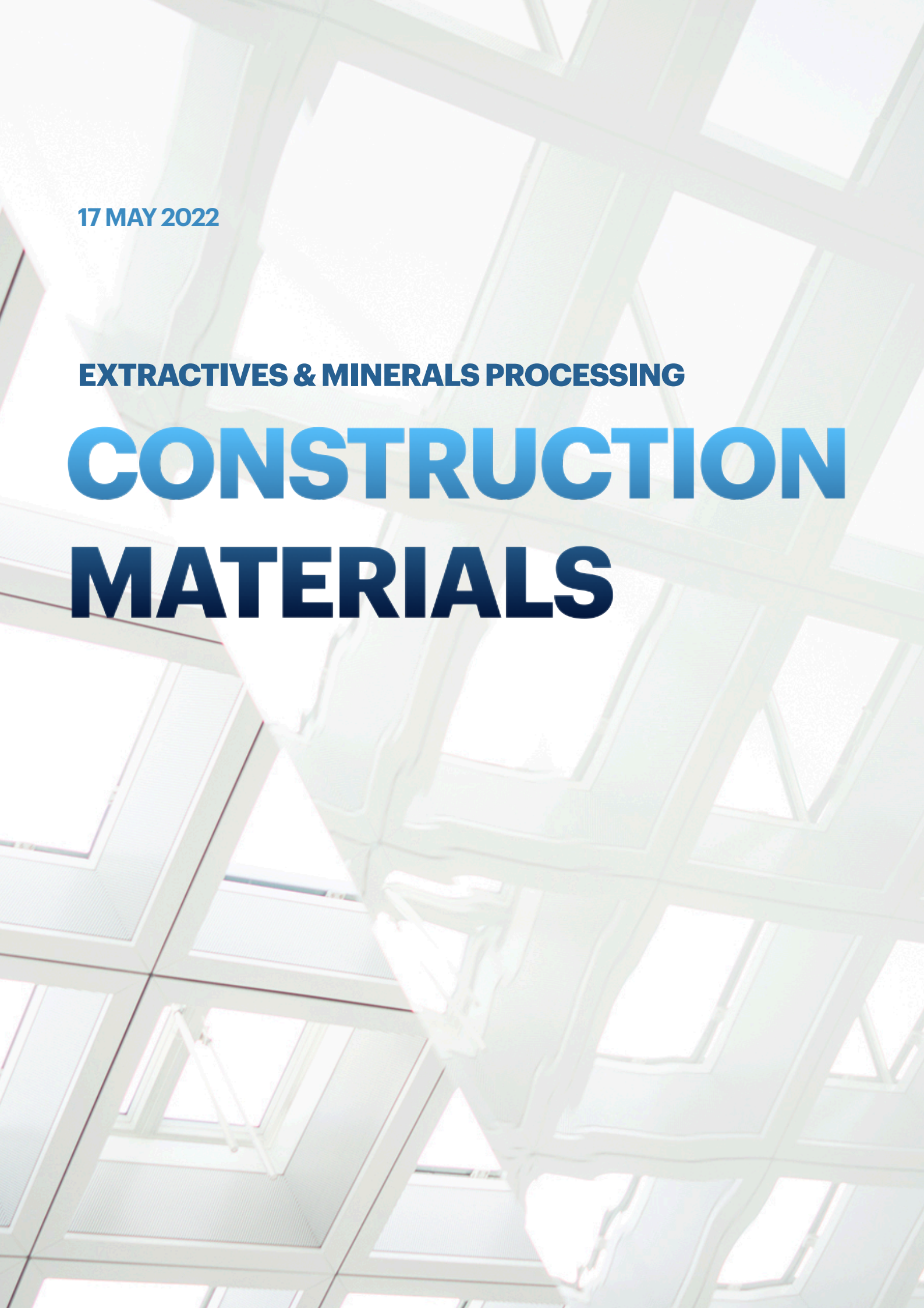
EXTRACTIVES & MINERALS PROCESSING

CONSTRUCTION MATERIALS



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Industry Sustainability Best Practices

SASB GUIDELINES

CONSTRUCTION MATERIALS

Construction materials companies have global operations and produce construction materials for sale to construction firms or wholesale distributors. These primarily include cement and aggregates, but also glass, plastic materials, insulation, bricks, and roofing material. Materials producers operate their own quarries, mining crushed stone or sand and gravel. They may also purchase raw materials from the mining and petroleum industries.

DIFFERENT SUSTAINABILITY RISKS AND OPPORTUNITIES DIMENSIONS

Greenhouse Gas Emissions

The production of construction materials, particularly cement, generates significant direct greenhouse gas (GHG) emissions from on-site fuel combustion and chemical processes. The industry has achieved gains in efficiency for reducing emissions per ton of materials produced. At the same time, increasing production is associated with an increase in absolute emissions from cement production. The production of construction materials remains carbon-intensive relative to other industries, exposing the industry to higher operating and capital

expenditures from emissions regulations. Strategies to reduce GHG emissions include: energy efficiency, use of alternative and renewable fuels, carbon sequestration, and clinker substitution. Operational efficiencies can be achieved through the cost-effective reduction of GHG emissions. Such efficiencies can mitigate the potential financial impact of increased fuel costs as well as direct emissions from regulations that seek to limit—or put a price on—GHG emissions.

