INTRODUCTION

Churchill Dining Out is a leading British manufacturer of vitrified tableware for the hospitality industry based in Stoke-on-Trent. With more than 200 years of experience in manufacturing, the Churchill brand is synonymous with quality, service and exceptional durability, resulting in it being one of the strongest ceramic bodies in the world.

Our blend of historical expertise and high quality products ensure that we meet customer, industry and statutory expectations to the highest level.

With more than 300 distributors worldwide in over 40 countries, our brands reflect the global demands of the market and suit every international cuisine.

Due to our commitment in manufacturing, we have numerous and prestigious customers all over the world, such as the Spanish chain NH Hotels, Sheraton Hotel in Stockholm, Emirates Golf Club in Dubai, Hyatt Hotel in Seattle and many more.

Churchill also is committed to having more than 4 million pieces of packed stock at any one time from our standard range for a prompt despatch.

This presentation will give you an insight into the production process of Churchill vitrified products and the quality standards we adhere to in order to provide you with the highest quality crockery.
GREAT PRESENTATION THAT LASTS
Less replacements, less breakages, less chips, less metal marking
Great design. High glaze resistance prolongs the life of the product, an ultra smooth surface with excellent resistance to metal marking. We have worked to produce the smoothest, flattest, un-pitted surface finish.

INDUSTRY STANDARDS
We pride ourselves in the quality of our products and are dedicated to constantly raise industry standards. Our In-house quality team ensure nothing but the best quality in every box, every time.

ECO GLAZE
Enhances product performance, prolonging the life of the product, improving stain and metal mark resistance and durability. Excellent stability prevents thermal shock and crazing. A fully glazed base also prevents damage to ware when stacked.

CHIP RESISTANCE
Eliminate the costs caused by edge chips. Products in our brochure that carry the warranty have this symbol.

DISHWASHER, MICROWAVE & FREEZER SAFE
For your peace of mind, our product has been independently tested by CERAM Research to be microwave and freezer safe. Products can withstand the rigours of increasingly powerful industrial detergents and have been tested to perform up to 5000 dishwasher cycles.

STRONG BUT STREAMLINED
Lightweight, attractive product that is more than capable in any Back of House Environment.

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UNITED KINGDOM ACCREDITATION
SERVICE APPROVED LABORATORY
• Ball Clays from Devon and Dorset
• China Clays from Cornwall
• Felspar from Norway
• Flint from Denmark
• Alumina from India
• Cobalt stain from Germany and South Africa
• Sand from Scotland

All materials are carefully selected and suppliers are continually audited to ensure that the best raw materials are sourced.

The ceramic body is formed from selected high grade materials to a recipe determined by potting skill combined with chemical analysis and the requirements of the body to perform both during manufacture and in the market place.

The addition of alumina increases whiteness and strength of the fired body but there is an optimum amount after which the strength of the body does not increase.

The Churchill body is tested for strength in the bisque state and has given results of 16,000 p.s.i. when pressure is applied to a bar of fired body. This shows the body withstanding a pressure of 16,000 p.s.i. before breaking which is almost twice the strength of earthenware.
CRITICAL FACTORS IN BODY PRODUCTION
• **Bisque firing** - clay body is fired in excess of 1200ºC which is far higher than the firing given to porcelain for the first time which is only fired to 900ºC and as high as that of bone china.

The body is held at 1200ºC for over 33 hours to ensure total vitrification of the body so that it can satisfy the requirement of the standard BS4034 (1990) which demands a water absorption of less than 0.4% making the body impermeable to water which is imperative for the demands of the catering environment.

The standard BS4034 also demands that the product when glazed can be subjected to steam at 340+/−10 kPa. for 16 hours without crazing. Due to the strict controls carried out by Churchill over the materials and processing, our hotelware products have been tested to twice this stringent standard and have not crazed.

• **Glaze** - The clear glaze used is a low solubility glaze which means that although it contains lead it is in the form of lead bisilicate which makes it stable to give very low toxic metal release. The glaze is formulated to give an impermeable surface which has good cleanability with excellent scratch resistance and durability against alkali attack from dishwashing agents. The glaze is fired at 1080ºC.

• **Decorations** - The decorations are fired on glaze as is bone china. The decorations have been specifically formulated to withstand firing temperatures of between 700ºC - 750ºC. At 850ºC the glaze softens and the decoration is absorbed into the glaze. This combined with the flux coatings give excellent durability in dishwashers and low toxic metal releases.
CERAMIC BODY
• **Water Absorption** - The body, which contains 15% alumina, has been formulated to give strength and whiteness, whilst being totally impermeable to water for hygienic purposes. Water absorption tests are carried out regularly and give a result of maximum 0.4%, which is well within the British Standard.

The water absorption testing procedure is to take a weighed piece, boil it for four hours, soak it for 24 hours, then reweigh it and calculate the increase as an average percentage of the original.

• **Modulus of Rupture** - Firing to 1230°C at the initial stage gives a body strength of 16,000 p.s.i. This modulus of rupture is very high, indicating the strength of the high alumina body.

• **Crazing** - The ware is subjected to steam at 340+/−10 kPa. and inspected macroscopically every hour for crazing. The Churchill product considerably exceeds the specification of 16 hours for vitrified ware cited in BS4034.

• **Firing** - Each piece is fired up to 1200°C at the bisque stage and 1060°C at the gloss stage. Most decorations are applied on-glaze and are fired to up to 850°C.

• **Durability (BS 12875 pt. 5)**

The glaze used is formulated to give durability, vital for a catering environment. The on-glaze colours used are of a low solubility flux type which gives a high resistance to alkali attack.

All ranges are microwave safe, with the exception of those containing gold, platinum and some metallics.
All Churchill Hotelware products are vitrified as laid down in the standard:-
BS4034 for Vitrification and the Ceramic Ware (Safety) Regulations 1988.

We also comply with the following statutory requirements:

- ISO 6486
- FDA
- Prop 65
- AS/NZS 4371:1996
- BS 6748/2005/31/EC
- BSEN 1388 Part 1 & 2
- 85/500/EEC
- 84/500/EEC – 2005/31/EC
- EU2005/31/EC
- BS 12875 pt. 5

*All products are tested through UKAS BS4316 laboratories so all products conform to the above standards.
Even though quality tests are built-in at every stage of the production process, the ware is still 100% inspected after each firing by a team of trained inspectors. Quality checkers are also used to check the packed stock at random.

Furthermore ‘Action Improvement Teams’ are now being developed. These teams meet regularly to discuss the methods of improving quality of the product and present their findings to the Production Director, the Works Manager and the Quality Control Manager.
Churchill Hotelware has been awarded the ISO 9001 by the Ceramic Industry Certification (CICS), who are a B.S.I. Accredited Body. Our Certification is to BS5750 Part II.

The Certification BS5750 means that we have now systemised all our procedures from the order receipt, through production to despatch, to ensure consistency of both product and service.

Churchill China works very closely with external organisations and trade bodies, such as:

- Trading Analysts
- The Department of Food Safety at Staffordshire County Council
- Coalition for Safe Ceramics
- BCGTMA (British Ceramic and Glass Tableware Manufacturing Association)
- British Ceramic Confederation
The Churchill Environmental Management System is applicable to activities included and associated with the design, manufacture, packaging and sale of our vitrified hotelware products.

Our strategy to minimise our own impact and, in turn, our customers’ impact on the environment is important to us.

We are continually dedicated to helping our customers achieve their environmental targets by reducing our own energy use and taking responsibility for raw materials sourcing.