

# Dorset Ball Clay



## What is Ball Clay?

Ball clay has been regarded for many years as a mineral of national and international importance because of its special qualities and rare occurrence. Within the UK, ball clay only occurs commercially in the Wareham Basin of East Dorset and at two sites in Devon. It is used primarily in the ceramics industry for the production of wall and floor tiles (about three quarters of output), tableware, sanitary ware and electrical insulators. It is also used as a filler in certain rubber and plastic products such as windscreen wipers, spark plugs and garden hoses.

Its name dates back to the early methods of mining when specialized hand tools were used to dig the clay in rough cube shapes of about 30 cm. As the corners were knocked through handling and storage these cubes became rounded and 'ball' shaped.

It is a highly plastic material composed largely of clay minerals, of which kaolinite is the most important, together with quartz, metal oxides and carbonaceous matter. The inherent properties for which it is valued are high plasticity and dry strength - characteristics which are of particular importance in the ceramic manufacturing industries. Its white-firing characteristics are also important for some applications.

Because of the demanding technical specifications of the ceramics industry and the natural variations in the raw mineral deposits, it is necessary for the industry to blend clays from several sources to produce consistent marketable products. Furthermore, unlike, for example, aggregates where a supply contract may be for one specific project lasting only a few weeks or months, the ball clay industry has to supply ceramic manufacturers with a consistent blend of material over a period of many years. This calls for long-term security of reserves. Currently, six sites extract over twenty different types of clay to produce saleable products.

As a reflection of the importance of ball clay, special consultation procedures were established in 1953 with the creation of the "Ball Clay Consultation Area" to ensure that the mineral is not unnecessarily sterilised. All these factors have contributed to setting ball clay apart, to some degree, from other minerals extracted in Dorset.

## Where is Ball Clay Found?

The ball clays of Dorset are contained within a sequence of sediments referred to as the Poole Formation, which consists of interbedded sands, silts and clays deposited in the flood plain of a major river system some 40 - 50 million years ago (see diagram).



The area within which ball clay is found extends over some 160 square kilometres and is centred on Wareham. The southern and eastern part of the area lies within the Dorset Area of Outstanding Natural Beauty.

Currently about 70% of production is from within the AONB. In addition, there are many areas of national or international nature conservation interest within the area of ball clay deposits. Consequently, Dorset's ball clay reserves are becoming increasingly constrained by environmental designations.



There are currently six opencast workings, at

- Trigon
- Doreys
- Povington
- Hawkpost
- Furzeyground and
- Arne.

The last underground ball clay mine closed in 1999.

All processing of the clay takes place at the works at Furzebrook for processing.

The overburden at many ball clay pits includes large amounts of sand and gravel which has potential to be used as mineral. In recent years some of this mineral has been utilised, but doing so can have an impact on the restoration of clay pits, and generates additional lorry traffic.

### **Ball Clay Production and Distribution - Key Facts**

- Annual UK production of ball clay is just over one million tonnes, of which about 20% comes from Dorset.
- Over 80% of this output, both from Dorset and nationally, is exported.
- Exports are mainly to Italy and Spain and other EU countries.

### **Possible issues for discussion**

- **Should ball clay extraction continue in Dorset? What are the economic implications?**
- **Secondary aggregates – should the working of sand and gravel from ball clay sites be encouraged or discouraged?**
- **Should we encourage mineral extraction in the AONB or other sensitive locations? Is it appropriate only for certain minerals like Ball Clay? What scale of extraction?**
- **Is the current “Ball Clay Consultation Area” appropriate?**