

TECH

Castagra is pioneering a solvent-free spraying system that can be used to apply multiple component 'biosafe' and highly durable protective plastic coatings in the field. The extremely robust and flexible coatings are unique and have a long pedigree of protecting ships, concrete structures, as well as being formed into moldings, sheets and shingles.

Recently, the high summer heat in Gilbert, Arizona, helped put the sizzle into Castagra's engineering efforts. A series of experimental trials resulted in an extraordinarily good set of technical results despite the high temperatures. The tests were kept secret until the patent filings were completed.

The industrial coatings industry has long recognized the need for high quality protective and aesthetic coatings that do not require the use of nasty solvents, either within the coatings or to flush out the equipment used to apply the various urethanes, epoxies, ureas, etc. used in construction, shipbuilding, oil & gas and other industries.

There are several "100% solids" coatings being used, meaning that everything that is included within the chemistry becomes part of the finished product and does not evaporate or bleed out over time. Most of these coatings are plural component systems, usually two part with a Part A and Part B that needs to be combined for the coating to cure.

The downside up to now has been that conventional equipment currently in use, especially for the increasingly popular solvent-free epoxy, urethane and urea coatings, normally requires a few gallons, or several liters of solvent, to purge and clean the equipment with each application. This defeats the purpose of creating solvent-free coatings.

Castagra is patenting a truly solvent-free system that mixes the two or more components right near the tip of the gun in a novel way that does not require the use of any solvent to clean the



equipment. The system and method works so well that much higher percentages of gypsum can be successfully sprayed or dispensed through mould filling wands and nozzles.

Importantly, there is no need to closely match viscosities or pressures as in other systems. Similarly, the ratios of the plural component parts A,B, etc. do not need to be matched to the standard 1:1, 1.5:1, 2:1, 3:1 or maximum 4:1 ratios used in current competing equipment offerings. The design also allows for very fast cure rates, which leads to greater profits for applicators and less operational downtime for customers.

The equipment is compact, easy to use, and can apply coatings, fill moulds, make panels and complete an assortment of other tasks with relative ease compared to traditional solvent purge systems. This is an important development that enables widespread usage of Castagra's products in a broad spectrum of field and factory applications.

Solvent-free spraying system