



ESL ELECTRO-SCIENCE

CERAMIC TAPES &
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POROUS ZIRCONIA ADDITION TO ESL ELECTRO-SCIENCE COVER PLATE PRODUCT LINE

King of Prussia, PA (USA), November 3, 2005 - ESL Electro-Science announces the addition of porous zirconia cover plates to its product portfolio.

An ESL cover plate is a porous, fired ceramic plate used to cover green ceramic parts during firing. Porous alumina and zirconia plates find use in applications such as the manufacture of SOFC and other fuel cell electrolyte substrates, MEA's, interconnects, and other fuel cell assemblies. Though alumina cover plates can be used in most applications, zirconia cover plates may be required when diffusion reactions or contamination by alumina is a possibility.

The cover plate acts as a permeable flattening weight, reducing camber, warping or bowing during the initial firing of the part, while retaining gas permeability during organic removal. Use of a cover plate allows the replacement of a sintering or subsequent flat firing with a single-step firing process, thus reducing energy and other costs. The use of a porous weight or cover plate promotes creep flattening during the initial sintering process, without the grain growth experienced in a second firing. During this first firing a reduction in substrate camber, edge curling and rippling can be expected.

The cover plate may also be used as a refractory setter liner to avoid impurities from kiln or furnace furniture such as setters, saggars, batts or boats. Setter liners extend the life of kiln furniture, for example in ferrite and thermistor manufacturing. ESL cover plates can also find use as spacers between multiple green ceramic parts in a sintered stack, thus increasing kiln loading

With facilities in North America, Europe, China and Japan, and with over forty three years experience specializing in the development, manufacture and marketing of thick-film materials and ceramic tapes, ESL operates under ISO 9001:2000 and QS9000:1998 quality management standards.

As well as offering standard sizes in both alumina and zirconia, customized dimensions are also offered. A trial quantity sample pack available directly from the web site includes cover plates of several standard sizes.

ESL cover plates, ceramic tapes and screen-printable pastes will be on display on Booth 325 at the Fuel Cell Seminar to be held in Palm Springs, California, November 14-18, 2005.