

Natural Chemistry-Pure Science



**high purity**  
Limestone products

**Longcliffe**  
CALCIUM CARBONATES



# The value of Independence

**Longcliffe is both a quarry and a company. The quarry - which is between Ashbourne and Bakewell in Derbyshire - lies within the purest deposit of limestone in Britain, and one of the largest.**

The Company was established in 1927 by my great-grandfather, John Shields and it is still family owned - one of the very few independent hard rock quarries left in the UK and one of the largest.

We employ about 120 people - some of whose forebears worked for Longcliffe - and we are proud of the fact that many others have been with the company for over 25 years.

I hope the benefits of such independence, loyalty and cohesion are immediately apparent to our customers.

Our management structures are very flat - there are no hierarchies, so decisions are made quickly and responses to customers' needs are immediate and supremely flexible. Above all, Longcliffe's ethos has always been customer-oriented.

Every member of the company knows that our continuing success depends upon the quality of our products and their suitability for their required purpose: upon the immediate, accurate and courteous response to orders, small as well as large: and upon speedy delivery wherever in the UK our products are needed.

This brochure will tell you something about how we approach what we do, and about the extraordinary variety of purposes to which our limestone products are applied.

A handwritten signature in black ink, which appears to read "Robert Shields". The signature is written in a cursive style and is positioned above a thin, diagonal line.

**Robert Shields** (Managing Director)



# Pure limestone

the most useful mineral on the planet Earth, created



**Benefiting the entire UK and global environment today whilst helping to secure our local economic and ecological environmental benefits far into the future.**

The Longcliffe Quarry is situated close to the world famous Peak District of Derbyshire - an area of exceptional beauty and one of England's most important National Parks. Over 320 million years ago the whole of Derbyshire would have rested on the bed of a giant ocean and all around would be settling countless billions of shells and the skeletal remains of tiny sea creatures inhabiting a vast coral reef, to form this very pure limestone deposit now raised high above sea level.

We at Longcliffe go to great lengths to screen our operations and the necessary extraction and process equipment and machinery behind landscaped mounds and belts of trees, to contain and control any noise and to prevent, as much as possible, limestone dust being carried onto public roads or into the surrounding countryside.

Environmental matters are taken very seriously, with all issues being the direct responsibility of the Managing Director - a Derbyshire man himself and fiercely proud of Longcliffe's strongest of environmentally-friendly reputations and the company's huge investment in environmental protections.

Even prior to blasting, the quarry face is minutely surveyed by laser theodolite, enabling a computer model of the face to be generated. A very accurate design of explosive pattern is then produced thus keeping the environmental effects of blasting - noise, vibration and dust - to an absolute minimum for the benefit of the local community.

The massive environmental and economic benefits being harnessed from the Longcliffe operation are virtually infinite and almost immeasurable. They touch all of our lives, often without us knowing it: among countless other benefits, limestone is used to reduce acidity in rivers, to balance acidity in soil, improve drainage and aeration thus increasing crop yields,

by the environment over 320 million years ago



to purify sulphur emissions from power stations and other burners of fossil fuels and also to purify iron and steel in its production.

In natural block form, limestone is used for building, flooring and ornamental carving. Crushed, it is used as aggregate in road-building, for drainage, for making concrete, purifying water and refining sugar. In granular form, or as a powder, it is a vital animal food ingredient; it neutralises acidic soils; it purifies gases in power stations; it is a component in plaster, glass, ceramics, vinyl tiles, carpets, petfoods, plastics, rubber - even bread, toothpaste and paper.

Not all limestone is of sufficient purity to meet all of these requirements, however, Longcliffe limestone is and the quality and size of our deposit means that we can meet these requirements for many years to come.

*'countless billions  
of shells and the  
skeletal remains  
of tiny sea  
creatures  
inhabiting a  
vast coral reef'*



# The inherent quality of Longcliffe limestone was created by nature

**Its enhanced quality has been achieved through the application of pure science innovation and a continuous investment programme to achieve cost-efficient, contamination-free processing from the raw material at the quarry face to individual samples at the point of despatch, nothing is left to and chance - every minute aspect is under total control.**

The base quality of limestone deposits at Longcliffe are typically 99.5% pure calcium carbonate.

This combines with the capabilities and sophistication of our processes and machinery to enable us to offer an unusually broad range of products - over 100 in all, from large natural block limestone for monumental and building purposes, through granules for use in manufacturing processes which

demand very high levels of purity, such as in glass making, to talc-fine powders for applications such as extending rubber in carpet backing.

