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CO₂ capture meets mineralization in the liquid phase for a sustainable construction industry

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Carbon capture and utilization routes towards inorganic carbonates are being actively investigated to green up the construction industry, a large CO₂ emitter. Partnering with Blue Planet Systems, Sulzer is supporting the development and commercialization of a groundbreaking mineralization process that permanently sequesters CO₂ in highly sustainable synthetic limestone aggregates. The technology combines carbon dioxide captured in solution with metal ions in solution obtained from waste concrete from demolition sites, or other industrial waste materials, to attain metal carbonates that can be worked up into aggregates having equivalent strength, performance, and cost to quarried aggregates. 440 kg of CO₂ are locked up in every tonne of product, i.e. 10-40 times more CO₂ than through concrete curing approaches, making this net-negative solution a very appealing carbon sink for the built environment.