



thermal spraying technology definition

1 Introduction

Thermal spraying technology began in the early of this century. Initially, the molten metal is formed only by the flow of compressed air, sprayed onto the surface of the substrate to be coated to form a film layer of tissue. The spraying temperature, the performance of the droplet on the substrate surface and the impact velocity of the material forming the coating layer constituting the core spraying technology. The whole development of thermal spraying technology, which is basically along the three leading line to move forward. Temperature and speed depends on different heat source and the equipment structure.

In a sense, the higher the temperature, the faster the speed, the more excellent coating formation, which leads to two elements of the temperature and speed of technological development in the whole process of competition and coordination situation. Variety of coating materials selectively, is another advantage of thermal spray index, which can make different equipment of working face of different devices to be "the Golden, wearing helmet piercing." Just these three elements, so the thermal spraying technique to become a truly unique synergistic effect, it can be designed for the various properties of the surface, obtained from the general mechanical maintenance until the aerospace and high-tech fields such widely Bio-engineering applications.

On the Fourteenth International Thermal Spray Conference in Kobe, Japan, the automotive industry, metallurgy and energy as thermal spray application technology to deepen and focus on three main themes developed, indicating that the new trend in the expansion of this technology application.

2 Basic Concepts

2.1 Definitions

Thermal spraying is through such a series of processes : in some form of heat source to heat spraying materials, the heated material forming molten or partially molten state of particles, , the particles impact at a certain speed and deposited on the substrate surface, formation of a certain characteristic the sprayed layer. the particles at a certain speed impact and deposited on the substrate surface, forming has certain characteristics of the spraying layer.

2.2 spray material

Powder coating materials have different forms, such as powder, wire, tape, rod, etc. and with their component metals, alloys, ceramics, cermets and plastics. Powder material occupies an important position, over a hundred kinds of species. Multi-wire and strip metal or alloy (composite wires still contain ceramic or plastic); bars only a dozen, mostly oxide ceramics.