

# PLASMA REINFORCED COATING SYSTEM FOR COOKWARE

## Application Data Sheet LE-WR-003

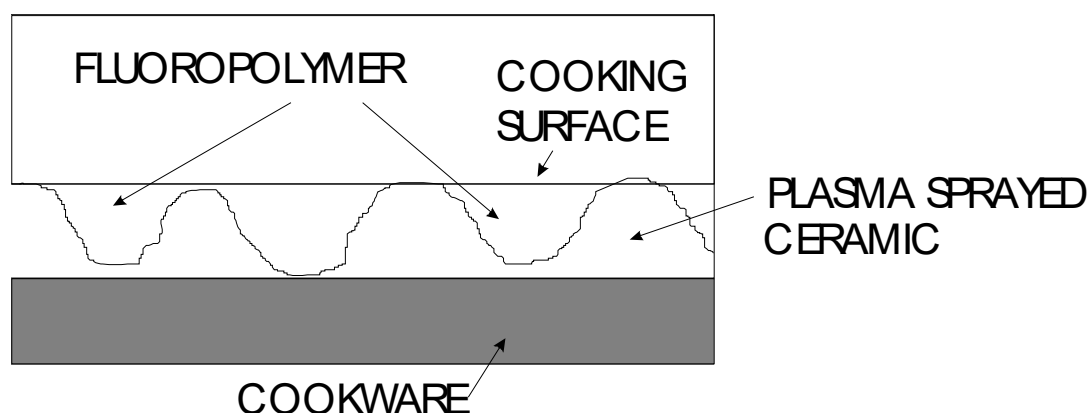
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### INTRODUCTION

The application of Plasma sprayed ceramic 99216 as a reinforced coating has been proven to increase the working life of many types of cookware. Even above that achieved by Arcsprayed Stainless Steel (LE-WR-002).

By producing a thin Plasma sprayed layer the fluoropolymer coating penetrates the sprayed surface. This produces high bond strengths and allows the high wear resistant ceramic to protect the fluoropolymer coating

(See Fig 1) from such items as cooking utensils.



### EQUIPMENT

Plasma Pistol: PL50 or PL50-90

Plasma System: Met-PCC(PLAS) System

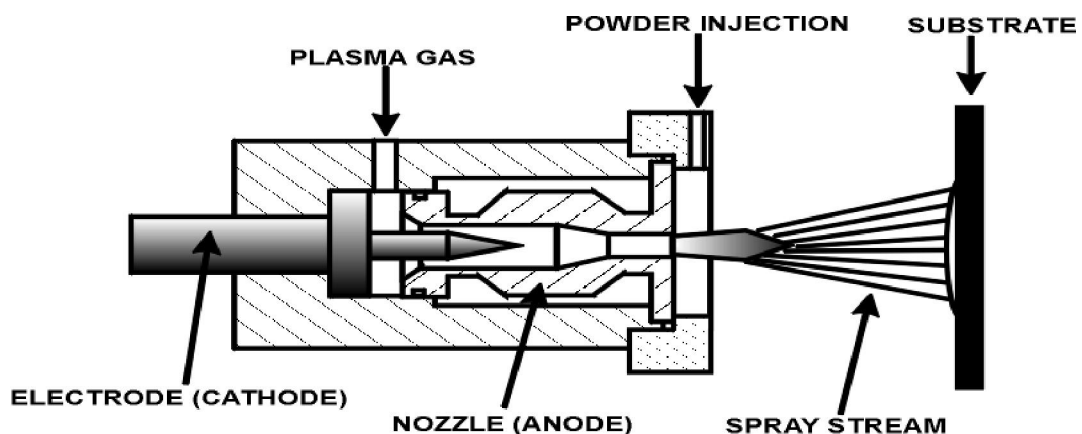
# MATERIALS

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Main Deposit: 99216 Ceramic Powder

## PLASMA SPRAY PROCESS

Plasma is the term used to describe gas, which has been raised to such a high temperature that it ionises and becomes electrically conductive. In the case of Plasma Spraying, the Plasma is created by an electric arc burning within the nozzle of a plasma gun and the arc gas is formed into a plasma jet as it emerges from the nozzle. Powder particles are injected into this jet where they melt and then strike the surface at high velocity to produce a strongly adherent coating.



## METHOD

### Cleaning

The surface should be free from grease, oil or other contaminants as this would affect the adhesion of the sprayed coating.

### Blasting

The surface should be grit blasted; the standard of surface cleanliness required is as Swedish Standard SA3. Surfaces not being treated should be masked before blasting.

## APPLICATION OF SPRAYED COATING

Spraying should begin as soon as possible after preparation and before any visible sign of deterioration occurs.

- (A) The Plasma Equipment should be set up in accordance with the Metallisation Manual for the spraying of the Ceramic powder.
- (B) The Area to be sprayed should be cleaned with a clean air blast to remove any loose particles of grit.
- (C) The Plasma Pistol should be set so that the spray stream is at 90° to the surface being coated and traversed at an even speed giving a uniform coating.
- (D) Apply Ceramic Coating to the required thickness.
- (E) Spraying Parameters 99216

Material	Ar Flow Lpm	N <sub>2</sub> Flow Lpm	Amps	Volts	Nozzle mm	Carrier Flow Lpm	GPM	Spray Dist mm
99216/30	22	1.1	850	40	8 mm Ext	6.76	36	75 mm

### Note: -

- a) Adjust Secondary Gas to achieve Voltage.
- b) Adjust Rpm to achieve Powder Feed Rate GPM
- c) Air Jets at 80 psi Parallel

### General

There should be the minimum of interruption from commencement of preparation to completion of spraying. At all times, the prepared surface should be protected from dust, dirt, moisture etc.

 REFERENCE TECHNICAL BULLETIN N°S :-

LE-WR-002 Arcsprayed Reinforced Coating System for Cookware

2.9.12.3 Metallisation 87/13 Alumina Titanium Ceramic Powder 99216