Plant and machinery is constantly being upgraded. We pursue an active and substantial re-investment programme in all areas. Automation and computerised controls operate at all stages. All plant is monitored by computer, to identify potential problems before they occur. If error or overload is identified, the system automatically doses down.

Stone is sampled from the quarry face before blasting, after crushing and prior to despatch.

Tests include the analysis of trace elements by XRF, the distribution of particle-size in fine-milled limestone by Laser Analyser and the measurement of surface area by BET.

Our Statistical Process Control (SPC) guarantees the highest standards of Quality Assurance throughout the production process.

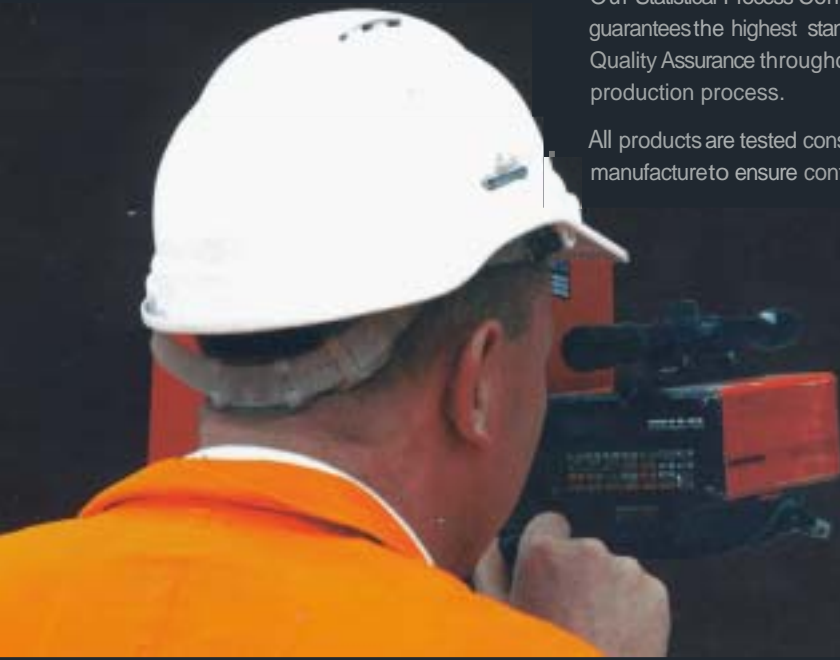
All products are tested constantly during manufacture to ensure conformity with



published specifications and samples taken from individual tankers prior to despatch in order to make possible the issuing of Analysis and Conformity Certificates if these are required.

The tests are conducted using highly sophisticated instruments which measure pH levels and trace elements, analyse particle size and evaluate colour.

All records are held on computer and SPC makes it possible to spot trends which might be creeping into stone quarried from a particular area.





Longcliffe extracts,  
processes, stores  
and transports  
over 4,000 tonnes  
of product every  
working day

With 99% scheduled to be delivered the following day, if not the same day deliveries made without fail, whatever the weather, 365 days of the year, working 24 hours a day when necessary, and delivered to locations all over the UK. At Longcliffe, in the interests of prompt service and assured supply, everyone knows how of process and action an urgent order - and our own fleet of vehicles and drivers deliver the goods.

In all areas of order processing and logistics management, Longcliffe personnel are supported by highly sophisticated and well proven technology. Computerisation guarantees speed and accuracy of reaction and makes it possible to truly tailor our services to the needs of customers.

Our team of sales co-ordinators keep in touch with customers to anticipate their requirements and, if customers' specifications change we have the capacity to respond very quickly.



Our sales force covers the whole of the UK and offers a portfolio of over 100 products, many of them tailored to individual customers needs. Our sales support teams provide additional back-up at local levels - for example in supplying free soil testing services to farmers, to gauge the pH levels and recommend the amount of agricultural lime that should be spread.

The fact that we have our own fleet of bulk pressure tankers and tipper trucks and also carry out our own vehicle maintenance and repairs on site, means that even very tight delivery deadlines can be met reliably.

Where necessary, our vehicles are totally dedicated to the carrying of bulk calcium carbonate - thus avoiding any risk of contamination - maintaining Longcliffe's quality control right up to the final point of delivery.

Genuine customer service is paramount at Longcliffe, so much so that we also encourage our delivery drivers to have a powerful sense of personal responsibility to not only Longcliffe customers, but also 'their' customers - with many of whom they have become firm friends over the years - and this combines with the quarry's location close to the centre of England, to ensure quick, reliable and timely deliveries to accommodate every individual need whenever and wherever it is required.

Being totally under our own control we can also ensure that with every truck leaving the quarry with the Longcliffe product, it first passes through an efficient wheel washing plant to minimise the amount of limestone dust taken out onto the lanes and highways of Derbyshire.



