



ESL ELECTRO-SCIENCE

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POROUS ALUMINA COVER PLATES TO AID IN FUEL CELL MANUFACTURING

King of Prussia, PA (USA), October 18, 2005 - ESL Electro-Science, the leading manufacturer of materials for SOFC and other fuel cells such as ceramic tape and screen-printable ink, announces a new product - porous alumina cover plates. ESL cover plates are available in a variety of sizes - details can be found on the company's web site, www.electroscience.com

A cover plate is a porous ceramic plate used to cover green ceramic parts during firing. Porous alumina 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.



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 alumina 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.

Alumina cover plates can be used up to a maximum temperature of 1550°C, and are re-usable, requiring only an occasional thermal re-flattening firing.

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.

The data sheet on the web site gives details of the standard cover plate sizes currently available, but 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.