Air Quality

On-site fuel combustion and production processes in the Construction Materials industry emit criteria air pollutants and hazardous chemicals, including small quantities of organic compounds and heavy metals. Emissions of particular concern include nitrogen oxides, sulfur dioxides, particulate matter, heavy metals (e.g., mercury), dioxins, and volatile organic compounds, among others. These air emissions can have significant, localized human health and environmental impacts. Financial impacts resulting from air emissions will vary depending on the specific location of operations and the applicable air emissions regulations, but could include higher operating or capital expenditures and regulatory or legal penalties. Active management of the issue—through technological and process improvements—could allow companies to limit the impact of regulations and benefit from operational efficiencies that could lead to a lower cost structure over time.

Energy Management

The production of construction materials requires a significant quantity of energy, sourced primarily from direct combustion of fossil fuels as well as from purchased electricity. Energy-intense production has implications for climate change, and electricity purchases from the grid can create indirect Scope 2 emissions. Construction materials companies also use

alternative fuels for their kilns, such as scrap tires and waste oil—often waste generated by other industries. If properly managed, these can lower energy costs and greenhouse gas (GHG) emissions. However, there could be potentially negative impacts, such as releases of harmful air pollutants that companies need to minimize in order to obtain net benefits from using such fuels. Decisions about use of alternative fuels, renewable energy, and on-site generation of electricity (versus purchases from the grid) can play an important role in influencing both the costs and reliability of energy supply. Affordable, easily accessible, and reliable energy is an important competitive factor in this industry, with purchased fuels and electricity accounting for a significant proportion of total production costs. The way in which a construction materials company manages its overall energy efficiency, its reliance on different types of energy and associated sustainability risks, and its ability to access alternative sources of energy can influence its profitability.

Water Management

The production of construction materials requires substantial volumes of water for the production process. Companies face operational, regulatory, and reputational risks due to water scarcity, costs of water acquisition, regulations on effluents or amount of water used, and competition with local communities and other industries for limited water resources. Risks are likely to be higher in regions of water scarcity, due to potential water availability constraints and price volatility. Companies that are unable to secure a stable water supply could face production disruptions, while rising water prices could directly increase production costs. Consequently, the adoption of technologies and processes that reduce water consumption could lower operating risks and costs for companies by minimizing the impact of regulations, water supply shortages, and community-related disruptions on company operations.

Waste Management

Recycling rates in construction materials production are high. However, wastes from production processes, pollution control devices, and from hazardous waste management activities present a regulatory risk and can raise operating costs. Cement kiln dust (CKD)—consisting of fine-grained, solid, highly alkaline waste removed from cement kiln exhaust gas by air pollution control devices—is the most significant waste category in the industry. Regulatory risk remains from evolving environmental laws, including those at local and national levels and for other waste streams. Companies that reduce waste streams—hazardous waste streams in particular—and recycle by-products, can therefore lower regulatory and litigation risks and costs.

Biodiversity Impacts

Construction materials companies often operate their own quarries close to processing facilities. Quarrying requires the removal of vegetation and topsoil. It also requires the blasting and crushing of underlying stone deposits. The process can lead to permanent alterations of the landscape, with associated impacts on biodiversity. The environmental characteristics of the land where quarrying takes place could increase extraction costs, due to increasing awareness and protection of ecosystems. Companies could also face regulatory or reputational barriers to accessing sites in ecologically sensitive areas. This may include new protection status afforded to areas where reserves are located. Ongoing quarrying operations may also be subject to laws protecting endangered species. Companies that have an effective environmental management plan for different stages of the project lifecycle—including restoration during site decommissioning—could

minimize their compliance costs and legal liabilities. These companies could face less community resistance in quarrying at new sites and avoid difficulties in obtaining permits and delays in project completion.

Workforce Health & Safety

Employees and contractors of construction materials companies face significant health and safety risks. Industry hazards include those arising from the use of heavy equipment and from quarrying operations. In addition to acute impacts, workers can develop chronic health conditions from silica dust inhalation, among other factors. Due to these hazards, the industry has relatively high fatality rates, and many companies have implemented a strong safety culture and health and safety policies to mitigate associated risks. Worker injuries, illnesses, and fatalities can lead to regulatory penalties, negative publicity, low worker morale and productivity, and increased healthcare and compensation costs.

Product Innovation

Innovations in building materials are a key component in the growth of sustainable construction. Consumer and regulatory trends are largely driving adoption of sustainable building materials and processes that are more resource efficient and can reduce health impacts of buildings throughout their lifecycle. This is creating new business drivers for construction materials companies, with an opportunity to increase revenues. Furthermore, some new products require less energy to produce, or use largely recycled inputs, reducing production costs. Sustainable construction materials, therefore, can contribute to a company’s long-term growth and competitiveness.

Pricing Integrity & Transparency

The construction materials market has been subject to instances of anti-competitive behavior, such as maintaining artificially high prices through cartel activity. Most countries have well-established fair business practice laws in place to prevent such behaviors. Business activity leading to price fixing or other manipulation of prices can lead to material legal fines or business disruption. Managing anti-competitive behavior within an organization can effectively mitigate regulatory risks, including those related to investigations of mergers and acquisitions or compliance costs.