A continuing commitment to the future includes the development of new products, new processes investigation and research into alternative sources of minerals and new applications



which we undertake our own research into all aspects of calcium carbonate manufacture.

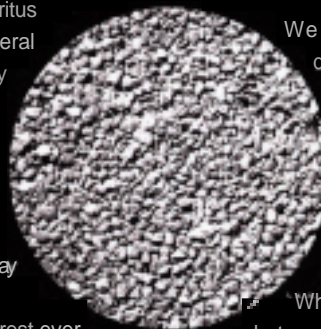


On-going projects include an innovative kiln process for the development of reactive limes and hydrates offering increased efficiencies for end users in high value applications.

The further developments of super-reactive limes and hydrates new chemical processes to enable the tailoring of the unique quality of our products to meet new customer requirements the quest goes on

Other programmes include intensive research into precipitates of calcium carbonates for use as fillers and coating agents for high volume production applications including plastics and paper.

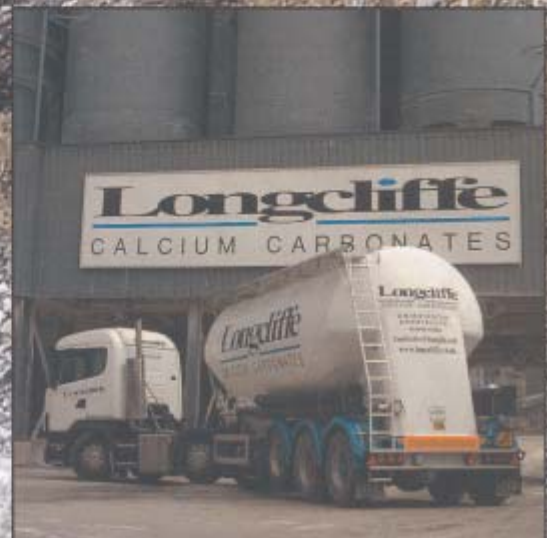
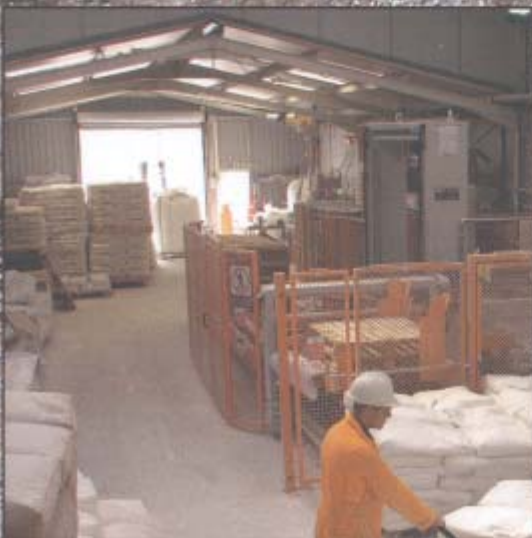
Professor Peter Young, Emeritus Professor of Mining and Mineral Engineering at the University of Leeds and Head of Research at Longcliffe, states that having examined calcium carbonate deposits from all over the World, he can say categorically that those at Longcliffe are among the purest ever encountered, and thus the most broadly adaptable for industrial uses.



We are investigating and developing chemical processes which will enable us to tailor the quality of our products to the specific requirements of customers, particularly as these relate to grade uniformity.

This in-built quality is cornerstone for the continued improvement of existing products and the development of new ones achieved through advances chemistry and science, for which we have our own laboratory on site and in

Whatever the customers needs, whatever the application, the certainty is that Longcliffe's high quality calcium carbonate products, combined with its specialist knowledge and processing skills, will be amongst the best - if not the best - in the world to meet those needs.



**A continuing, ongoing,  
commitment to the Company,  
to the local environment and  
to the local economy.**

At Longcliffe the long term reserves of this high quality limestone are substantial and will serve the Company and the UK and World marketplace for many decades to come, however, as with all mineral extraction processes, the valuable resource mined or quarried is not renewable and therefore the quarry's life is finite.

Even though in Longcliffe's case this is well beyond the foreseeable future, the company has considered this and already has plans in mind to secure its own future and that of the local economy and workforce.

Some of the sophisticated and ecologically sympathetic screening measures already in place now for many years, form a part of that long term foresight, planning and investment programme to ensure a lasting legacy from the time - over 320 million years ago - when the purest of limestone was first laid down for past, present and future generations to benefit from

**Calcium carbonate of the  
highest purity..**

**Longcliffe**  
**CALCIUM CARBONATES**

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