

Cold Spray Coating and Its Application for High Temperature

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Abstract : Amongst the existing coatings methods, the cold spray is new upcoming process to deposit coatings. As from the name itself, the cold spray coating takes place at very low temperature as compare to other thermal spray coatings. In all other thermal spray coating process the partial melting of the coating powder particles takes place before deposition, but cold spray process takes place in solid state. In cold spray process, the bonding of coating powder with substrate is not metallurgical as in other thermal spray processes. Due to supersonic speed and less temperature of spray particles, solid state, dense, and oxide free coatings are produced. Due to these characteristics, the cold spray coatings have been used to protect the materials against hot corrosion. In the present study, the cold spray process, cold spray fundamentals, its types, and its applications for high temperatures are discussed in the light of presently available literature. In addition, the assessment of cold spray with the competitive technologies has been conferred with available literature.

Keywords : cold spray coating, hot corrosion, thermal spray coating, high-temperature materials

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