Chapter 5

Conclusions

1. Stainless steel weld wire spraying

   1.1 Spray distance showed an influence on the average size of both in-flight particle and splat in which the longer distance produced the larger particle size obtained.

   1.2 Air pressure for the range employed in this study had no significant effect on size of the in-flight particles but showed slight influence on the splat size by decreasing splat size with an increase of air pressure.

   1.3 All varied spray conditions gave only a pancake-like splat implied the vigorous impact of the in-flight particle.

   1.4 Porosity and hardness of the coatings were influenced by the air pressure rather than the spray distance. The higher coating hardness related to the smaller splat size produced by the higher air pressure.

2. Stainless steel arc wire spraying

   2.1 Arc wire spraying produced smaller in-flight particle with larger splat size resulted in higher degree of flattening compared to weld wire spraying.

2.2 A arc sprayed coating has overall better coating microstructure and properties including denser structure, less porosity, higher hardness, although all coatings have comparable abrasive wear resistance.

3. Weld wire coating sprayed by C_4 spray condition has a superior coating properties over other weld wire coatings and it's overall properties and wear performance are comparable to the arc wire coating.