**PRESS RELEASE**

Local manufacturer’s products can assist in transforming to a low-carbon economy

**7 December 2021:** During the recent COP26 global climate conference, President **Cyril Ramaphosa** joined other leaders in announcing a historic partnership with the governments of France, Germany, the UK, the US and the European Union to support a just transition to a climate-resilient society in South Africa.

Local manufacturer [Pratley](http://www.pratleyminerals.com) has a range of products capable of supporting the country’s transition to a low-carbon economy, especially in terms of infrastructure development and energy savings, notes Marketing Director **Eldon Kruger**. These include Pratliperl®, an aggregate for plaster and screeds that can assist the construction industry in meeting quality standards such as SANS 204, which specifies the design requirements for energy efficiency in buildings. The product is a perlite-based, lightweight, thermally insulating and fireproof cement aggregate that is used instead of ordinary building sand.

Unlike ordinary Perlite, Pratliperl® is unique in that it is ideal for use with cement. This is because, unlike traditionally brittle and friable Perlites, Pratliperl® has a strong surface structure. “The end result is a unique, eco-friendly, and lightweight building material that is both fireproof and thermally-insulating,” comments Kruger.

During processing, Perlite ore is crushed to sugar-grain size and passed through a specially developed furnace. The perlite grains soften as a result, and the water trapped within their structure turns to steam, which escapes by diffusion. These grains, in turn, expand or inflate into a multitude of well-sealed lightweight glass beads with a vacuum inside. Expanded Pratliperl® is best described as comprising millions of tiny ‘vacuum flasks’, hence its unrivalled insulating and fireproofing properties.

Pratliperl® has a conductivity (K) value in a loose state of 0.05 W/mK, which is 20x more than ordinary sand. This property is derived from the low density and the ‘vacuum flask’ structure of the Pratliperl® beads. A mere 16 mm of Pratliperl® plaster on each side provides the same thermal insulation as a double-brick (220-mm-thick) wall, essentially meaning that the wall’s thermal insulation is doubled. “This incredible insulation value means architects have peace of mind that they can comfortably comply with energy-saving regulations such as SANS 204,” stresses Kruger.

The loose density of Pratliperl® is about 100 kg/m3. When mixed with cement, the practical concrete densities range from 300 kg/m3 to 1 100 kg/m3, depending on the mix, which is essentially concrete that floats on water. In addition to the almost refractory melting temperature of 1 250°, Pratliperl® concrete also maintains its high-temperature structural integrity due to its incredible thermal insulation.

The latter ensures a very high thermal gradient on the heated surface during fire conditions, resulting in low temperatures immediately below the surface. A mere 30-mm-thick Pratliperl® plaster will assure a fire rating of two hours and will release no smoke or fumes during a fire, giving it a distinct advantage over expanded polystyrene-based insulation products that may give off harmful fumes.

Pratliperl® concrete does not rely on air entrainment, and can be cured under any vibratory conditions. Once cured, it exhibits superior strength when compared to other lightweight concretes. The strength varies with density, but a practical strength from 1 MPa up to 15 MPa is possible. This far exceeds the strength of aerated or other similar light weight concretes of a similar density.

Applications for Pratliperl® range from plaster (internal and external thermal insulation) to lightweight floors for high-rise buildings, roof decks, fire barriers, precast mouldings, fireproofing for tunnels in mines, screeds, bathtubs, underfloor heating, tile adhesive filler, bricks and boards, pizza ovens, cryogenic tanks, loose-fill, a paint texturing agent, aggregate for refractory cements and as an insulating surface for molten metal.

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**Notes to the editor**

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**About Pratley**Established in 1948 by George ‘Monty’ Pratley, the various companies in the Pratley stable rest on a foundation of research and innovation in both the manufacturing and mining sectors. The various Pratley companies, drawing from 73 years of experience, have filed over 350 patents worldwide, and are ISO 9001 certified. Operating divisions are Pratley Adhesives, Pratley Electrical, Pratley Minerals, Pratley Craft & Decoupage, and Select Hairdressing Supplies.

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